# Transposon- and genome dynamics in the fungal genus *Neurospora*: insights from nearly gapless genome assemblies

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## Abstract
A large portion of nuclear DNA is composed of transposable element (TE) sequences, whose transposition is controlled by diverse host defense strategies in order to maintain genomic integrity. One such strategy is the fungal-specific Repeat-Induced Point mutation (RIP) that hyper-mutates repetitive DNA sequences. While RIP is found across Fungi, it has been shown to vary in efficiency. The filamentous ascomycete *Neurospora crassa* has been a pioneer in the study of RIP, but data on TEs and RIP from other species in the genus is limited. In this study, we investigated 18 nearly gapless genome assemblies of ten *Neurospora* species, which diverged from a common ancestor about 7 MYA, to determine and compare genome-wide TE distribution and their associated RIP patterns. Four of these assemblies, generated by PacBio technology, represent new genomic datasets. We showed that the TE contents (8.7-18.9%) covary with genome sizes that range between 37.8-43.9 Mb. Degraded copies of Long Terminal Repeat (LTR) retrotransposons were abundant among the identified TEs, and these are distributed across the genome at varying frequencies. In all investigated *Neurospora* genomes, TE sequences had signs of numerous C-to-T substitutions, suggesting that RIP occurred in all species, and accordingly, RIP signatures correlated with TE-dense regions in all genomes. In conclusion, essentially gapless genome assemblies allowed us to identify TEs in *Neurospora* genomes, and reveal that TEs contribute to genome size variation in this group. Our study suggests that TEs and RIP are highly correlated in each examined *Neurospora* species, and hence, the pattern of interaction is conserved over the investigated evolutionary timescale. Finally, with our results, we verify that RIP signatures can be used to facilitate the identification of TE-rich regions in the genome. The comprehensive genomic dataset of *Neurospora* is a rich resource for further in-depth analyses of fungal genomes by the community.

## Introduction
Advanced sequencing technologies have yielded numerous genome assemblies of high quality from diverse species across the tree of life (O'leary *et al.* 2015). Despite the availability of these assemblies, there are still difficult-to-sequence genomic regions, such as repetitive sequences and centromeres (Johnson *et al.* 2005; Peona *et al.* 2018). The difficulty to sequence these regions has limited studies of genome architecture and evolution, which depend on data from multiple

genomes. Thus, availability of high-quality gapless genome assemblies from multiple individuals and species are critically needed, particularly to understand how repetitive sequences contribute to genome size evolution and how genome integrity is maintained.

Genomes are dynamic entities, subject to large and small-scale rearrangement events that can lead to gains and losses of genomic DNA sequences. Transposable elements (TEs) are genetic elements present in eukaryotic and prokaryotic genomes, characterized by their ability to propagate in the genome. While TEs may contribute to evolutionary change and innovation (Werren 2011), TE activity can lead to deleterious effects including insertional disruption of functionally important sequences such as promoters or genes themselves, gene miss-expression, and silencing of adjacent genes (Hollister and Gaut 2009; Chuong *et al.* 2017). TEs can also mediate ectopic recombination between distant chromosomal regions, inversions, and deletion of genomic sequences (Cáceres *et al.* 1999; Gray 2000).

Based on the nature of their transposition intermediates, TEs can be classified as Class I RNA retrotransposons (transposition via RNA intermediate) or Class II DNA transposons (transposition via DNA intermediate) (Wicker *et al.* 2007; Makałowski *et al.* 2019). They are further divided into subclasses, orders, and super-families based on their specific structural and coding features. Class I elements, consisting of LTR retroelements, LINEs (Long Interspersed Nuclear Elements) and SINEs (Short Interspersed Nuclear Elements), are the most frequent class of TEs in many animals (e.g., *Drosophila melanogaster*), plants (e.g., *Arabidopsis thaliana* and maize), and fungi (Arabidopsis Genome 2000; Feschotte and Pritham 2007; Schnable *et al.* 2009; Amselem *et al.* 2015).

To counterbalance potential detrimental side effects of genome-damaging agents, genome defense mechanisms have evolved to ensure the maintenance of genome integrity (Matzke *et al.* 2000; Selker 2004; Johnson 2007; Blumenstiel 2011). Eukaryotes have evolved ways to defend their genomes against TEs (Matzke *et al.* 2000; Gladyshev and Kleckner 2016). For example, plants and animals utilize methylation and RNA interference (RNAi)-based mechanisms (Colot and Rossignol 1999; Zeng *et al.* 2019). In fungi, one such mechanism is sequence homology-based Repeat-Induced Point mutation (RIP) (Selker 1990; Selker 2002). First discovered in *Neurospora crassa*, RIP permanently mutates duplicated sequences, such as TEs, and introduces multiple C-to-T transition mutations, predominantly at CpA dinucleotides, in both copies of the sequences, skewing dinucleotide frequencies towards an over-representation of TpA in mutated sequences (Selker 1990; Selker 2002). For RIP to occur, there are requirements for minimal duplicated sequence length of about 400 base pairs (bp), though sequences as short as 155 bp have been reported, and sequence identity of greater than 80% (Cambareri *et al.* 1991; Watters *et al.* 1999; Gladyshev and Kleckner 2014). In evolutionarily diverged fungal species where RIP has been experimentally demonstrated, intact and active TEs are still present in the genomes (reviewed in (Hane *et al.* 2015)). In contrast, RIP is considered highly efficient in *N. crassa* (but see (Singer *et al.* 1995)) and has resulted in the essential absence of intact and active TEs (Galagan and Selker 2004).

Here we study the distribution of TEs and RIP in the filamentous fungal genus *Neurospora*. The motivation of our study is fourfold. First, the genus *Neurospora* represents a tractable system; it has small genomes relative to other eukaryotes (~43 Mb) (Galagan *et al.* 2003; Borkovich *et al.* 2004), and the model organism *N. crassa* has a well-annotated genome (Galazka *et al.* 2016). Second, in addition to the well-studied *N. crassa*, the genus contains multiple species for which the species boundaries and phylogenetic relationship is well resolved (Dettman *et al.* 2003; Villalta *et al.* 2009; Corcoran *et al.* 2012; Corcoran *et al.* 2014). The last

common ancestor of the *Neurospora* clade diverged within the last 7 million years, hence the system provides a framework for comparative studies over relatively short evolutionary timescales (Whittle and Johannesson 2012). Third, despite its relatively small genome, about 10% of the *Neurospora* genome is comprised of repetitive DNA sequences (Galagan *et al.* 2003; Hosseini *et al.* 2020). Fourth, the efficiency of RIP varies across the kingdom Fungi (Galagan and Selker 2004; Hane *et al.* 2015). Previous studies on the conservation of the gene *rid*, which is essential for RIP, in *N. tetrasperma* and *N. intermedia* (Freitag *et al.* 2002) and on the mutational bias in *N. tetrasperma* (Ellison *et al.* 2011), have indicated conservation of the RIP-process in *Neurospora*, but no systematic survey of the TE and RIP pattern in the genus have been carried out so far. Altogether, *Neurospora* genomes present a well-suited model system for studying the relationship between TEs and genome defense.

Our study of the TE landscape in *Neurospora* was facilitated by high-quality nearly gapless genome assemblies of long-read sequenced genomes. We thus comprehensively surveyed TEs based on their diversity, sequence abundance, and chromosomal distribution in each genome assembly, and compared these features between and within species to better describe the dynamics of TE variability. Furthermore, we determined how RIP associated with TEs among the different genomes in this *Neurospora* clade to better understand whether RIP efficiency in *N. crassa* is a general feature of *Neurospora*. Finally, with our study, we confirm the application of genome-wide RIP index to identify TE enriched locations in the genome, when identifying TEs in genomes heavily affected by RIP is not possible.

## Results

### *Nearly gapless* Neurospora *assemblies*

To study the TE and RIP landscapes of closely-related *Neurospora* species (Figure 1) (Menkis *et al.* 2009; Corcoran *et al.* 2014; Corcoran *et al.* 2016), we first generated PacBio assemblies from four genomes, providing new genomic datasets. Two of these genomes previously lacked genomic information [*N. hispaniola* (FGSC 8817), and *N. metzenbergii* (FGSC 10397)] (Table S1), and from *N. intermedia* (FGSC 8767) and *N. discreta* (FGSC 8579), genomic data generated using short-read sequencing technologies have previously been published (Grigoriev *et al.* 2011; Svedberg *et al.* 2018). Additionally, we used 11 previously published PacBio-sequenced genome assemblies [i.e. from the genomes of *N. intermedia* (FGSC 8761, 8807), *N. sitophila* (FGSC 5940, 5941, W1426, and W1434), and *N. tetrasperma* (FGSC 2503, 2504, 9045, 9046, and 10752)] (Jacobson *et al.* 2006; Sun *et al.* 2017; Svedberg *et al.* 2018; Hosseini *et al.* 2020; Svedberg *et al.* 2021). Reference assemblies are available for *N. crassa* (FGSC 2489) and two strains of *N. tetrasperma* L6 (FGSC 2508, 2509) (Galagan *et al.* 2003; Ellison *et al.* 2011). In total, we analyzed 18 genomes from 10 *Neurospora* species, of which 15 genomes were PacBio-sequenced, resulting in dense taxon sampling both across the phylogeny and within specific species (*N. sitophila* (4 strains) and *N. intermedia* (3 strains)) (Figure 1, Table S1).

The assemblies of the PacBio-sequenced genomes were nearly gapless. We recovered contigs that could be anchored to the seven chromosomes in each of the PacBio genome assemblies that were co-linear with the seven chromosomes in *N. crassa* (Perkins *et al.* 2001), indicating that our assemblies were at the chromosome level. One assembly (strain FGSC 5940) had no gaps [the one excess contig is mitochondrial DNA], and from three other strains (W1434, and FGSC 8807 and 9046) we identified up to 8 unplaced contigs that represent gaps in the assembly resulting from the repetitive ribosomal RNA genes. Two strains of *N. intermedia* (FGSC 8767 and 8761) had particularly more “gappy” assemblies, where 24 and 10 contigs

mapped to the 7 *N. crassa* chromosomes, respectively. For all PacBio assemblies, the 1 to 29 unplaced contigs that could not be mapped to the *N. crassa* reference genome were mitochondrial DNA and ribosomal RNA genes. The assembly sizes of the examined *Neurospora* genomes ranged from 37.8 to 43.9 Mb, and for *N. crassa* it was 41 Mb (Table S1).

*The curated* Neurospora *TE library*

TE identification in the nearly gapless genome assemblies involved sequence similarity searches based on a modified version of an existing query repeat sequence library (Gioti *et al.* 2012). The original 978 repeats library was curated and reduced to 844 repeats. An additional 41 *N. crassa* TE sequences obtained from NCBI GenBank, from Selker et al. (Selker *et al.* 2003), and from Wang et al. (Wang *et al.* 2015) were added to the updated TE query library for a total of 885 repeats for RepeatMasker analyses, and the library has been made available at: https://doi.org/10.6084/m9.figshare.12199409.v1 (Nguyen and Johannesson 2021).

*Genomic TE content rich in LTR retrotransposons*

The *Neurospora* genomes were comprised of both Class I RNA retrotransposon and Class II DNA transposon sequences. These TE sequences represented 7.66 Mb of genomic DNA (17.43% of genome) in *N. metzenbergii*, the species with the largest genome. In two of the species with the smallest genomes, these TEs represented less than 4 Mb of the genomes (*N. sitophila*: 3.45 Mb, 9.11% of genome; and *N. discreta*: 3.95 Mb, 10.46% of genome) (Figure 1; Table S2). We found that TE sequences comprised 13.02% (5.34 Mb) of the *N. crassa* genome, which is similar to a previous report (Galagan *et al.* 2003).

The proportion of genomes occupied by the different TE families (e.g., LTR retrotransposon, LINE, or DNA elements) varied considerably among the *Neurospora* species (Figure 1, Figure S1). However, the LTR retrotransposon sequences were most abundant in all *Neurospora* genomes (Figure 1). They made up the largest fraction of the TE sequences (1.44 - 3.85 Mb or 3.74 - 8.77% of genomes), followed by LINE elements (0.34 - 1.20 Mb or 0.86 - 2.74% of genomes), DNA elements (0.09 - 0.51 Mb or 0.24 - 1.17% of genomes), and repeat sequences that could not be classified (Unclassified repeats, 0.70 - 2.06 Mb or 1.82 - 4.69% of genomes) (Table S2, Figure S1).

*TEs locate across all seven* Neurospora *chromosomes*

For all *Neurospora* genomes investigated, numerous TE sequences were identified on each of the seven *Neurospora* chromosomes, but sliding window analyses suggest certain regions per chromosome were particularly enriched (log2 observed/expected values >2) (Figure 2, Figure S2, top panels). Similar patterns of enrichment were observed between orthologous chromosomes in each of the *Neurospora* species (Figure S2, top panels).

*Genome size correlation with TE content*

In *Neurospora* species, TE content correlated positively with genome size (Figure 3), suggesting TE contribution to genome size expansion in *Neurospora*. Our data suggest that primarily LTR retrotransposons and unclassified repeats are the responsible families: while these families are correlated with larger genome sizes, other TEs were weakly or not at all correlated to genome size (Figure S3). We also see deviations from the regression, indicating that the TE expansion is not the only factor contributing to genome size variation. A number of genomes fell outside the 95% confidence interval of the regression; these genomes either had more or fewer TEs than

expected. For example, *N. discreta* and *N. sitophila* (strains FGSC 5940 and W1434, W1426) had more TE sequences than expected relative to their genome sizes, as predicted using the correlation between the remaining species (Figure 3).

*RIP signatures were detected in all* Neurospora *species*

The composite RIP index can be used as a proxy for the RIP activity in a genomic region; positive values indicate that RIP has occurred (Margolin *et al.* 1998; Lewis *et al.* 2009). For this study, we developed a method to determine genome-wide RIP indices in our assembled genomes independent of the underlying sequence context or genomic content (e.g., genic regions, repetitive regions). As expected, we observed RIP signature in the reference *N. crassa* genome, and similar patterns were observed for the other 17 genomes in this study (Figure S4, "obs").

Composite RIP index values for each genome assembly were also calculated for 10 kb windows, delineated independently of the sequence context or genomic content, and plotted over the length of the chromosome (Figure 2, Figure S2, bottom panels). Positive values indicated that a region had experienced RIP activity. Note that these RIPed regions coincided with windows enriched in TEs (Figure 2, right panels, Figure S5). Taken together, on a genome-wide scale, TE sequences were observed to have experienced RIP.

*TE partly accounts for intra-species genome size variation*

We observed genome size variation between strains of *N. sitophila* and *N. intermedia* (Table S1). To better understand the variation within species, particularly whether TEs accounted for the gain or loss of DNA, we compared the high-quality nearly gapless genome assemblies of three independent *N. intermedia* strains and four independent *N. sitophila* (Table S1).

We found genome size differences among *N. intermedia* as the FGSC 8767 assembly was approximately 3.4 Mb smaller than FGSC 8807 and FGSC 8761 (Table S1), and TEs contributed to 1.95 Mb of this size difference (Table S2). The FGSC 8767 assembly was, however, more fragmented than the other two *N. intermedia* assemblies that had fewer and longer contigs mapped to *N. crassa* (Table S1). Therefore, we cannot rule out that the difference in size among the *N. intermedia* genomes is due to unassembled repetitive sequences in the FGSC 8767 genome, demonstrating the importance of high-quality and nearly gapless assemblies for more specific/detailed whole-genome comparisons within and across species.

Among the four *N. sitophila* strains, W1434 had approximately 1 Mb larger genome than the other three strains (W1426, FGSC 5940, FGSC 5941: 37.9-38.4 Mb) (Table S1). In contrast to *N. intermedia*, the genome assemblies of the *N. sitophila* strains are more even in quality, with fully mapped contigs to *N. crassa* (with the exception of mitochondrial DNA and ribosomal RNA genes). Hence, we suggest that the larger genome size of W1434 is a consequence of different genome rearrangements, for example by accumulation of certain TE families, rather than assembly quality due to fragmentation. Indeed, the size difference could be accounted for by an excess in repetitive sequences that were dispersed along the seven chromosomes (Figure S2). The TE content of W1434 was about 0.7 Mb larger than the other two *N. sitophila* genomes (4.25 Mb compared with 3.45-3.58 Mb in W1426, FGSC 5940, FGSC 5941), of which 0.589 Mb (82%) of sequences were contributed by LTR retrotransposons alone (Table S2).

*Lineage-specific TEs in* Neurospora

We investigated TE activity in *Neurospora* by searching for lineage-specific TE sequences. We scored pairwise alignments of individual TE-flanking regions for TE presence and absence. We

assumed a specific TE present to be the result of an insertion. These insertions indicate recent TE accumulation, and we refer to them as "pairwise lineage-specific TE insertions" herein. We found between 0 and 23 insertions per genome (Table S3) and these were either LTR and LINE retrotransposons from 82 subfamilies (Table S4). In total, we found 593 pairwise lineage-specific LTR retrotransposons in our pairwise comparisons (of which 406 putative full-length insertions; Tables S3 and S4) belonging to 76 subfamilies and 509 LINE belonging to 6 subfamilies (Tables S3 and S4) suggesting a diversification of LTRs. Most of the insertions (32%) were represented by ncra_Tad1_01 LINE subfamily, followed by ncra_LTR_69, ntet_Tad1_01, Tad1.1 (4% each), ntet_LTR_18, ncra_LTR_49, ncra_Tad1_06 (3% each; Table S5).

**Discussion**

Genome integrity is maintained by different mechanisms to ensure genome function and successful transmission of genetic material to the next generation. However, variation in genomic DNA content can still be observed. The study of genome content variations has been made possible by availability of high-quality genome assemblies via the employment of next generation and newer sequencing technologies, increasingly available at low costs and with increasing efficiency and accuracy. In this study, we investigated 18 nearly gapless genome assemblies of ten *Neurospora* species to determine and compare genome-wide TE distribution and their associated RIP patterns.

The first report on the 38 Mb genome assembly of *N. crassa* indicated that 10% of the genome consisted of repetitive elements, which were detected based on filtering of alignments longer than 200 bp (Galagan *et al.* 2003). In our study, we found that 13% of the genome in *N. crassa* consists of TE sequences. The difference between our studies may be due to the underrepresentation of SINE elements and truncated elements in the original draft genome. We now add to the body of knowledge that closely-related *Neurospora* species have similarly large proportions of their genomes comprised of repetitive elements. Nevertheless, we found variation in repetitive content, both between and also within species. Among our investigated *Neurospora* genomes, TE contents vary between 8.7 and 18.9% of the genome.

One main finding of this study is the correlation between TE content and genome size in *Neurospora*. Genome size has been reported to be positively correlated with the abundance of TEs in diverse lineages of eukaryotes (Kidwell 2002; Oliver *et al.* 2013). Many studies on the topic have been based on comparisons across distant and diverged lineages, but as the number of high-quality genome assemblies increase, more studies comparing closely-related species are reported (Gregory and Johnston 2008; Hu *et al.* 2011; Legrand *et al.* 2019). In fungi, a positive correlation between TE content and genome size has been reported on both long and short evolutionary time scales (Ohm *et al.* 2012; Grandaubert *et al.* 2014; Benevenuto *et al.* 2018; Badet *et al.* 2020; Haridas *et al.* 2020). In our study with *Neurospora* species that diverged from a common ancestor within the last 7 million years, we observed similar genome size-TE correlations. Our result is noteworthy given that, in the model species *N. crassa*, TEs are expected to be inactive due to the operation of RIP, which we here verify to be a conserved genome defense system in the genus. Hence, our data suggest that in spite of an active RIP system, TEs are actively contributing to genome size evolution in *Neurospora*. This pattern can be explained by TEs being able to escape RIP and proliferate in the genome, a claim that needs experimental verification. Alternatively, as previously demonstrated, the contribution of TEs to genome size evolution depends on TE accumulation relative to the overall deletion rate (Kapusta *et al.* 2017), and at this point we cannot exclude the alternative possibility that the variation in

TE content between *Neurospora* strains and species is a result of differential loss of an ancestral pool of TEs in the different lineages, possibly via genomic rearrangements (see for example (Ren *et al.* 2018)).

Large genome size variation among individuals within a species has also previously been attributed to TEs (e.g. (Kalendar *et al.* 2000) and (Black and Rai 1988)). Our study involves broad sampling of *Neurospora* species, of which two are represented by multiple strains providing a brief look into intraspecific variation also in our data. With sampling of up to four strains in *N. sitophila* and *N. intermedia*, we indeed found variation in TE content, suggesting that TEs can contribute to genome size evolution also within species. Our view of TE dynamics over short evolutionary time is supported by our identified specific TE insertions. These numbers are small, and primarily represented by LTR retrotransposons and LINE elements. We used a conservative analysis pipeline based on identification of orthologous regions flanking the TE and queried whether the corresponding region contains a TE or not (thus intact or uninterrupted by a TE) in the contrasting genome. TEs often cluster, and/or nest within other TEs over time (Jedlicka *et al.* 2019). Furthermore, RIP has been shown to extend beyond the duplicated target region (Foss *et al.* 1991; Gladyshev and Kleckner 2016), complicating identification of orthologous TE flanking sequences between the compared genomes. Thus, the low number of observed genomic pairwise TE differences could be hampered by nested insertion and RIP activities, highlighting the need for a broad sampling and sequencing to resolve most individual TE loci along the host phylogeny.

Our study demonstrates that RIP signatures can be computationally assessed in *Neurospora* similar to previous reports on a wide diversity of ascomycete and basidiomycete fungi (Selker *et al.* 2003; Lewis *et al.* 2009; Clutterbuck 2011; Horns *et al.* 2012; Clutterbuck 2017). Tools have previously been developed to study RIP in fungal genomes (Montanini *et al.* 2014; Van Wyk *et al.* 2019). Here, we developed a method to assess RIP genome-wide, independent of the underlying sequence context and genomic content, available in the R package ripr (https://github.com/NBISweden/ripr). This resource can prove useful to identify genomic regions, e.g., centromeres that are TE rich (Smith *et al.* 2012; Friedman and Freitag 2017), without identification of TEs first, which can be a difficult task depending on the methods used for detection (Lerat 2010; Goerner-Potvin and Bourque 2018). The pattern from the present study demonstrating correlation between TEs and RIP have the potential to become a useful tool in several lines of fungal genome assessments from determining TE content by analyzing a less complicated RIP index. Also, in species where repetitive sequences such as TE frequently accumulate at centromeric regions, RIP screening could facilitate identification of such TE-associated genomic regions.

Detected RIP signatures does not however directly demonstrate RIP activity, as other mutational sources present confounding factors, as observed in retroviruses where A- and T-mutations accumulate following reverse transcription (Katz and Skalka 1990; Menendez-Arias 2009). Additionally, RIP index has been developed from *N. crassa* and dinucleotide contexts in other fungal species can vary, and even include trinucleotide contexts (Ikeda *et al.* 2002; Hood *et al.* 2005; Horns *et al.* 2012), and further experiments are needed to establish RIP activity in these species. Comparison of RIP efficiency between fungal species will benefit from experiments to quantify the extent of RIP over a number of sexual generations in *Neurospora*.

## Conclusions

Genome evolution studies benefit greatly from availability of nearly gapless genome assemblies.

Here, we have generated, analyzed, and made available high-quality nearly gapless fungal (*Neurospora*) genome assemblies. We identify variation in TE content within genomes, between genomes of the same species, and among species. Hence, in spite of the conserved RIP machinery in *Neurospora*, our data suggest that TEs are likely transposing in *Neurospora* and contribute to genome size evolution, but experimental data is needed to confirm whether the TEs are active in Neurospora. Finally, we developed a method to determine the RIP indices across a genome assembly to identify regions rich in TE sequences without first knowing the underlying sequence context and genomic content. The rich genomic resource we herein provide enables further in-depth analyses of the features of fungal genomes.

**Methods**

**Strains investigated in the study.** *Neurospora* genomes used in this study were either generated in house or collected from public databases (Table S1). All strains sequenced for this project were obtained from the Fungal Genetics Stock Center (http://www.fgsc.net/) and *N. sitophila* W1434, which was provided by Jacobson et al. (Jacobson *et al.* 2006). All strains used in this study (Table S1) are referred to by their FGSC identification numbers, unless otherwise noted (e.g. W1426 and W1434, which were kindly provided by D. J. Jacobson (Jacobson *et al.* 2006)). We used three publicly available, well-annotated *Neurospora* genome assemblies that included *N. crassa* (*N. crassa* OR74A version 12 (FGSC 2489) (Galagan *et al.* 2003), sequenced by Broad Institute, corrected for the assembly error detected by Galazka et al. (Galazka *et al.* 2016)), and *N. tetrasperma* (FGSC 2508 *mat A* and FGSC 2509 *mat a* (Ellison *et al.* 2011)). Other PacBio generated assemblies were previously published (Sun *et al.* 2017; Svedberg *et al.* 2018; Hosseini *et al.* 2020; Svedberg *et al.* 2021). The remaining genomes were generated following previously published PacBio sequencing and assembly protocols (Sun *et al.* 2017; Svedberg *et al.* 2018) and are reported for the first time in this study (Table S1).

**TE sequence detection.** Repetitive DNA and TEs were identified using RepeatMasker (Version 4.0.8, http://www.repeatmasker.org) with Dfam database of repetitive DNA families obtained 20171107 (Hubley *et al.* 2015), and RepBase (Jurka 2000), as well as a curated *Neurospora*-specific TE library generated in this study (Nguyen and Johannesson 2021).

To curate the *Neurospora*-specific TE library, we utilized an existing *Neurospora*-specific repetitive sequence library (Gioti *et al.* 2012) to identify repetitive sequences (TEs, simple repeats and low complexity sequences) in each of the *Neurospora* assemblies and collected results into and updated TE library that included TEs called from of *N. crassa* (Galagan *et al.* 2003), *N. discreta* (http://genome. jgi-psf.org/Neudi1/) and *N. tetrasperma* (http://genome.jgi-psf.org/Neute1/) and *Neurospora* species sister to the clade containing *N. discreta* (Gioti *et al.* 2012). In summary, the original TE library (Gioti *et al.* 2012) was compiled with RepeatModeler and LTRharvest, which yielded a total 978 repeats (http://fungalgenomes.org/public/neurospora/data/repeatlib/ Gioti_neurospora_repeats.renamed.lib). The TE library was further curated manually because many previously LTRharvest-identified repeats were incorrect. All 978 elements were re-assessed, including 274 sequences that were previously identified by LTRharvest, and 566 sequences that were classified by RepeatModeler as “Unknowns”, which may include multicopy genes. LTRharvest-identified repeats were queried against the conserved domain database (CDD, *v 3.17, 52910 PSSMs e-value setting 0.01*.) to determine the presence of LTR retrotransposon-related protein domains (belonging to e.g. *gag*, *pol* (including RNaseH, reverse transcriptase, and

integrase), and CHROMO domain) (Marchler-Bauer *et al.* 2014; The Uniprot Consortium 2018). Sequences were kept in the curated TE library if one of these protein domains were present, with the exception of CHROMO domains which required presence of an additional *gag* or *pol* sequence. Cellular genes, with or without transposon-related domains, were removed. RepeatModeler-classified "Unknown" repeats were queried against the CDD. Repeats with sequence similarity to cellular genes were removed from the curated TE library. Sequences without similarity matches to transposon-related protein domains (or cellular genes) were kept in the library as these could represent non-autonomous transposable elements such as SINEs normally lacking identified protein domains.

RepeatModeler-derived "DNA", "LTR", and "LINE" repeats (n=8, 61, and 23 sequences, respectively) were confirmed for presence of transposase- [DNA] or retrotransposon- [LTR, LINE] related protein domains in CDD. RepeatModeler-derived "SINE" repeats (n=40 sequences) were confirmed in the genomic tRNA database (Data Release 18.1 (August 2019)), using tRNAscan-SE webserver (http://trna.ucsc.edu/tRNAscan-SE/) and SINEBase (Vassetzky and Kramerov 2012; Lowe and Chan 2016). SINE repeats with 100% sequence similarity to a tRNA gene were removed from the curated TE library. The non-redundant nucleotide database (blastn (Altschul *et al.* 1997)) and Repbase (CENSOR: (Kohany *et al.* 2006; Bao *et al.* 2015)) were also used to identify transposon similarities for a subset of repeat sequences without conclusive results.

The curated TE library used in this study can be accessed at figshare (https://doi.org/10.6084/m9.figshare.12199409.v1) (Nguyen and Johannesson 2021). We analyzed each *Neurospora* assembly using the updated "Gioti_neurospora_repeats.renamed.v2_191004.lib library" (844 TE sequences), the available *Neurospora crassa* TEs from NCBI Genbank (9 TE sequences), as well as additional TEs described by Selker et al. (Selker *et al.* 2003) (28 TE sequences) and Wang et al. (Wang *et al.* 2015)(4 TE sequences) by using RepeatMasker (RepeatMasker version 4.0.8, run with rmblastn version 2.6.0+, and combined database: Dfam_Consensus 20171107 and RepBase Update 20181026). We limited our query library to include TEs from *Neurospora* and thus exclude other fungal repeats reported in RepBase (Jurka *et al.* 2005). The RepeatMasker ".tbl" outputs were used to quantify proportions of the assemblies that contained TEs. The RepeatMasker ".out" outputs were used to calculate the composite RIP index for each of the repeat sequences. Fragmented TEs were not stitched together to create intact TEs, and nested TEs were not disentangled. Here we utilized the RepeatMasker repeat class/family categorization (column 11 in the .out file: DNA, LTR, LINE, SINE, Unclassified, Simple repeat and Low complexity).

**Identification of lineage-specific TE insertions.** In order to identify lineage-specific TEs, we modified the methodology illustrated in Guichard et al. (Guichard *et al.* 2018) for presence and absence alignments of TE insertion flanking DNA. We considered a TE insertion to be species-specific when the flanking DNA (occupied integration site or presence state) in the first species are found unambiguously in close proximity in the second species (unoccupied pre-integration site or absence state). All the occupied integration sites for which we found multiple pre-integration sites or undetermined orthology (e.g. when the species are too evolutionary far away from one another) were classified as unresolved integration sites.

Identification involves two steps. First, we extracted 500 bp flanking the TE insertions from each *Neurospora* assembly (based on the RepeatMasker annotation) and aligned to all other *Neurospora* assemblies. The alignment was filtered for putative unoccupied pre-integration sites

by identifying TE flanking DNA that aligned less than 50 bp apart and with at least 70% similarity (to take RIP into account). Second, we required the putative pre-integration sites to be unique and therefore aligned these to the first species. If the putative pre-integration site mapped uniquely and at least for 80% of the locus length to the TE integration site, the insertion was classified as a species-specific insertion. In case the putative pre-integration sites had ambiguous alignments in the first comparison assembly, the insertion was classified as an unresolved site. Finally, when both TE flanking sequences failed to map confidently, the corresponding insertions were classified as unresolved sites. Scripts can be found in the Github repository https://github.com/ValentinaBoP/NeurosporaSpecificTE.

**TE distribution in the genome.** To determine the distribution of TEs along the *Neurospora* genomes, we calculated log2-ratios of observed to expected TE content in 10-kb non-overlapping sliding windows. For each window, observed TE content was calculated by summing the intersection of the window coordinates with the TE coordinates, as defined in the RepeatMasker output file ".out". The expected TE content was calculated as the window size times the genome-wide TE fraction.

**Composite RIP index calculations.** RIP indices were calculated for each of the transposon sequences identified by Repeat Masker. Frequencies of TpA, ApT, CpA, TpG, ApC, and GpT dinucleotides in each of the sequences were tabulated in the RepeatMasker outputs ".out" file; sequences were extracted using the EMBOSS seqret function (Rice *et al.* 2000). From these frequencies, the ratios TpA/ApT ("RIP product index") and (CpA+TpG)/(ApC+GpT) ("RIP substrate index") and the composite RIP index [(TpA/ApT) - (CpA+TpG)/(ApC+GpT)] were calculated (Margolin *et al.* 1998; Lewis *et al.* 2009). TEs considered to have experienced RIP are described as TpA/ApT > 0.89 and (CpA+TpG)/(ApC+GpT) < 1.03, as well as positive values of the composite RIP index (Margolin *et al.* 1998; Galagan *et al.* 2003; Lewis *et al.* 2009).

To assess the significance of composite RIP scores in 10-kb non-overlapping sliding windows for TEs in a *Neurospora* genome, we first validated that the composite RIP index could be applied across a genome to indicate regions of RIP activity. We used each genome in turn as reference and generated mock genomes with equal length to the respective reference genome, and used these to calculate null distributions of RIP scores. Mock sequences were generated in two ways, either by shuffling all genome positions or drawing nucleotides at random from the observed nucleotide frequency distribution, preserving genome length in both cases. For each panel in Figure S4, three distributions were plotted. First, the observed RIP distribution for a genome was calculated using the repeats determined by RepeatMasker ("obs"). Second given the positions of the repeats in the genome, RIP scores were recalculated by shuffling the repeat positions for two different cases. A random genome was obtained by shuffling the bases ("shuffle"), and third, generated by sampling nucleotides from the observed nucleotide frequency distribution ("frequency"), Cases 2 and 3 will disrupt all repeat regions such that no RIP signal should be observed. Functions to calculate RIP were implemented in R and are available in the R package ripr; the analysis pipeline is also in figshare (https://doi.org/10.6084/m9.figshare.12652433.v2).

The correlation between windows with RIPed sequences and windows enriched in TEs were visualized with the segmented package (version 1.2-0) in R (version 3.6.0) (R Core Team 2013; Muggeo and Muggeo 2017). Linear regression models were estimated with two segmented relationships. Estimates of the slopes and breakpoints are provided. The psi ("psi1") value

indicates the breakpoint. The adjusted $R^2$ ("adjusted R") value gives an indication of how well the linear models fit the data, adjusted for the number of parameters, and considers both regression lines.

**Data and Resource Availability**

All previously unpublished raw sequencing reads generated in this study have been deposited at the Sequence Read Archive as BioProject PRJNA622402. All genome assemblies based on PacBio sequencing technology and reference assemblies, the RepeatMasker tables of repeats for all genomes (".tbl" and ".out" files), and the curated *Neurospora* TE library have been deposited as a collection in figshare (https://doi.org/10.6084/m9.figshare.c.4310996) (Nguyen *et al.* 2021). The pipeline to determine RIP and TE landscape patterns, and RIP background are contained in an R script also deposited in figshare (https://doi.org/10.6084/m9.figshare.12652433.v2), as part of the above collection.

**Competing Interests**

The authors declare no conflict of interest.

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**Authors' contributions**

DN, VP, PU analyzed data and all authors participated in data and results interpretation. DN and HJ drafted the manuscript and VP, PU, AS, PJ contributed to writing the manuscript. All authors read and approved the final manuscript.

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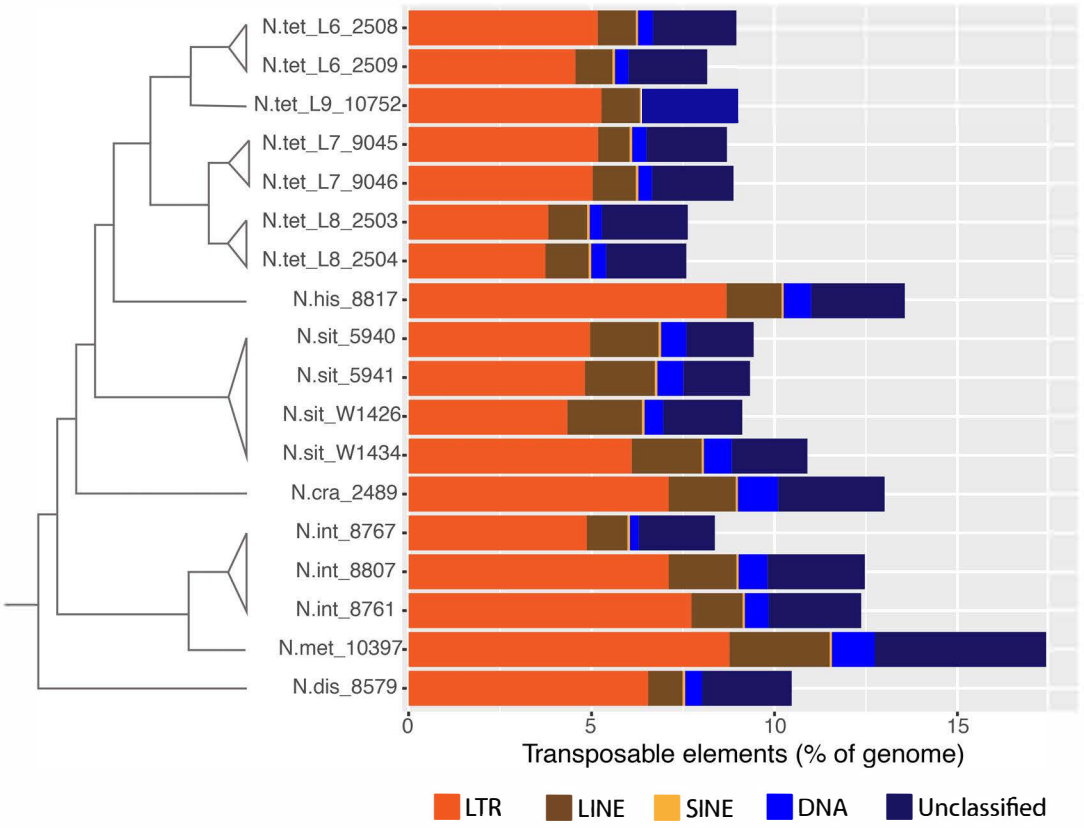


**Figure 1.** Schematic *Neurospora* phylogeny and TE-distributions. The left panel phylogeny was modified from (Nygren *et al.* 2011; Corcoran *et al.* 2014; Corcoran *et al.* 2016). The right panel indicates TE composition in each genome determined by calculating the number of TE nucleotides relative to the assembly length (in percent) for each of the TE families (Class I: LTR, SINE, and LINE; Class II: DNA; Unclassified).

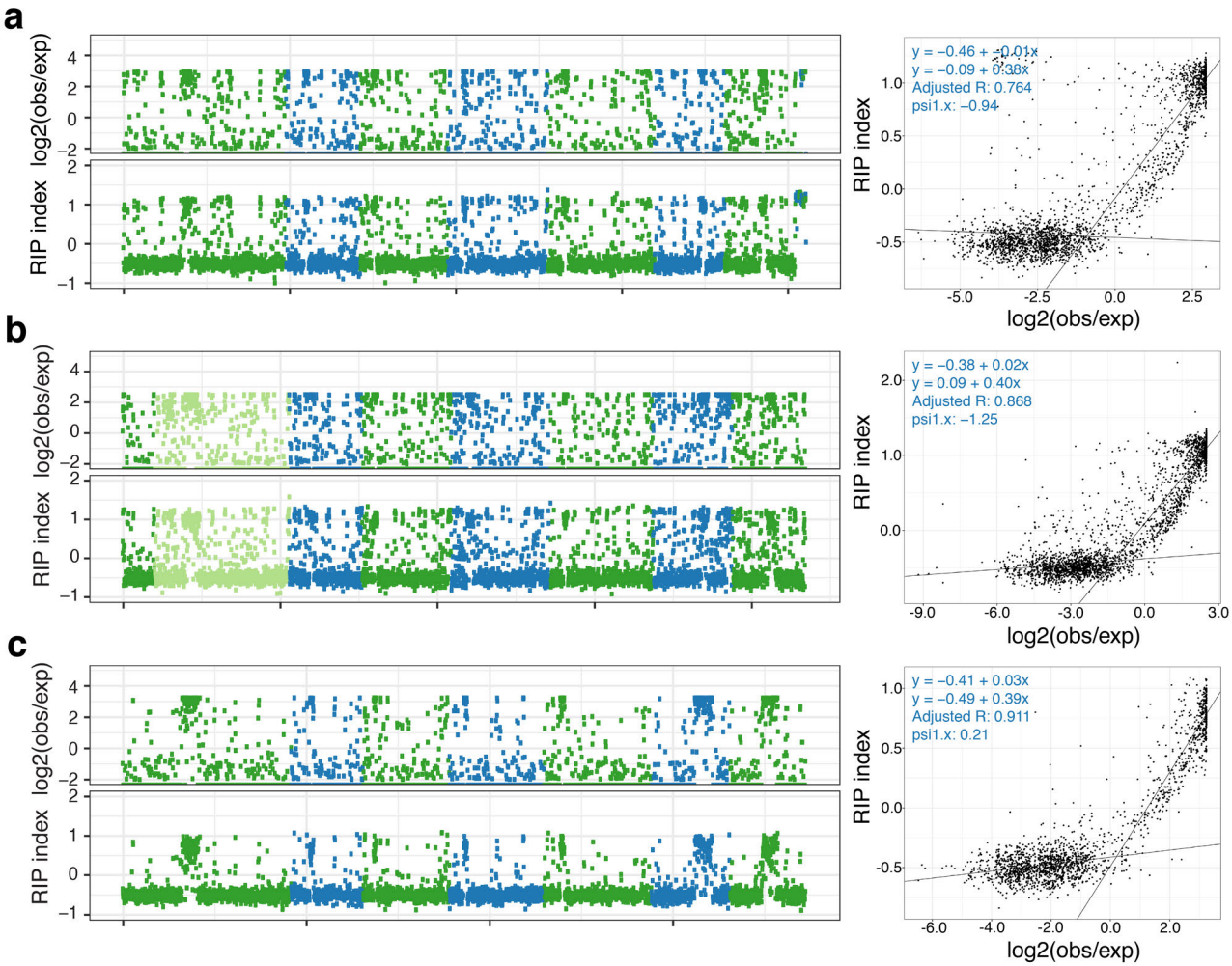


**Figure 2.** Genome-wide TE landscape and RIP signature along *Neurospora* chromosomes. a) *Neurospora crassa* (model organism), b) *N. metzenbergii* (strain with largest genome), c) *N. discreta* (strain with one of the smallest genomes). Top panel for each species indicates the enrichment of transposable element (TE) sequences (log2(observed repeat (bp)/expected repeats (bp)) determined in 10-kb windows. Each dot represents a 10-kb window. Values above 2 are herein described as enriched in TE sequences. Bottom panel for each species indicates the genome-wide composite RIP index, independent of underlying genomic content, determined in 10-kb windows. Each dot represents a 10-kb window. Positive values were herein described as a window contained sequences that experienced RIP mutation. For all plots, the alternating colors between blue and green indicate the alternation between chromosomes, with chromosome numbers following the alignment to *N. crassa*. The lighter shading indicates the presence of multiple contigs for the respective chromosome. Right panel for each species indicates the correlation between a 10-kb window for TEs and the corresponding 10-kb window for composite RIP index. Regression lines were fit using a segmented linear regression model in which the breakpoint ("psi") is also estimated. The top regression line is the estimated fit for log2 scores < psi value (left line) and the bottom regression line is the estimated fit for log2 scores > psi value (right line). The adjusted $R^2$ ("adjusted R") value calculates fit of the regression lines to the data.

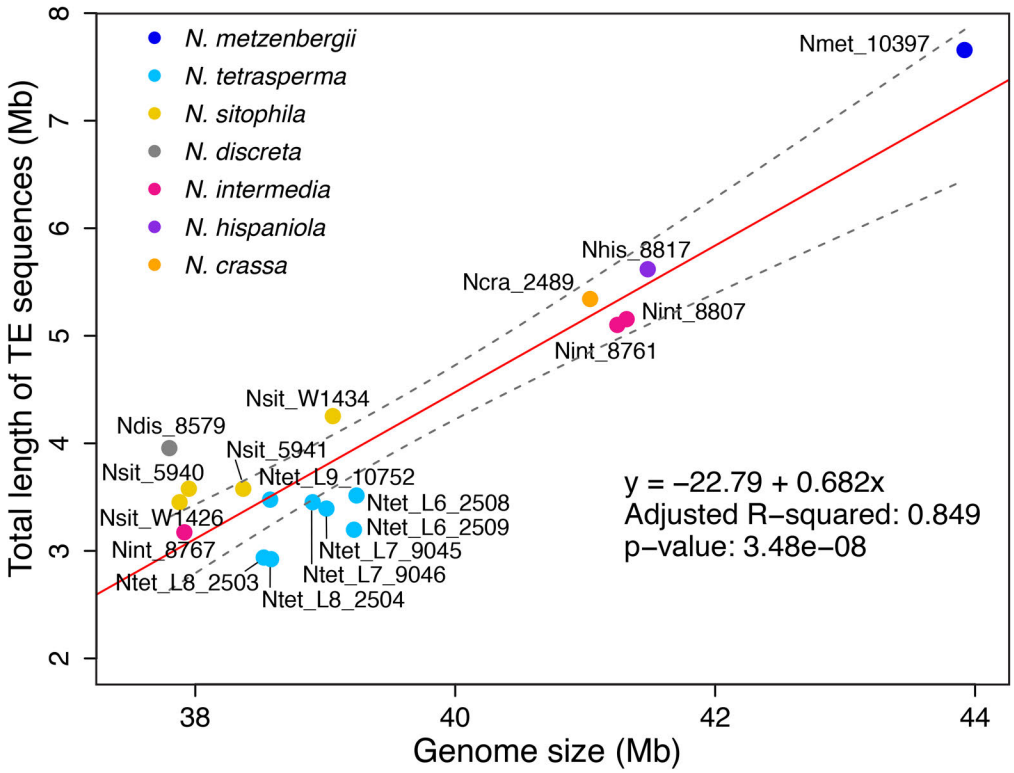


**Figure 3.** *Neurospora* genome size correlation with TE content. Total genomic TE lengths (in base pairs) correlated positively with total *Neurospora* genome assembly lengths. Each *Neurospora* species was differentially color coded (except *N. tetrasperma* for which all lineages/species are shown in light blue).

Supplementary Information

# Transposon- and genome dynamics in the fungal genus *Neurospora*: insights from nearly gapless genome assemblies

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**Supplementary Figure Legends**

**Figure S1.** Distribution of transposable element (TE) sequences in *Neurospora* genomes. a) Composition of TEs in each genome was determined by calculating the number of TE nucleotides relative to the genome length (reflected as percent) for each of the TE families: Class I RNA retroelements which were divided into LTR, SINE, LINE; Class II DNA transposons; and TEs that were unclassified ("Unknown"). b) Total length of TEs in each genome (bp) was plotted for each of the TE families.

**Figure S2.** TE landscape distribution in *Neurospora* genomes and genome-wide RIP pattern in *Neurospora* genomes. Top panels. Enrichment of transposable element (TE) sequences (log2(observed repeat (bp)/expected repeats (bp)) were plotted for each *Neurospora* genome in 10 kb windows. Each dot represented a 10-kb window. Values above 2 were herein described as a window enriched in TE sequences. Bottom panels. Genome-wide composite RIP index, irrespective of underlying genomic content, were determined in 10 kb windows, using a custom script. Each dot represented a 10-kb window. Positive values were herein described as a window contained sequences that experienced RIP. For these plots, the alternating colors between blue and green indicate the alternation between chromosomes, following the alignment to *N. crassa*. The lighter shading indicated the presence of multiple contigs for the respective chromosome.

**Figure S3.** Correlations between total length of TE families and other repeat sequences, and *Neurospora* genome size. Total lengths of a) DNA, b) LTR, c) LINE, d) SINE, e) Unknown elements, f) low complexity, and g) simple repeat sequences were plotted again the total length of *Neurospora* genomes. Each species was color coded, and for different lineages of

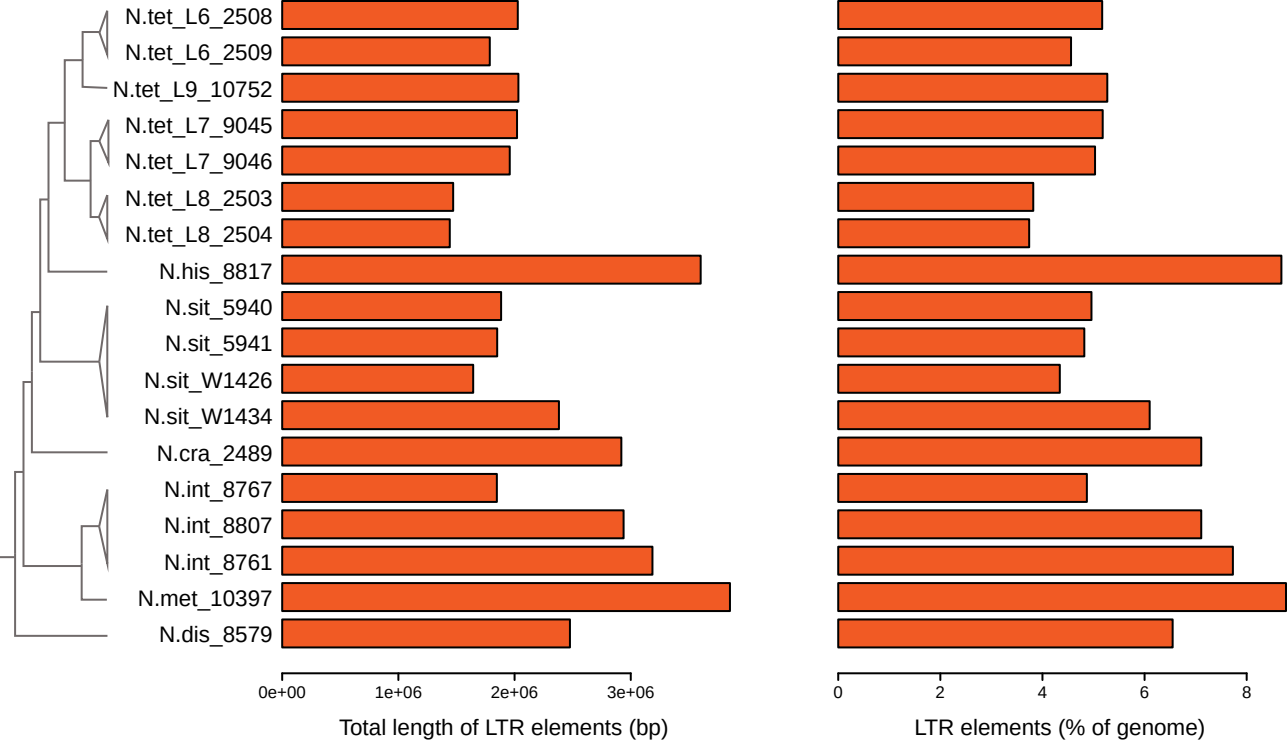
*N. tetrasperma*, they were grouped together. Each bubble was associated with a number, relating strain information: **1**, *N. tetrasperma* L6 FGSC 2508; **2**, *N. tetrasperma* L6 FGSC 2509; **3**, *N. tetrasperma* L9 FGSC 10752; **4**, *N. tetrasperma* L7 FGSC 9045; **5**, *N. tetrasperma* L7 FGSC 9046; **6**, *N. tetrasperma* L8 FGSC 2503; **7**, *N. tetrasperma* L8 FGSC 2504; **8**, *N. sitophila* FGSC 5940; **9**, *N. sitophila* FGSC 5941; **10**, *N. sitophila* W1426; **11**, *N. sitophila* W1434; **12**, N. *hispaniola* FGSC 8817; **13**, *N. crassa* FGSC 2489; **14**, *N. intermedia* FGSC 8767; **15**, *N. intermedia* FGSC 8807; **16**, *N. intermedia* FGSC 8761; **17**, *N. metzenbergii* FGSC 10397; **18**, *N. discreta* FGSC 8579.

**Figure S4.** Background level of RIP signal was different from RIP signal detected at TE sequences. RIP scores were calculated for a *Neurospora* genome compared to mock sequences, i.e. mock sequences representing a background. For each panel, three distributions are plotted: 1) the observed RIP distribution for a genome calculated on the repeats determined by RepeatMasker ("obs", purple distribution). Then, RIP scores were recalculated by randomly placing the observed repeat intervals onto mock genomes that were generated in two different ways: 2) a random genome obtained by shuffling the bases ("shuffle", blue distribution) and 3) generated by sampling nucleotides from the observed nucleotide frequency distribution ("frequency", yellow distribution). Cases 2 and 3 will disrupt all repeat regions such that no RIP signal should be observed.

**Figure S5.** Linear correlation between enriched TE windows and RIP-positive windows in *Neurospora* genomes. For each of the 18 *Neurospora* genomes, enrichment of transposable element (TE) sequences (log2(observed repeat (bp)/expected repeats (bp)) were plotted for each *Neurospora* genome in 10 kb windows. Positive values indicated that the window was enriched in TEs. Genome-wide composite RIP index, irrespective of underlying genomic

content, were determined in 10 kb windows, using a custom script. Positive values were herein described as a window contained sequences that experienced RIP. The regression lines were separately calculated for log2 scores <0 (top regression, left line) and log2 scores >0 (bottom regression, right line), with the adjusted R value calculated for the bottom regression, right line when the log2 scores >0.

Figure S1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N.tet_L7_9046
N.tet_L8_2503
N.tet_L8_2504
N.his_8817
N.sit_5940
N.sit_5941
N.sit_W1426
N.sit_W1434
N.cra_2489
N.int_8767
N.int_8807
N.int_8761
N.met_10397
N.dis_8579
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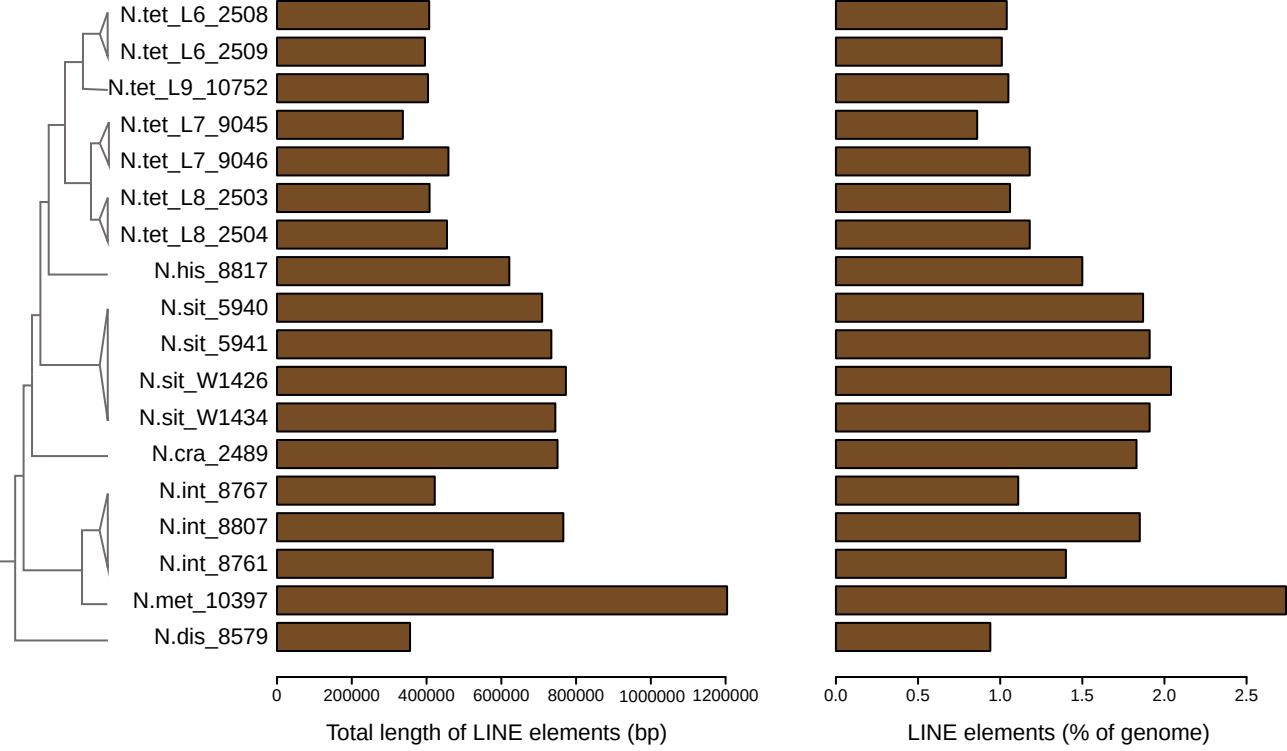
2e+06
3e+06
Total length of LTR elements (bp)
0
2
4
6
8
LTR elements (% of genome)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N.sit_W1426
N.sit_W1434
N.cra_2489
N.int_8767
N.int_8807
N.int_8761
N.met_10397
N.dis_8579
0
200000
400000
600000
800000
1000000
1200000
Total length of LINE elements (bp)
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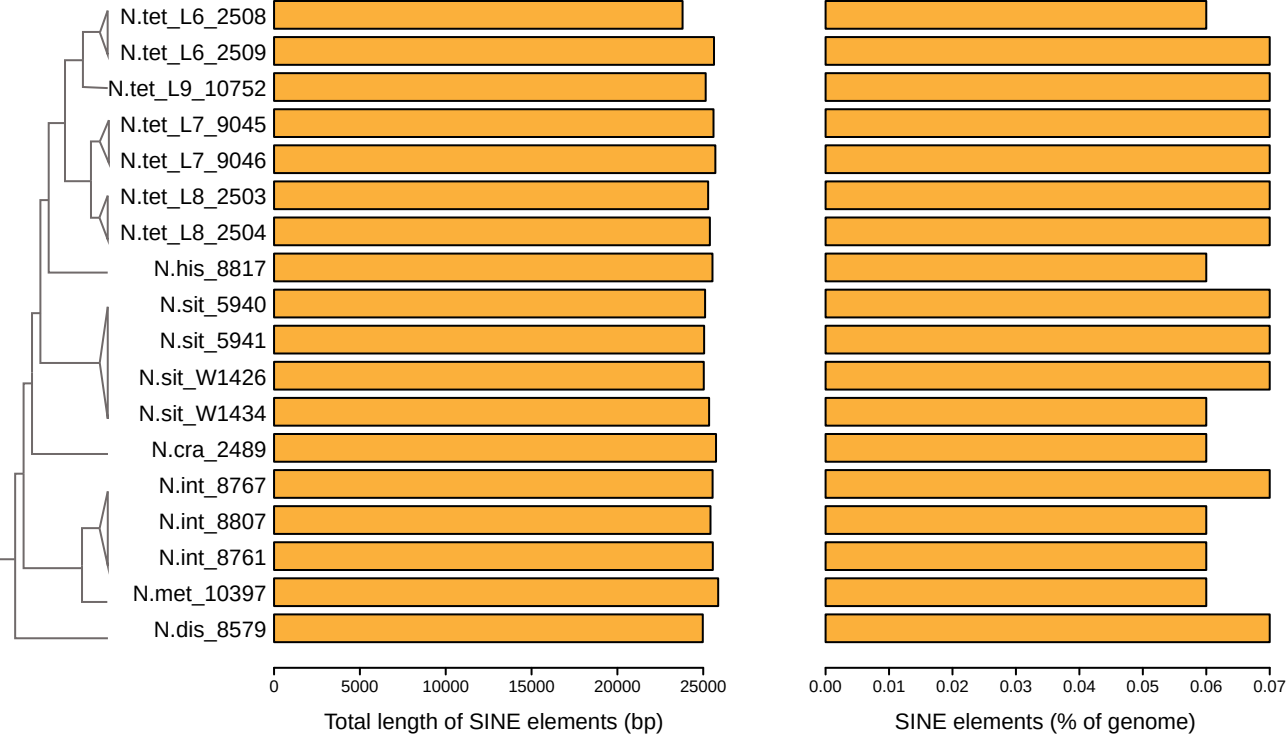
1.0
1.5
2.0
2.5
LINE elements (% of genome)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N.his_8817
N.sit_5940
N.sit_5941
N.sit_W1426
N.sit_W1434
N.cra_2489
N.int_8767
N.int_8807
N.int_8761
N.met_10397
N.dis_8579
0
5000
10000
15000
20000
25000
Total length of SINE elements (bp)
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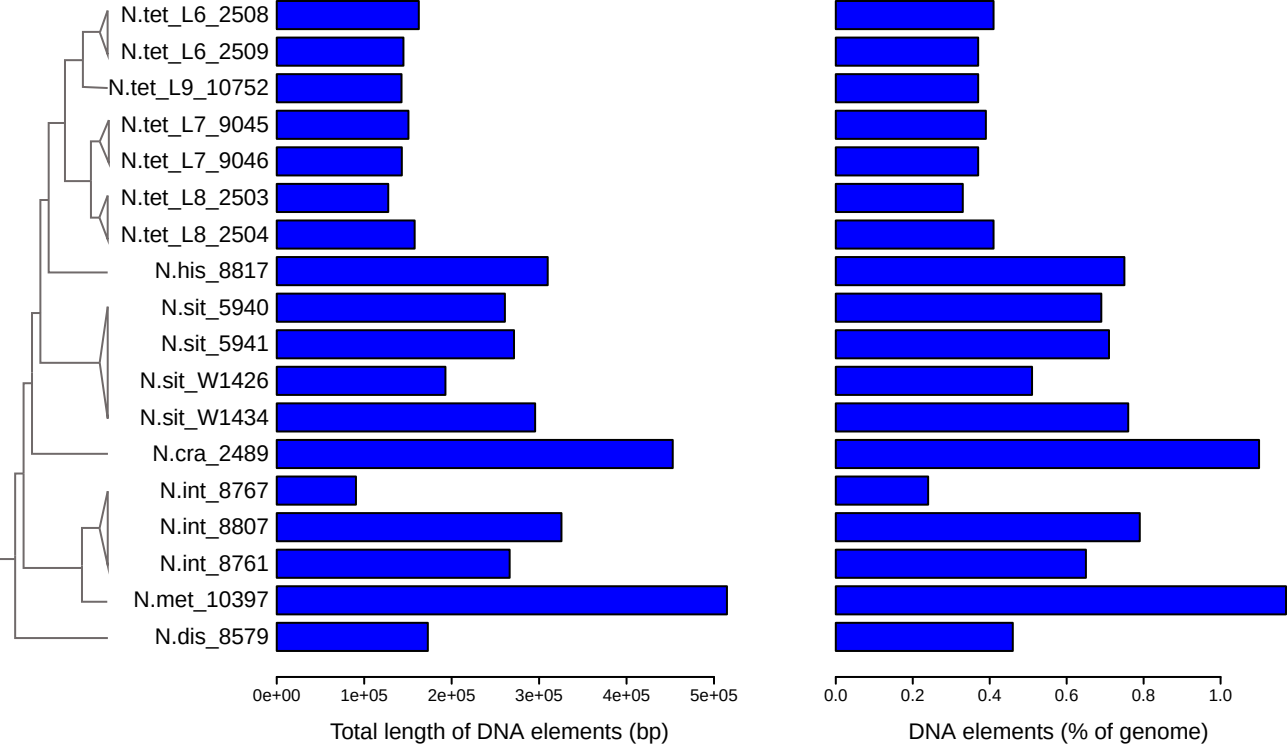
0.01
0.02
0.03
0.04
0.05
0.06
0.07
SINE elements (% of genome)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N.int_8807
N.int_8761
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N.dis_8579
0e+00
1e+05
2e+05
3e+05
4e+05
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Total length of DNA elements (bp)
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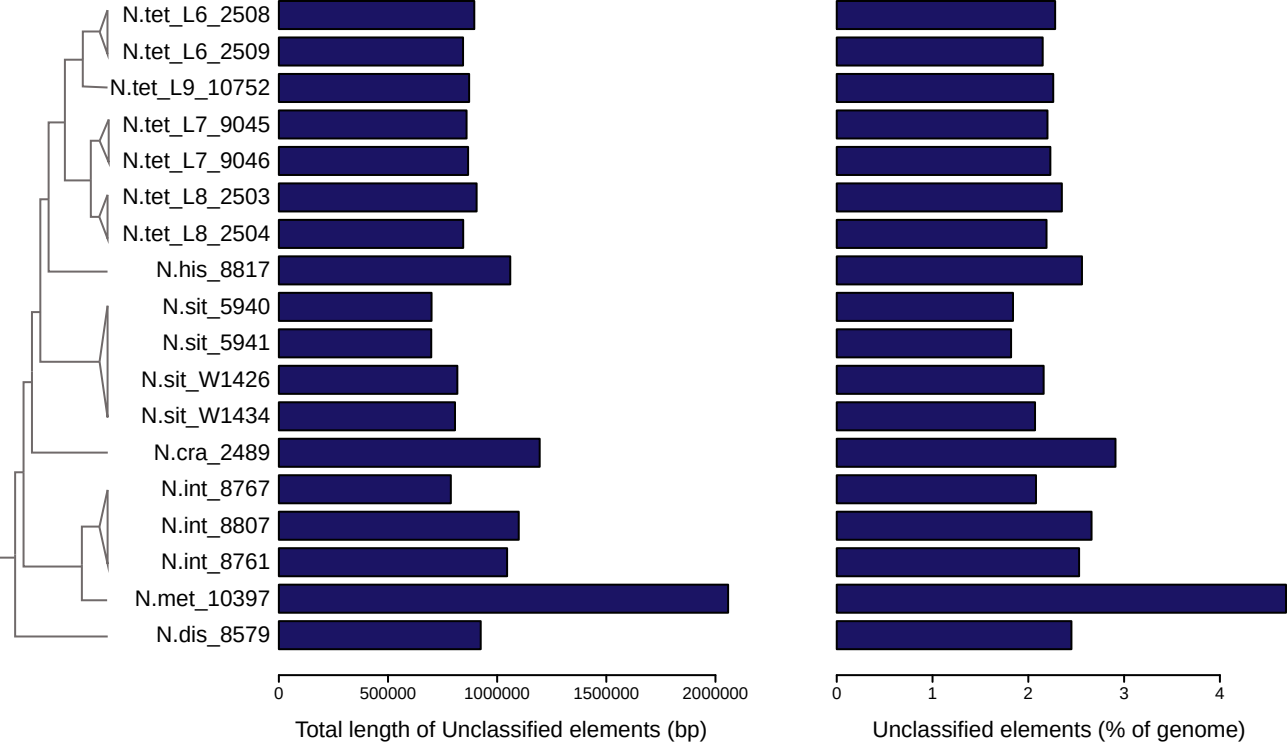
0.4
0.6
0.8
1.0
DNA elements (% of genome)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N.his_8817
N.sit_5940
N.sit_5941
N.sit_W1426
N.sit_W1434
N.cra_2489
N.int_8767
N.int_8807
N.int_8761
N.met_10397
N.dis_8579
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1000000
1500000
2000000
Total length of Unclassified elements (bp)
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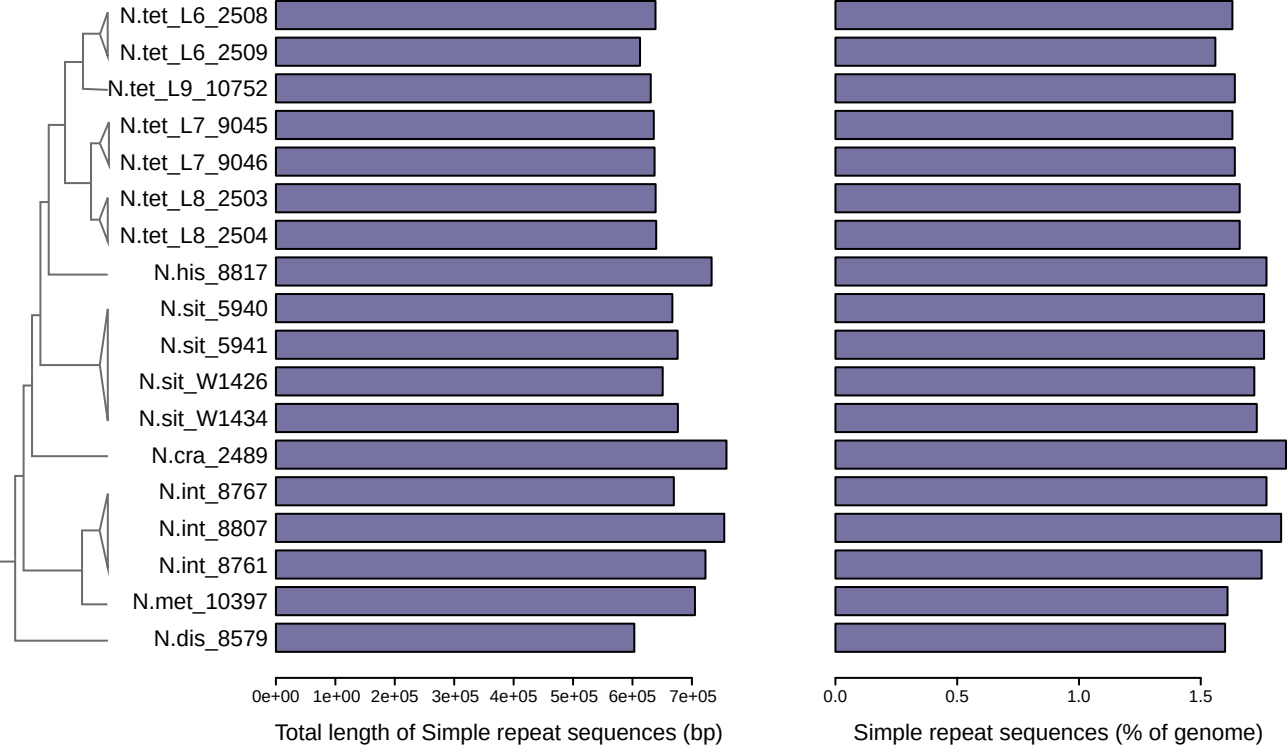
2
3
4
Unclassified elements (% of genome)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N.cra_2489
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N.int_8807
N.int_8761
N.met_10397
N.dis_8579
0e+00
1e+00
2e+05
3e+05
4e+05
5e+05
6e+05
7e+05
Total length of Simple repeat sequences (bp)
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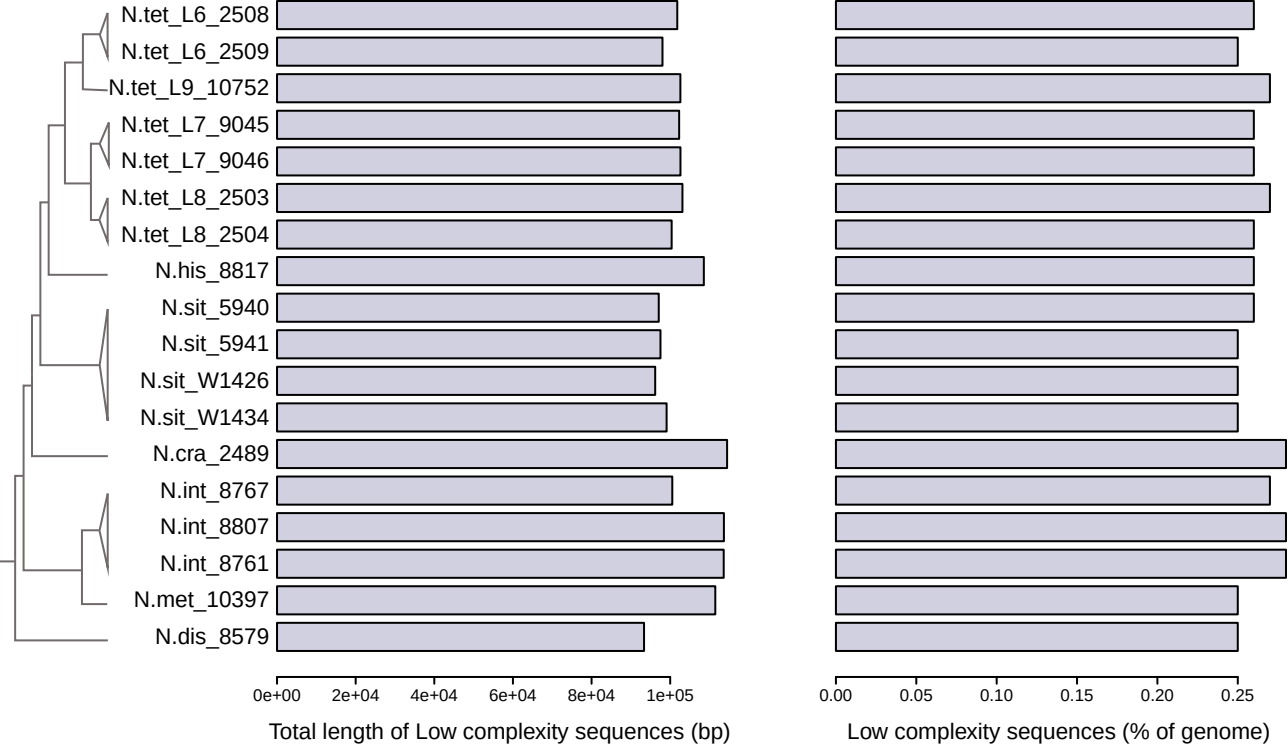
0.5
1.0
1.5
Simple repeat sequences (% of genome)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N.his_8817
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N.sit_5941
N.sit_W1426
N.sit_W1434
N.cra_2489
N.int_8767
N.int_8807
N.int_8761
N.met_10397
N.dis_8579
0e+00
2e+04
4e+04
6e+04
8e+04
1e+05
Total length of Low complexity sequences (bp)
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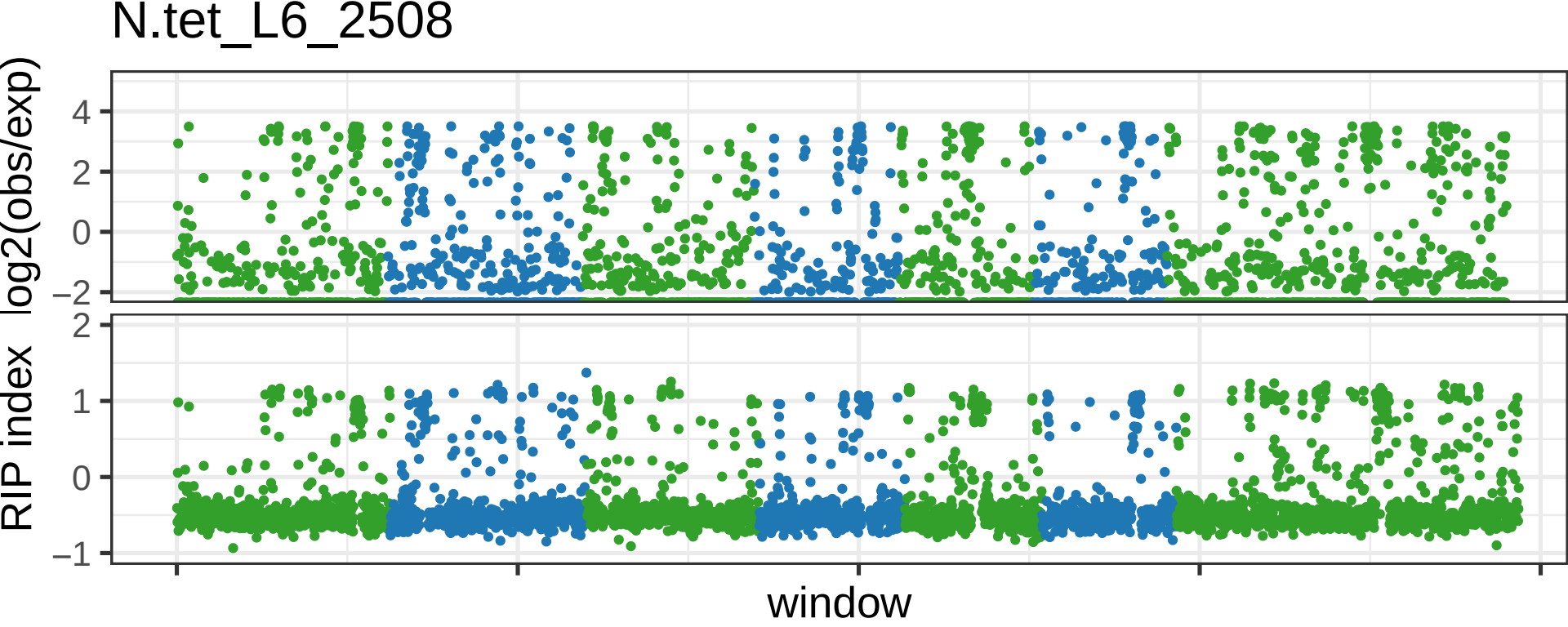
0.15
0.20
0.25
Low complexity sequences (% of genome)

Figure S2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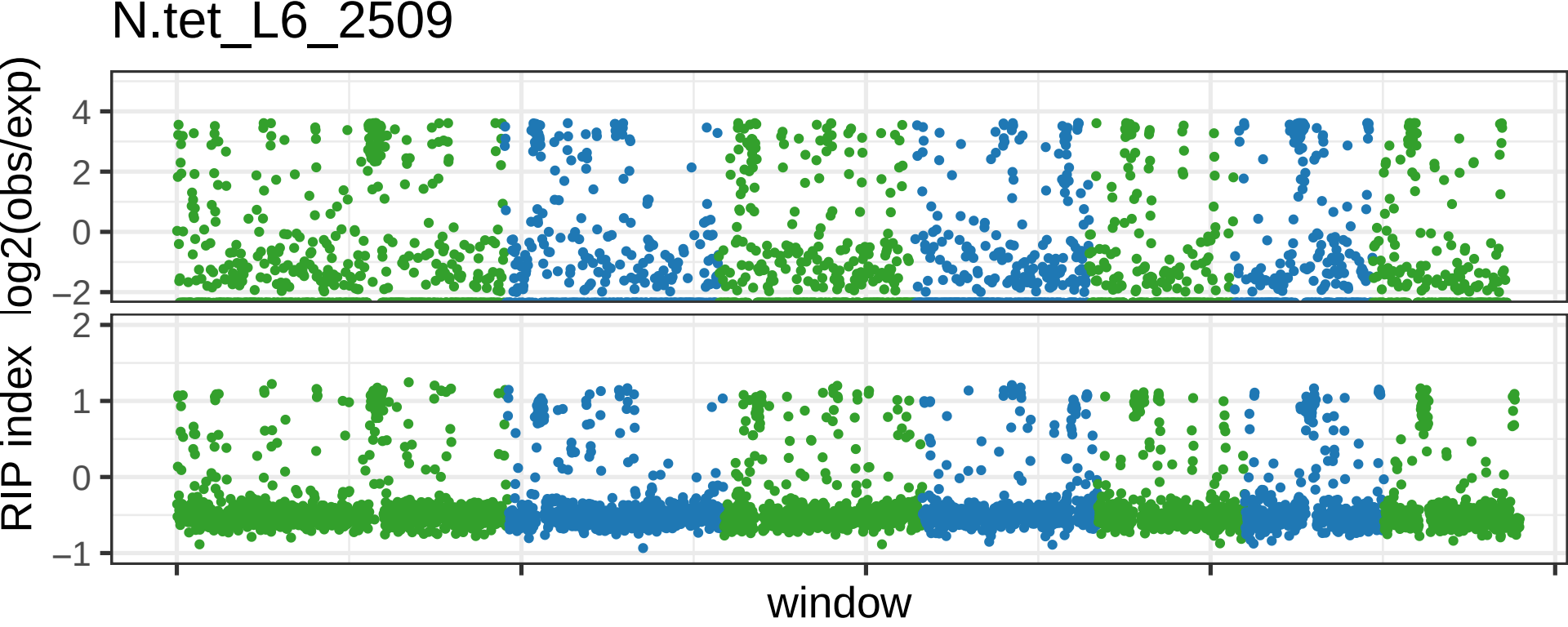
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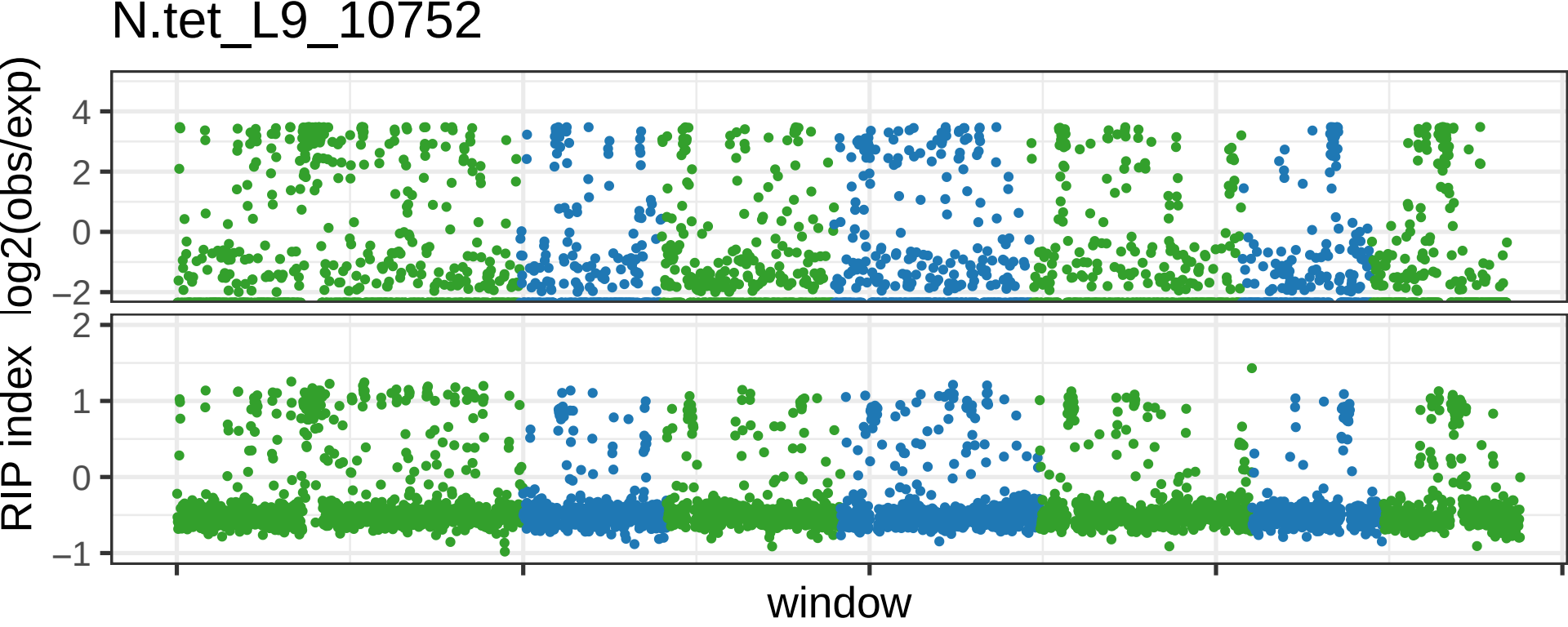
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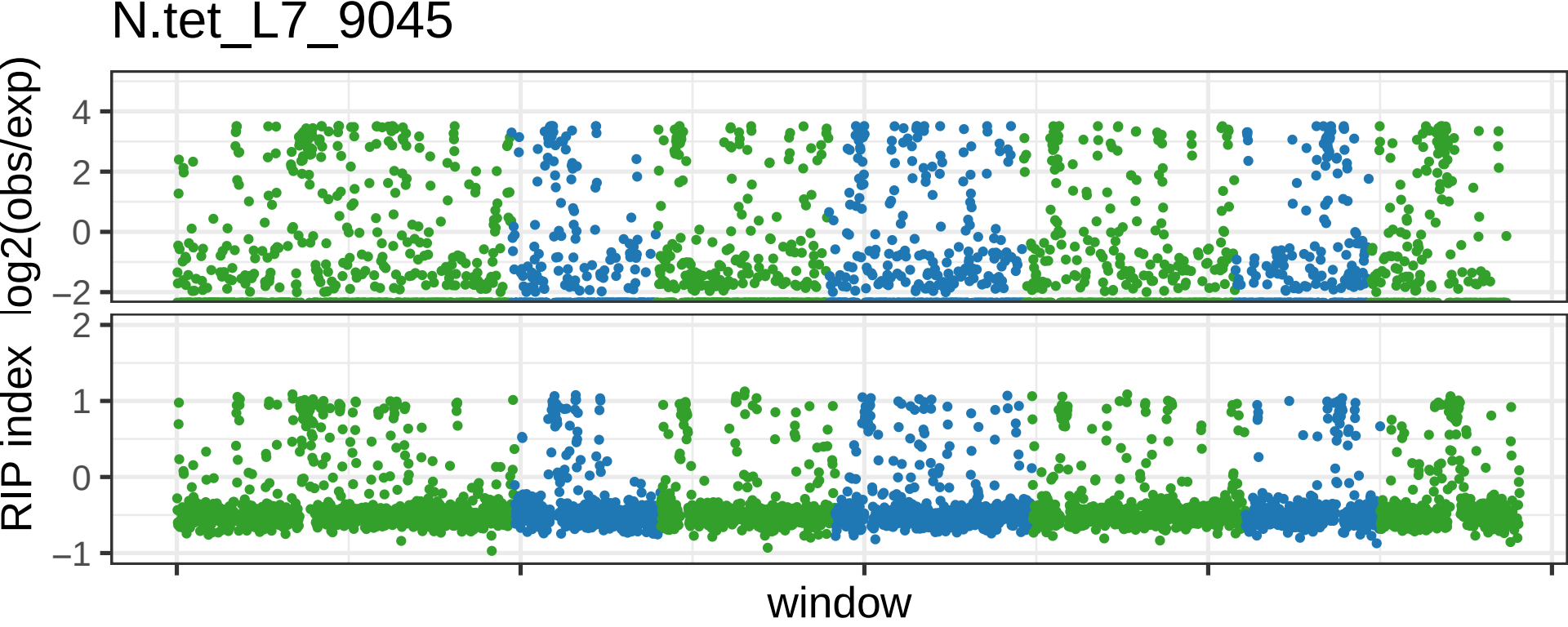
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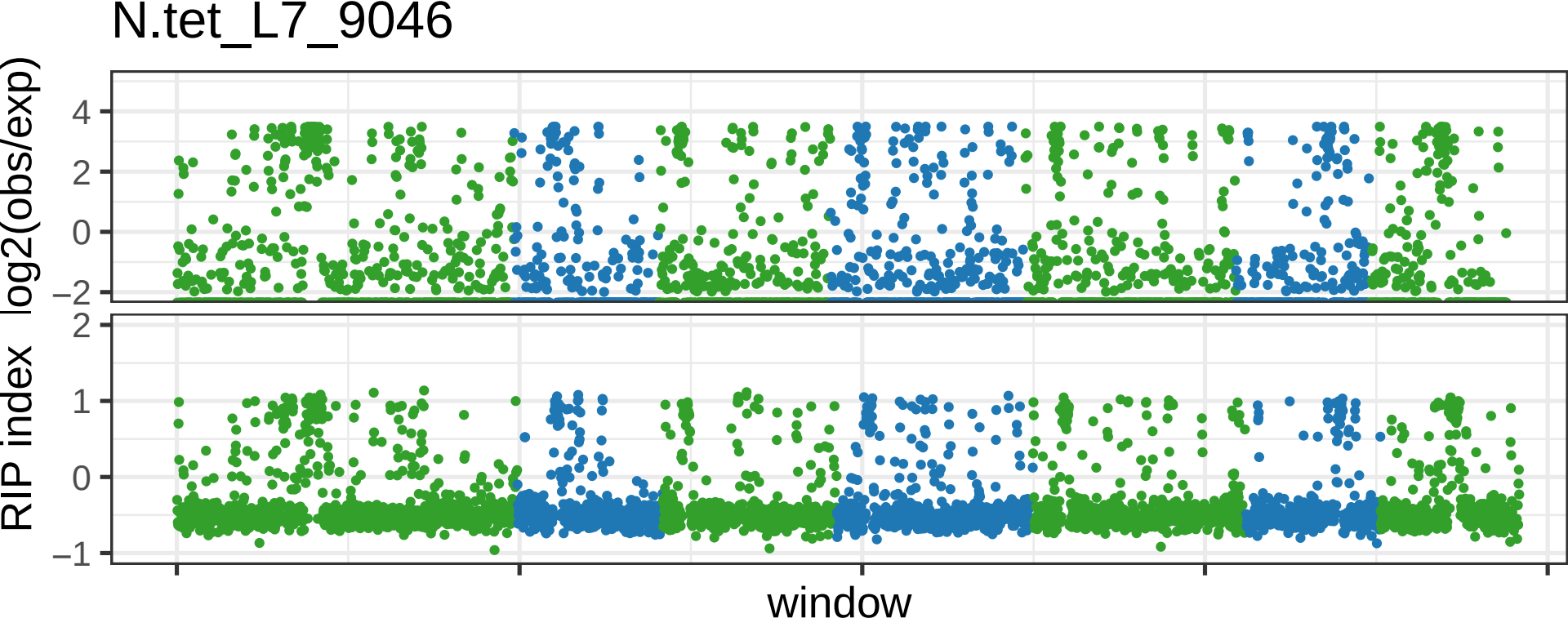
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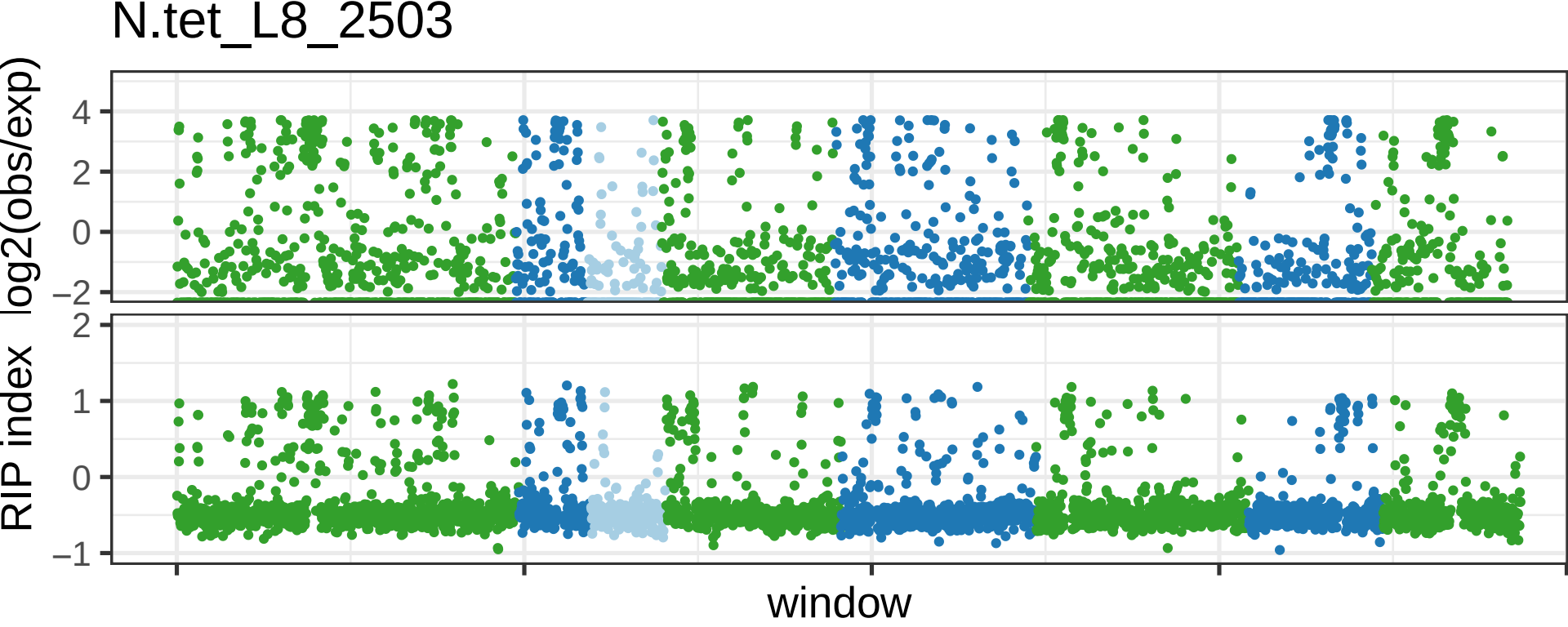
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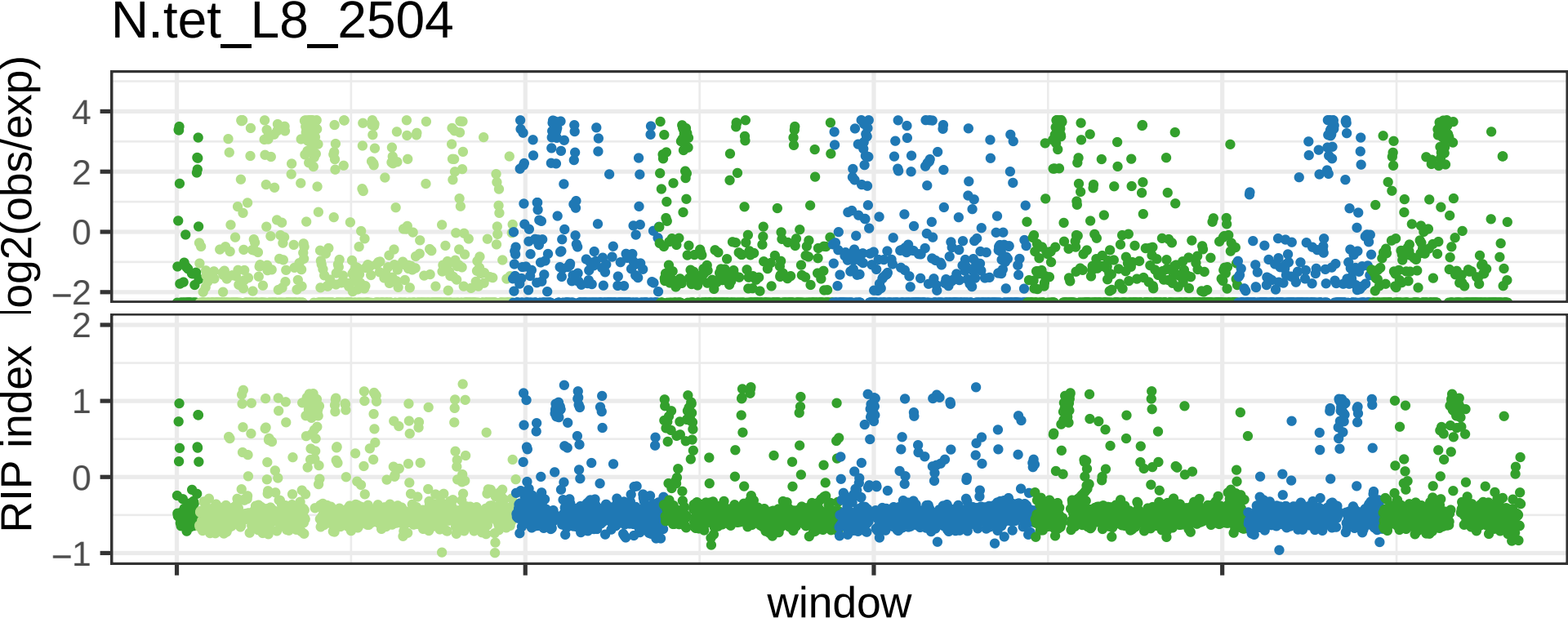
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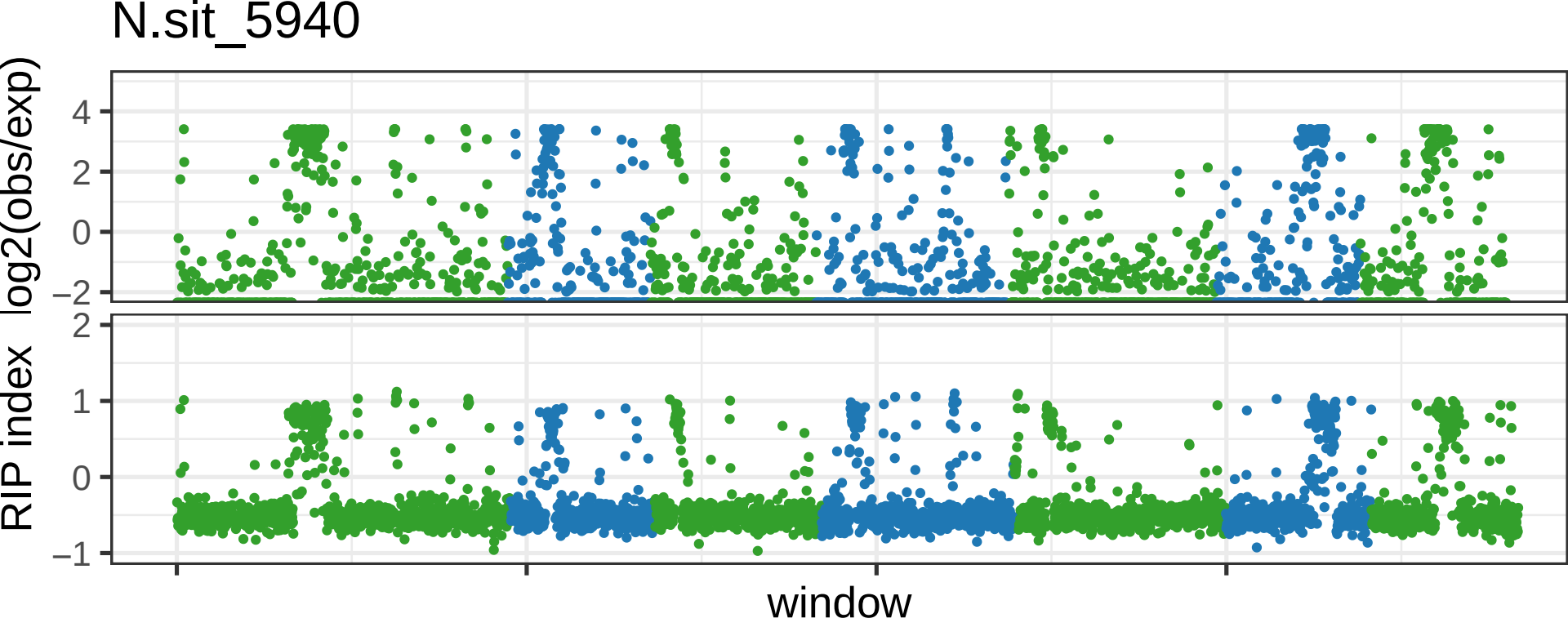
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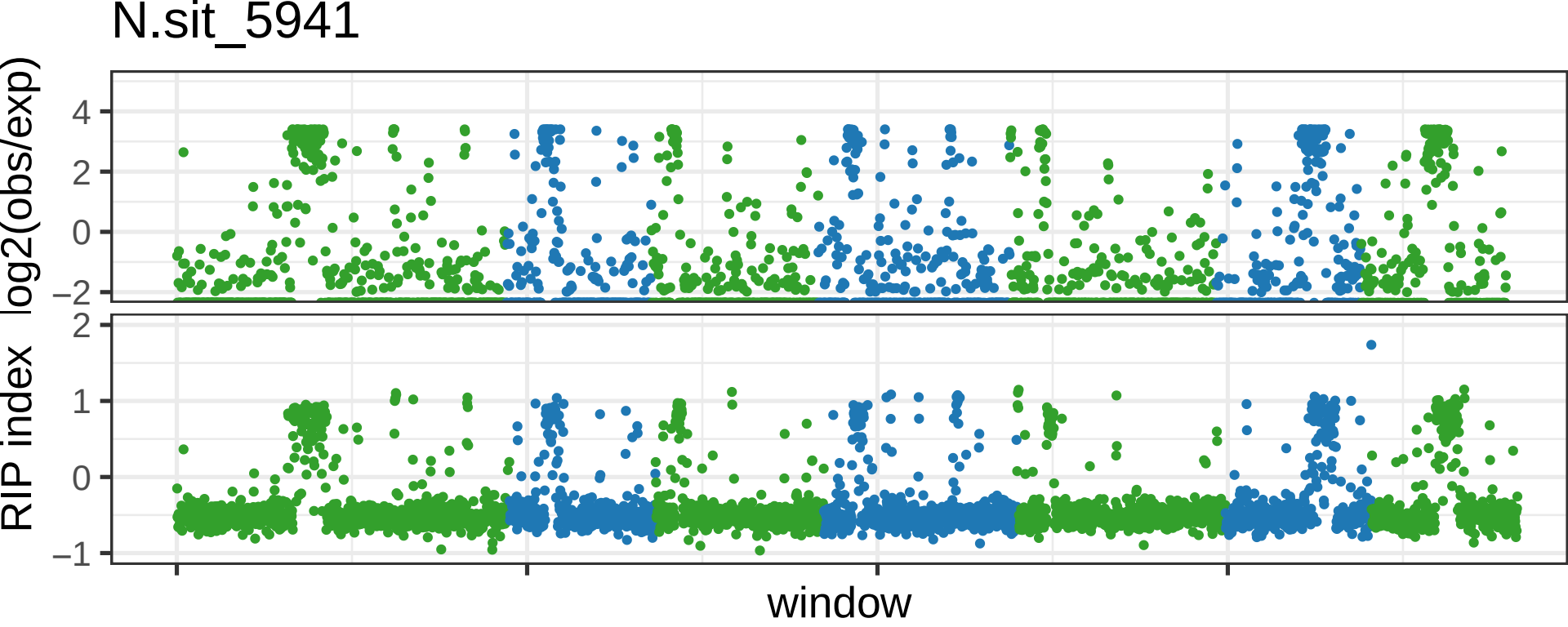
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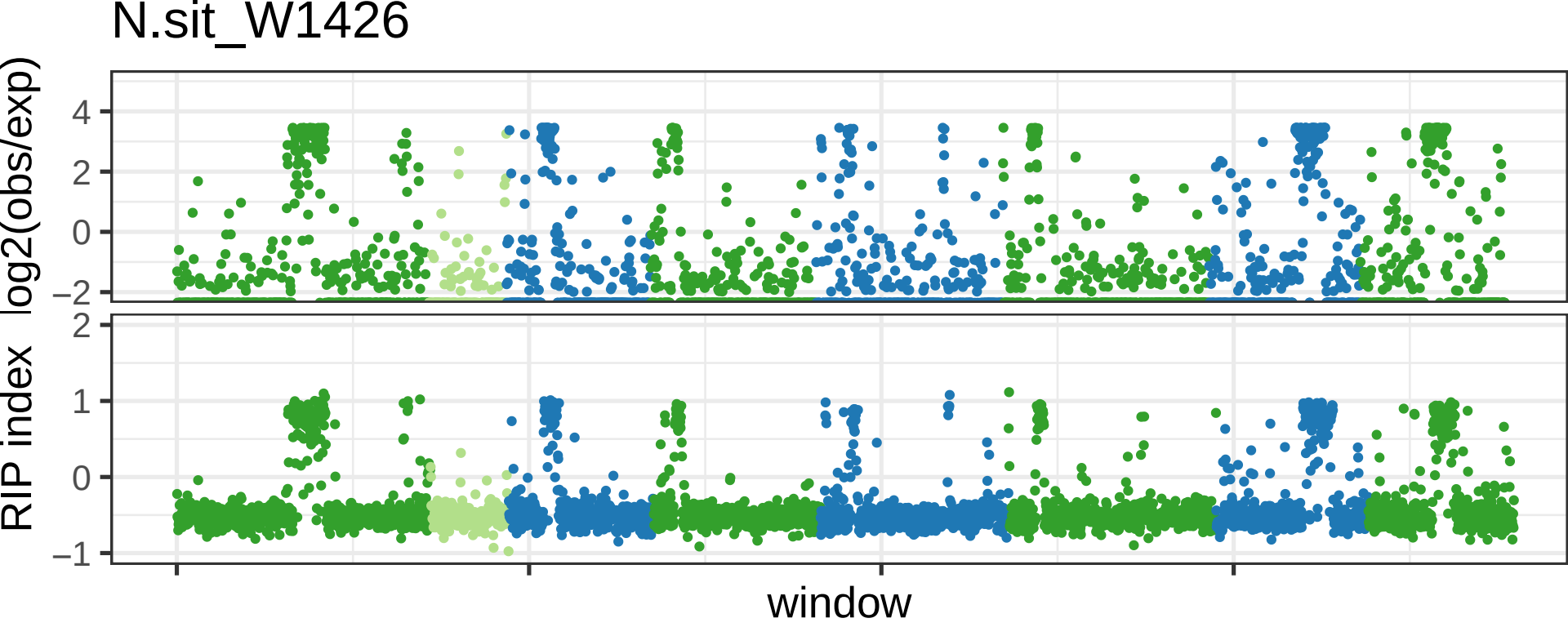
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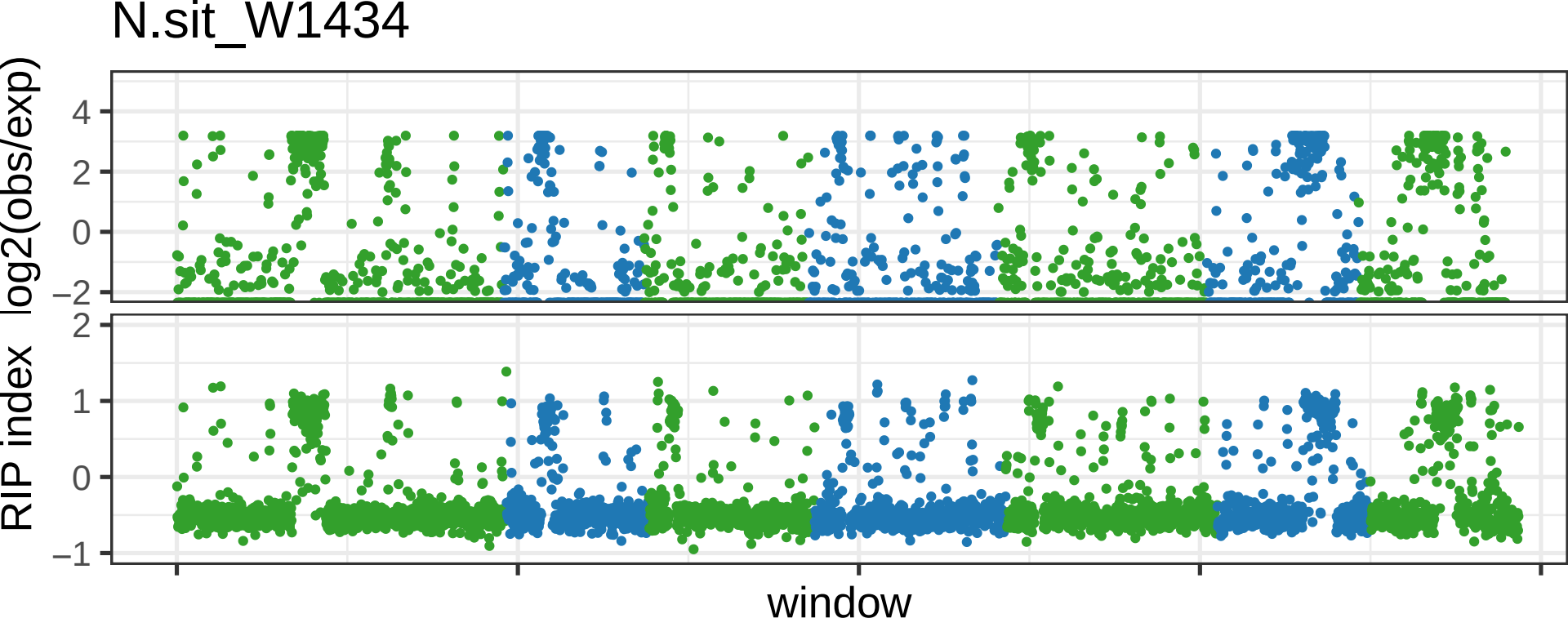
0
−1
window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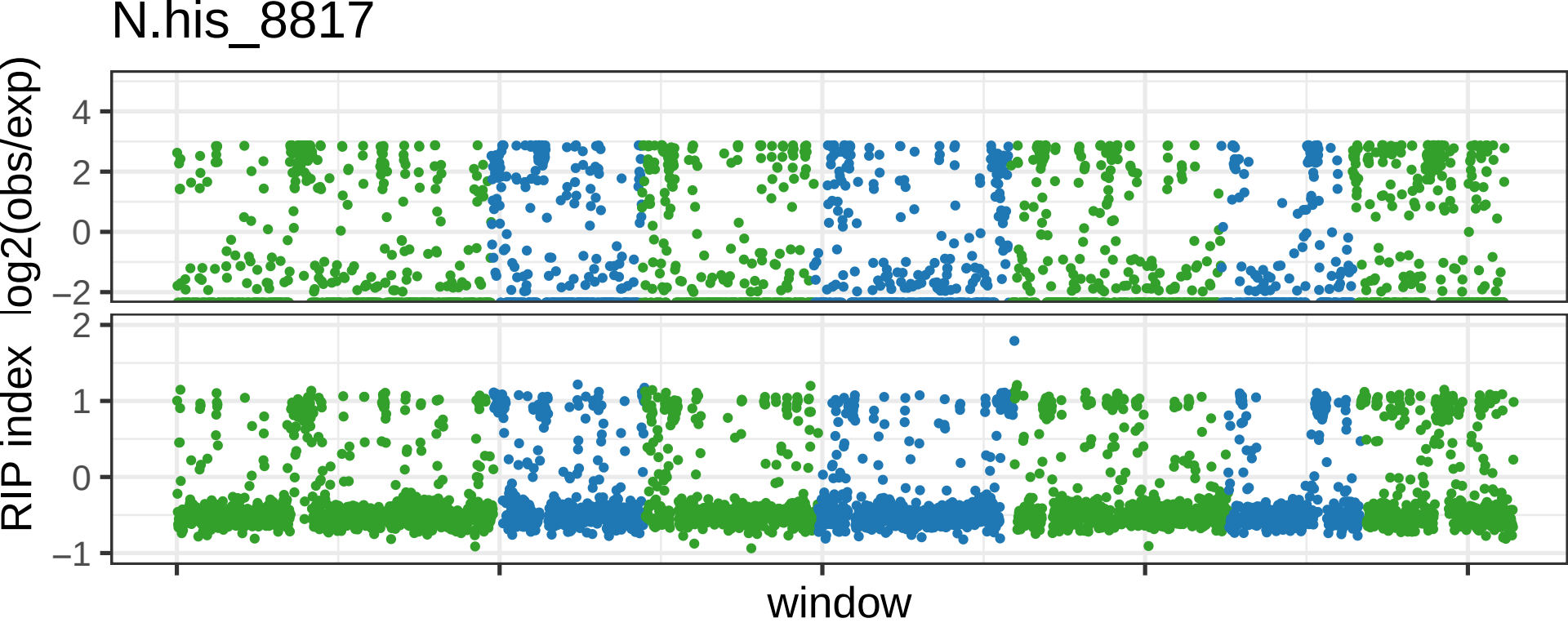
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RIP index
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−2
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1
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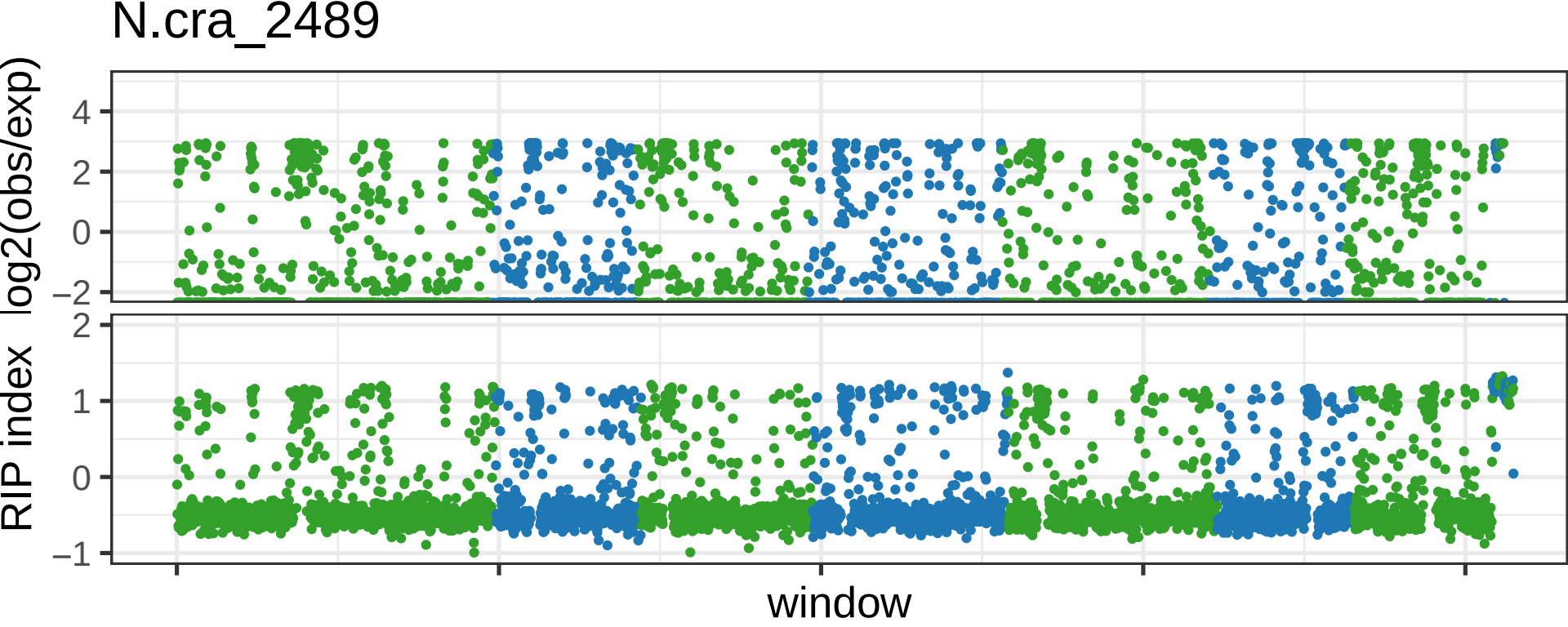
−1
window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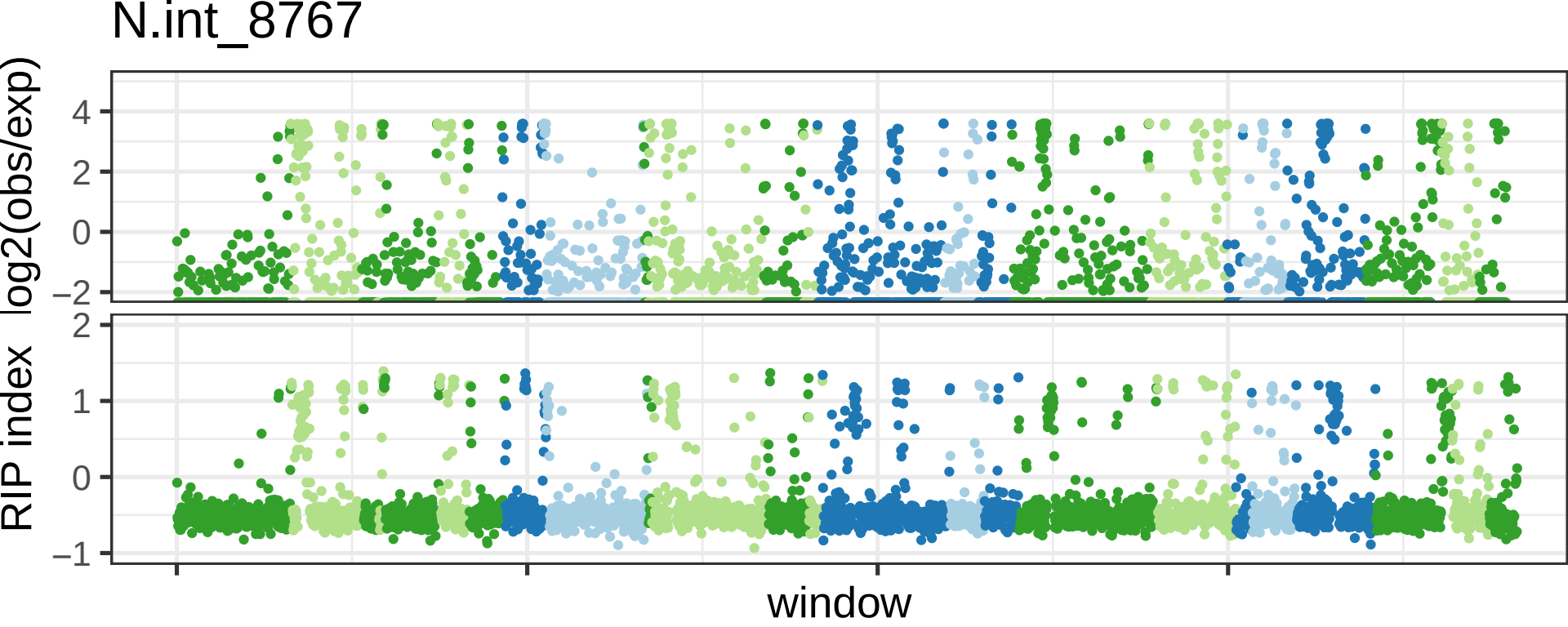
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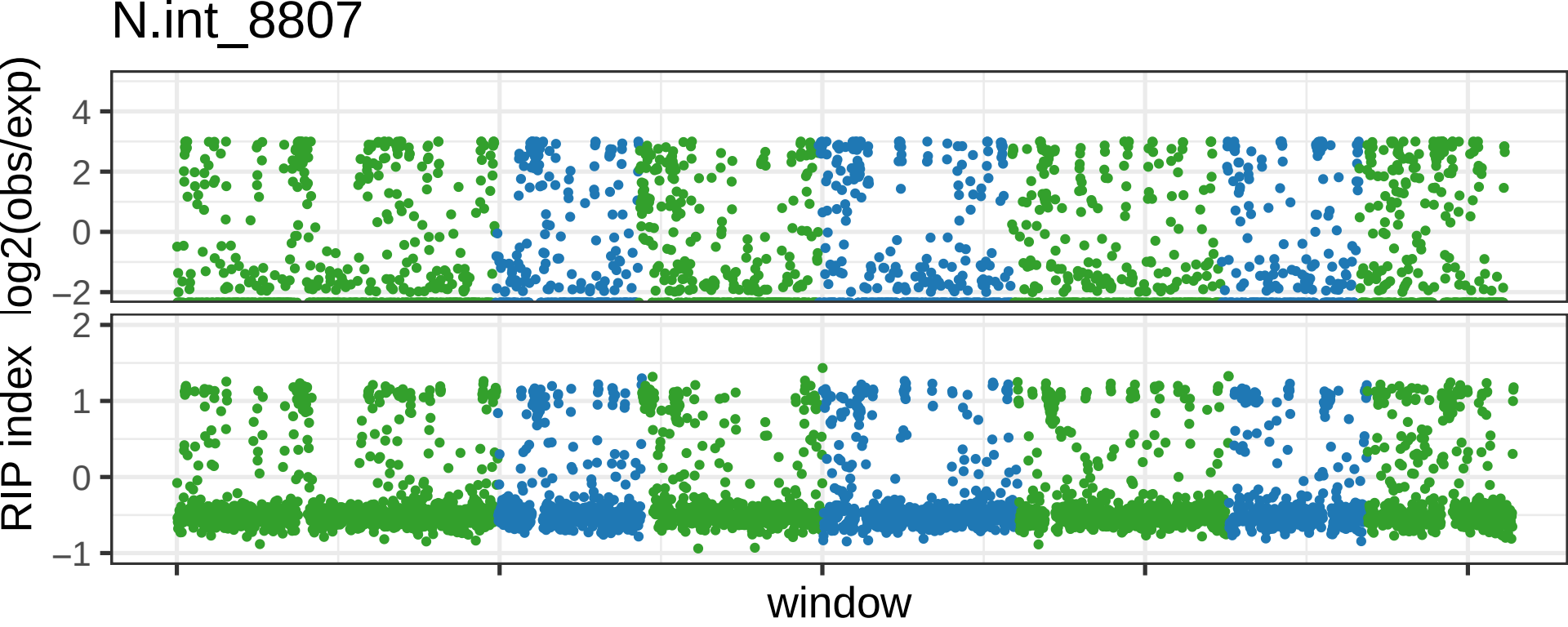
window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RIP index
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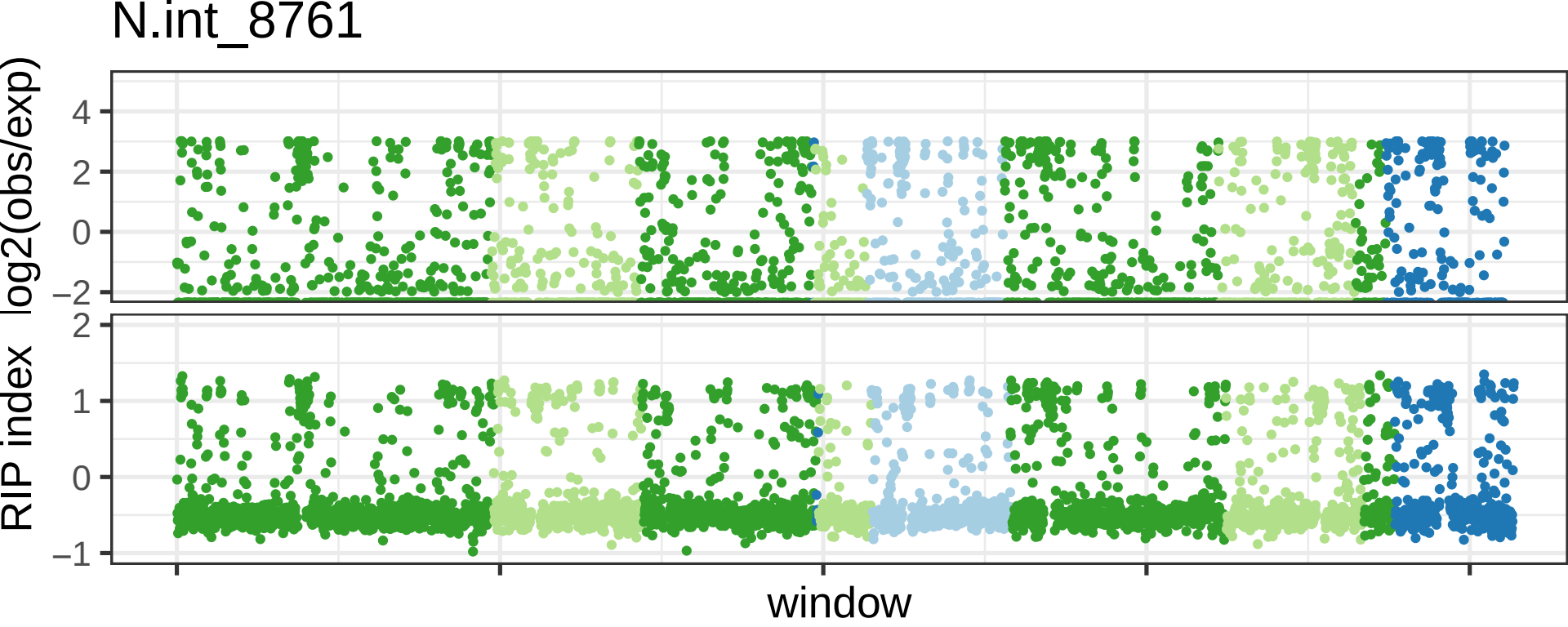
−1
window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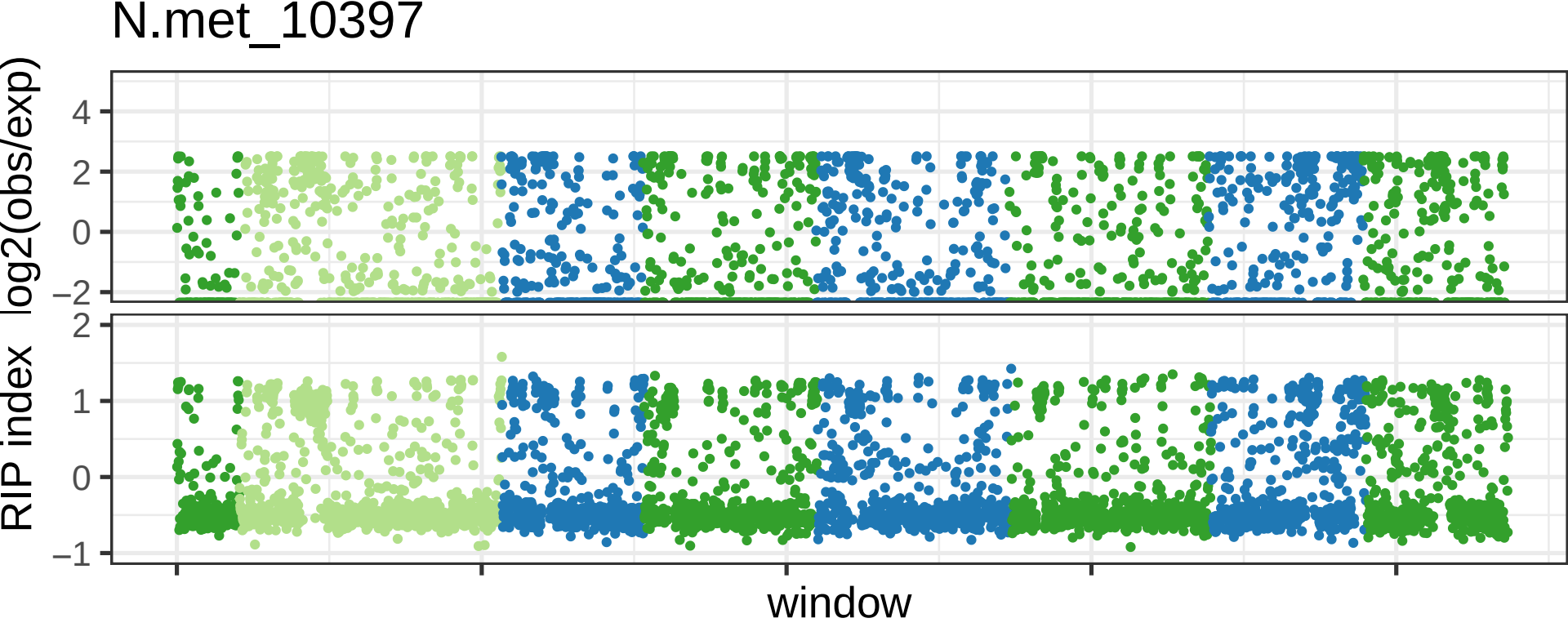
2
0
−2
RIP index
2
1
0
−1
window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RIP index
2
1
0
−1
window

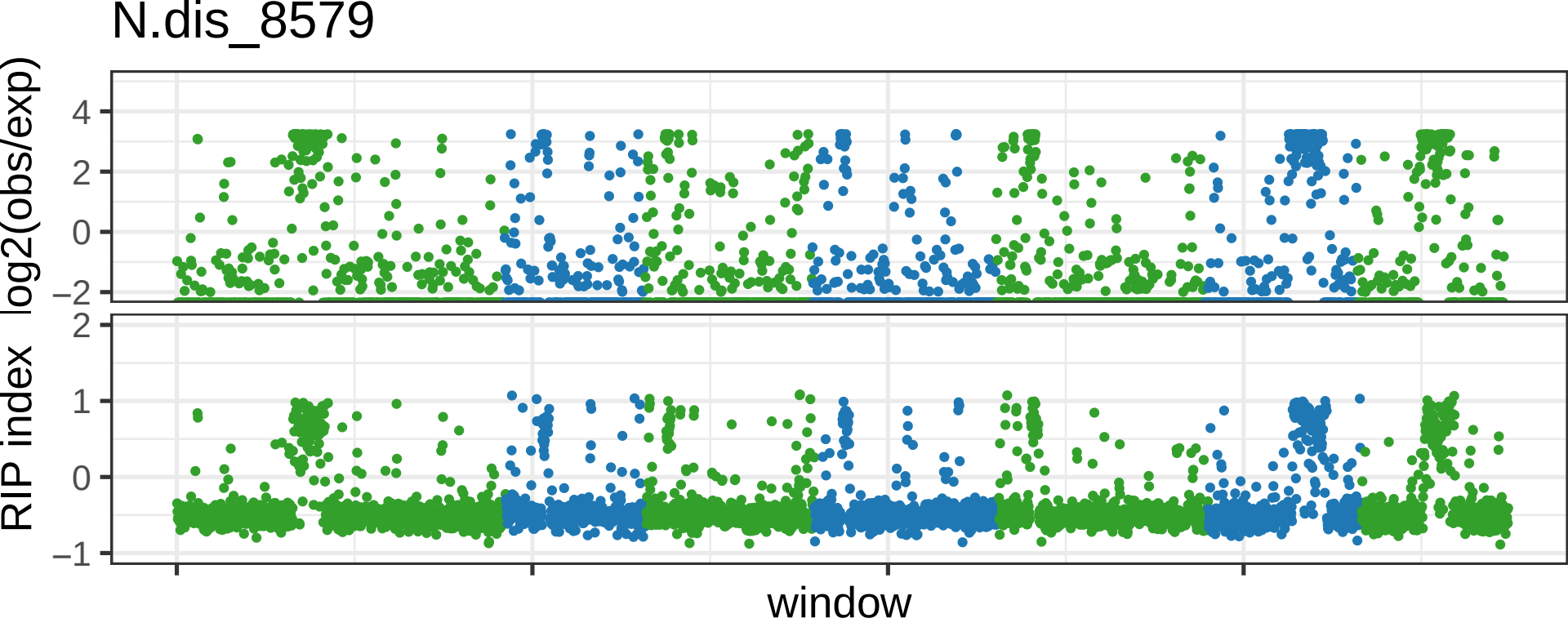
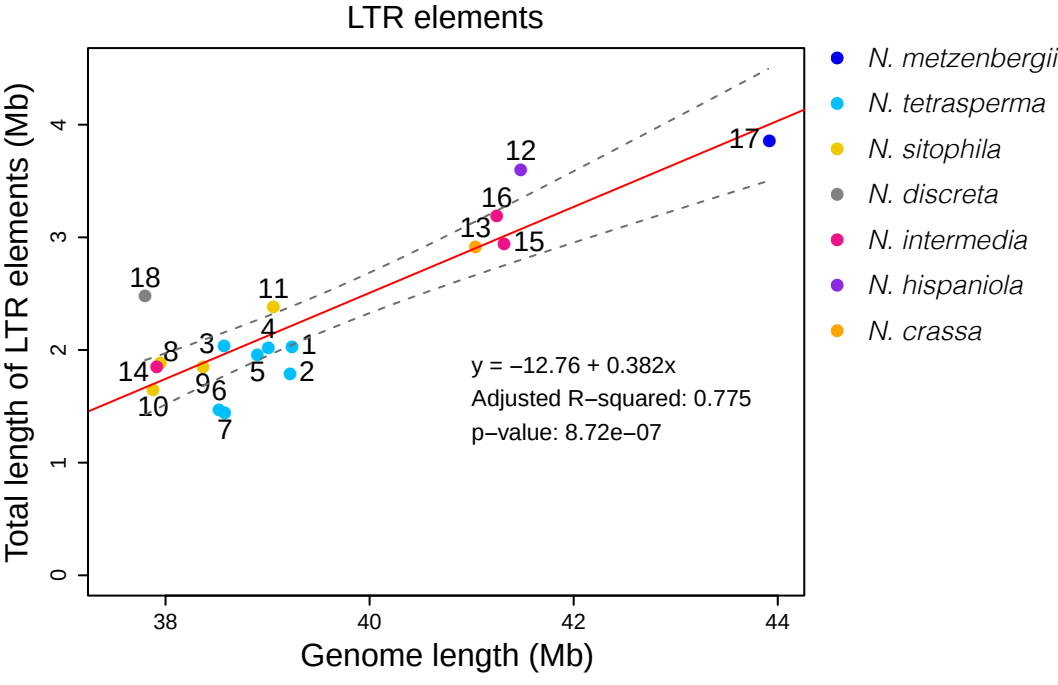
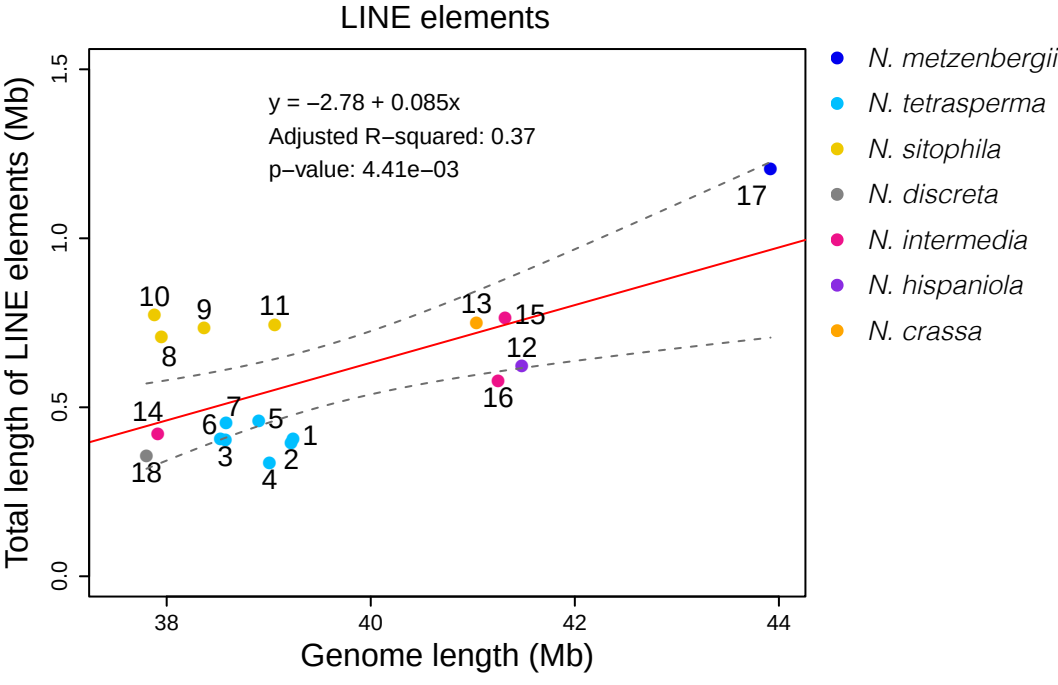
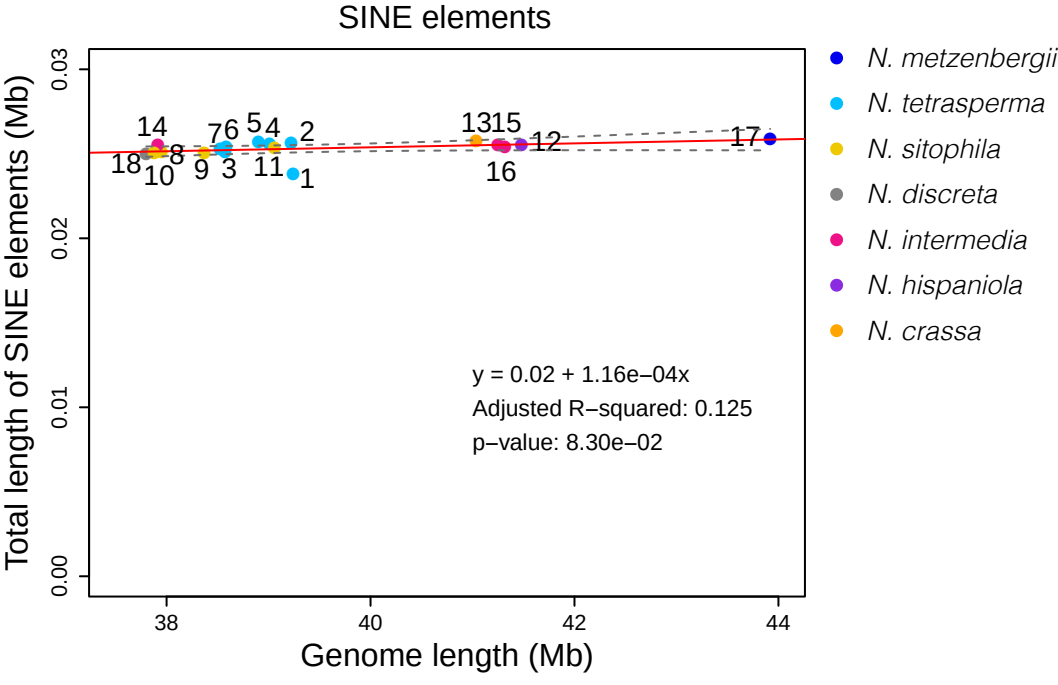
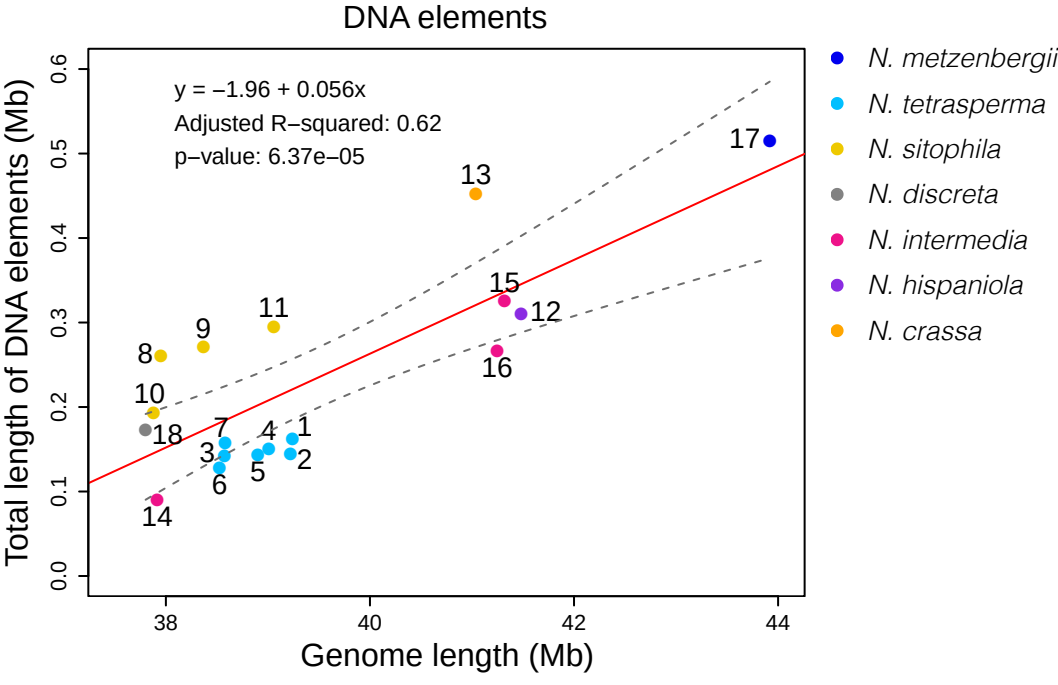

N.dis_8579
log2(obs/exp)
4
2
0
−2
RIP index
2
1
0
−1
window

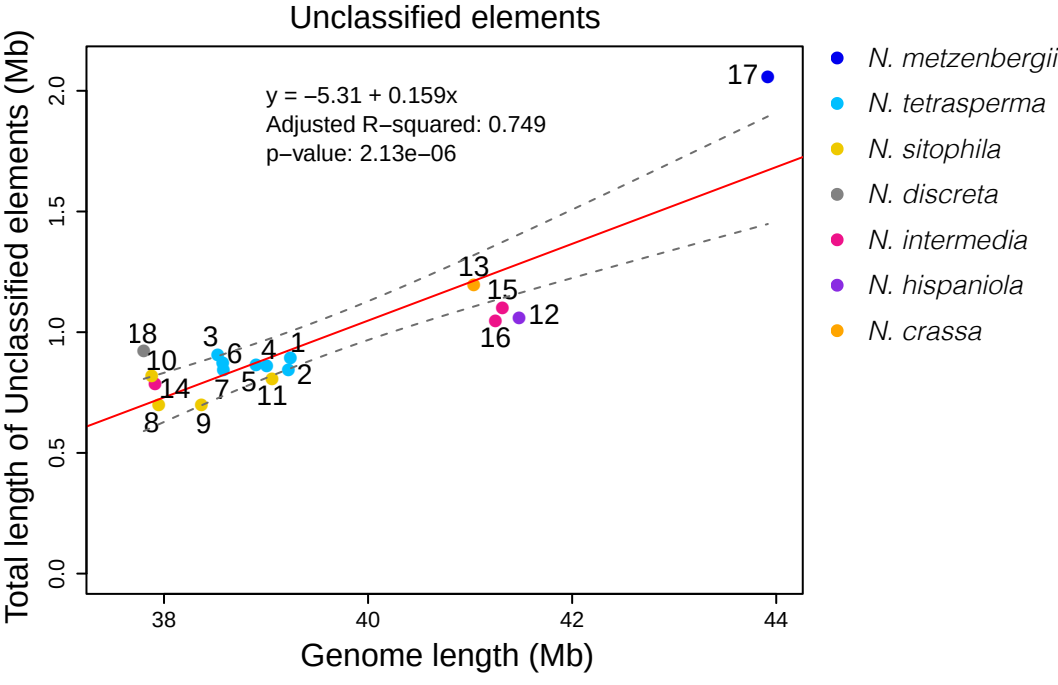
Figure S3

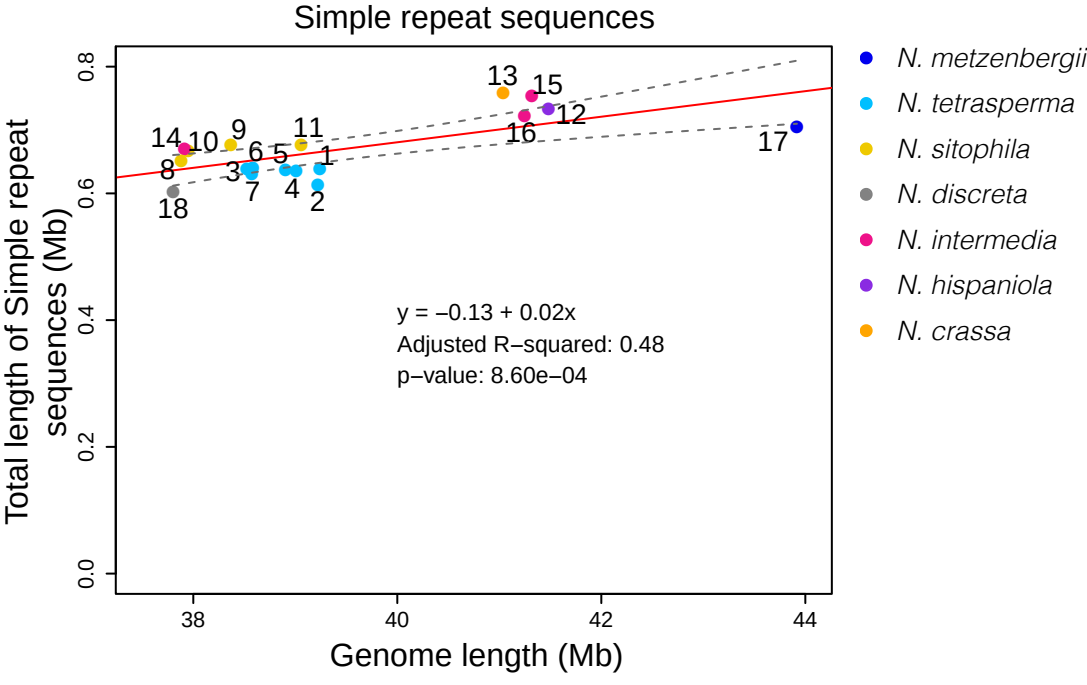

LTR elements
Total length of LTR elements (Mb)
Genome length (Mb)
0
1
2
3
4
38
40
42
44
y = –12.76 + 0.382x
Adjusted R–squared: 0.775
p–value: 8.72e–07
N. metzenbergii
N. tetrasperma
N. sitophila
N. discreta
N. intermedia
N. hispaniola
N. crassa


LINE elements
y = –2.78 + 0.085x
Adjusted R–squared: 0.37
p–value: 4.41e–03
Total length of LINE elements (Mb)
Genome length (Mb)
0.0
0.5
1.0
1.5
38
40
42
44
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
N. metzenbergii
N. tetrasperma
N. sitophila
N. discreta
N. intermedia
N. hispaniola
N. crassa


SINE elements
Total length of SINE elements (Mb)
Genome length (Mb)
0.00
0.01
0.02
0.03
38
40
42
44
14
8
18
10
76
9
5
4
3
2
11
1
13
15
16
12
17
y = 0.02 + 1.16e−04x
Adjusted R−squared: 0.125
p−value: 8.30e−02
N. metzenbergii
N. tetrasperma
N. sitophila
N. discreta
N. intermedia
N. hispaniola
N. crassa


DNA elements
y = −1.96 + 0.056x
Adjusted R−squared: 0.62
p−value: 6.37e−05
Total length of DNA elements (Mb)
Genome length (Mb)
0.0
0.1
0.2
0.3
0.4
0.5
0.6
38
40
42
44
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
N. metzenbergii
N. tetrasperma
N. sitophila
N. discreta
N. intermedia
N. hispaniola
N. crassa


Unclassified elements
y = −5.31 + 0.159x
Adjusted R−squared: 0.749
p−value: 2.13e−06
Total length of Unclassified elements (Mb)
Genome length (Mb)
0.0
0.5
1.0
1.5
2.0
38
40
42
44
17
13
15
12
16
18
3
6
4
1
10
2
5
14
7
11
8
9
N. metzenbergii
N. tetrasperma
N. sitophila
N. discreta
N. intermedia
N. hispaniola
N. crassa


Simple repeat sequences
Total length of Simple repeat sequences (Mb)
Genome length (Mb)
0.0
0.2
0.4
0.6
0.8
38
40
42
44
y = –0.13 + 0.02x
Adjusted R–squared: 0.48
p–value: 8.60e–04
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
N. metzenbergii
N. tetrasperma
N. sitophila
N. discreta
N. intermedia
N. hispaniola
N. crassa

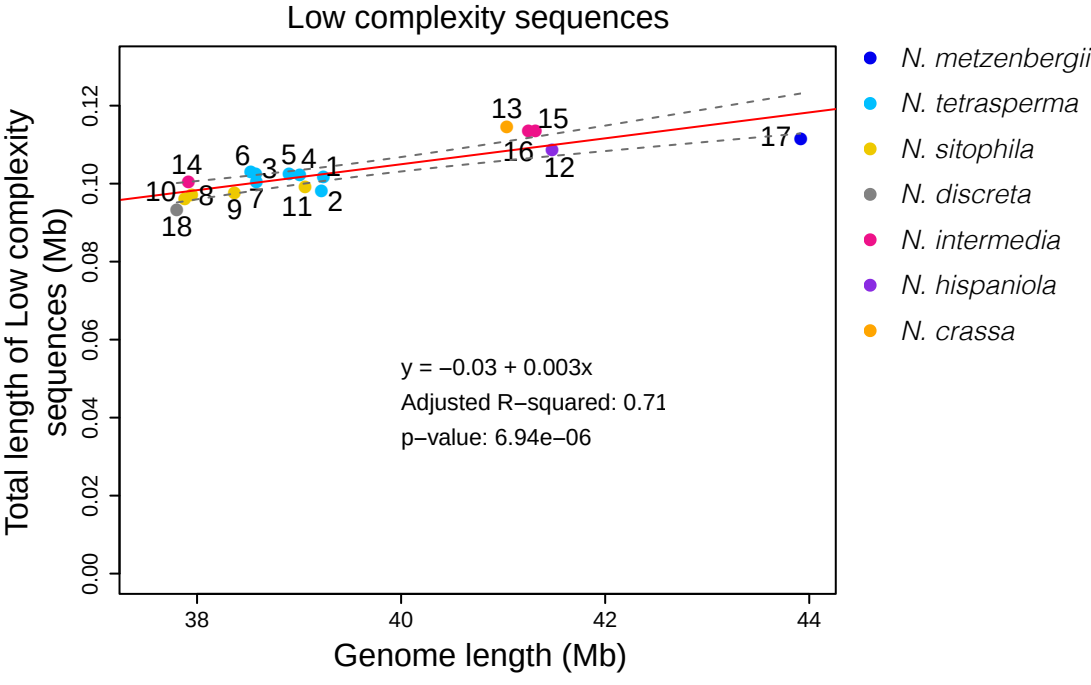
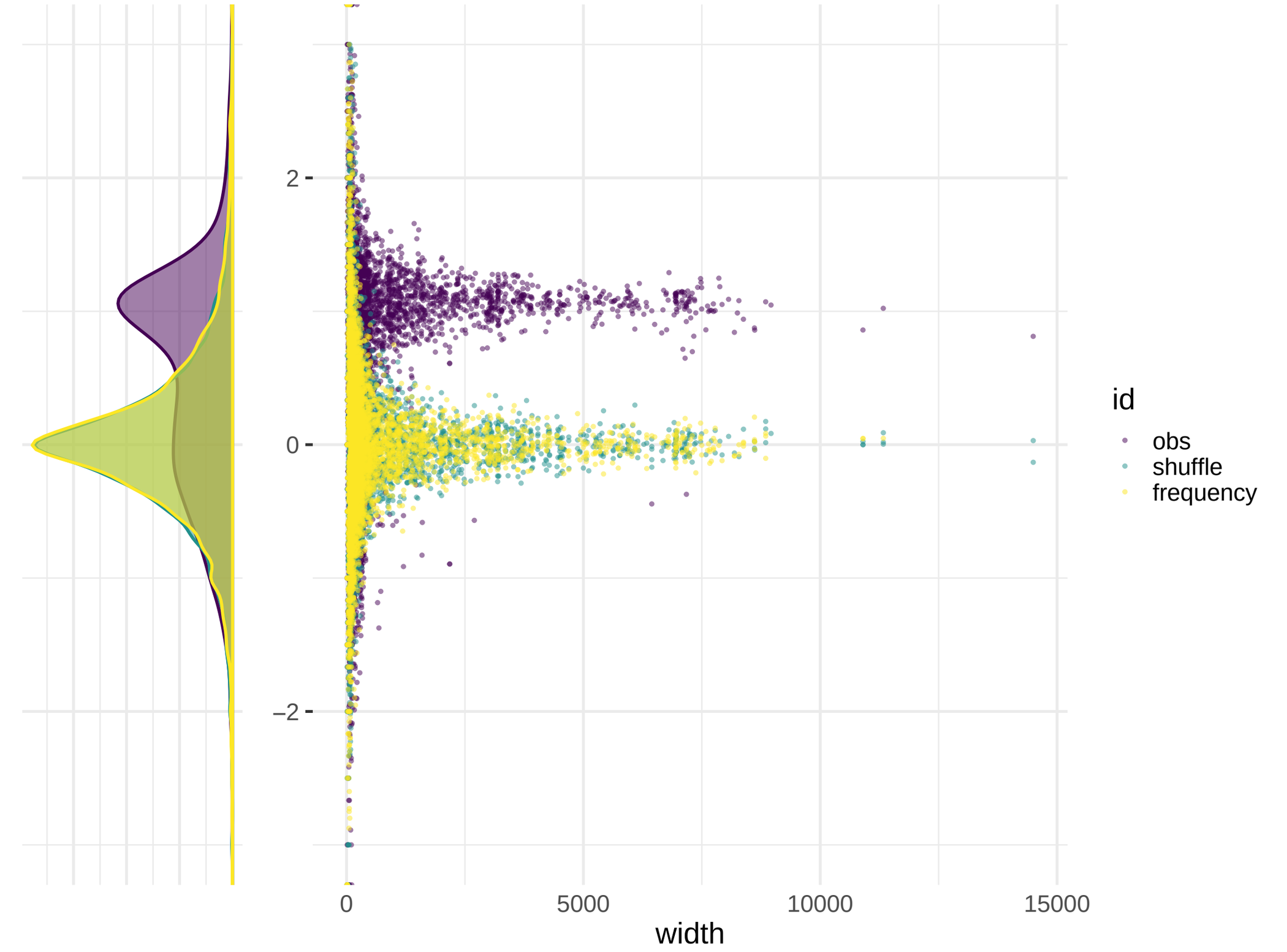
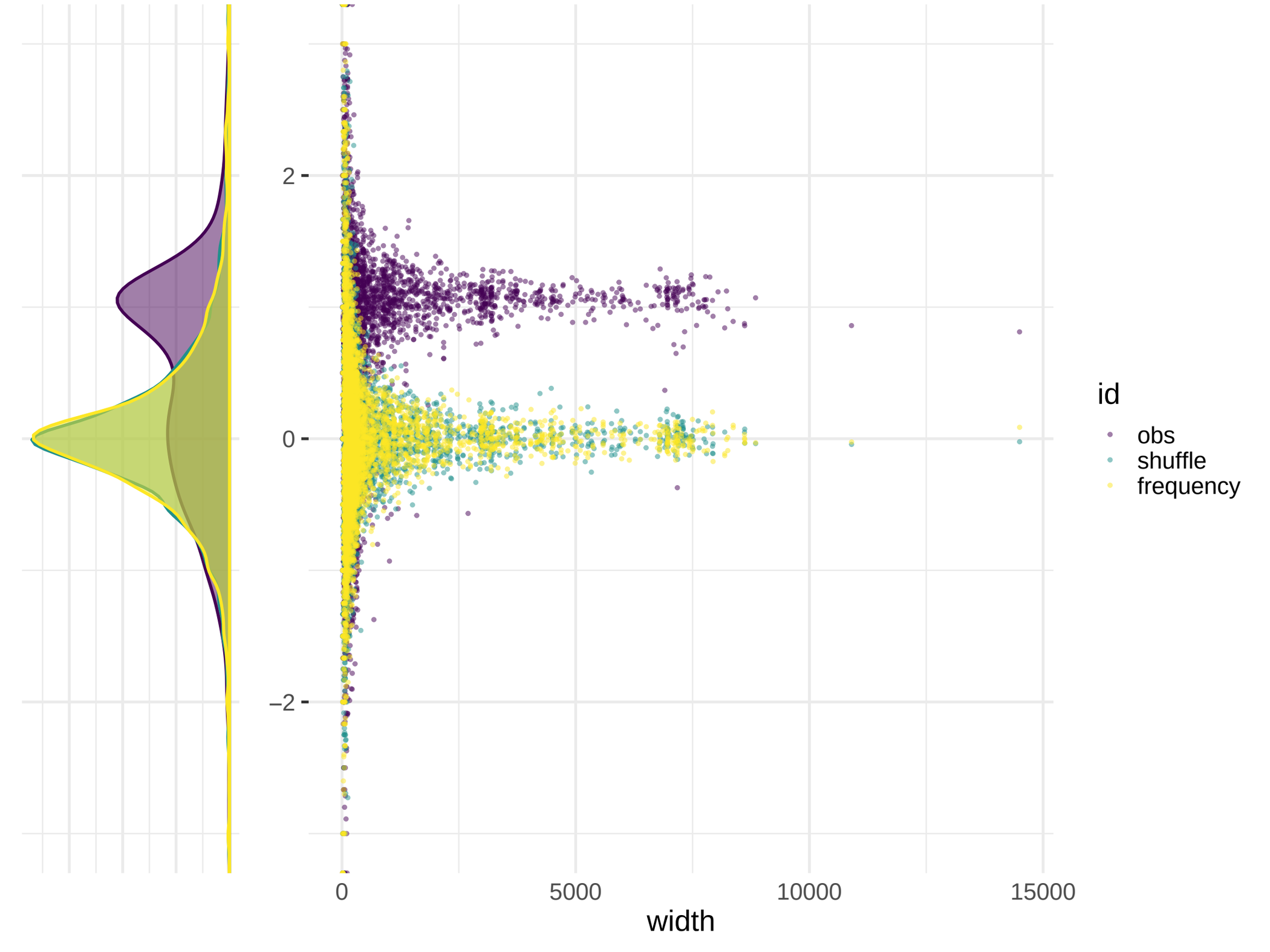

Low complexity sequences
Total length of Low complexity sequences (Mb)
Genome length (Mb)
0.00
0.02
0.04
0.06
0.08
0.10
0.12
38
40
42
44
y = −0.03 + 0.003x
Adjusted R−squared: 0.71
p−value: 6.94e−06
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
N. metzenbergii
N. tetrasperma
N. sitophila
N. discreta
N. intermedia
N. hispaniola
N. crassa

Figure S4

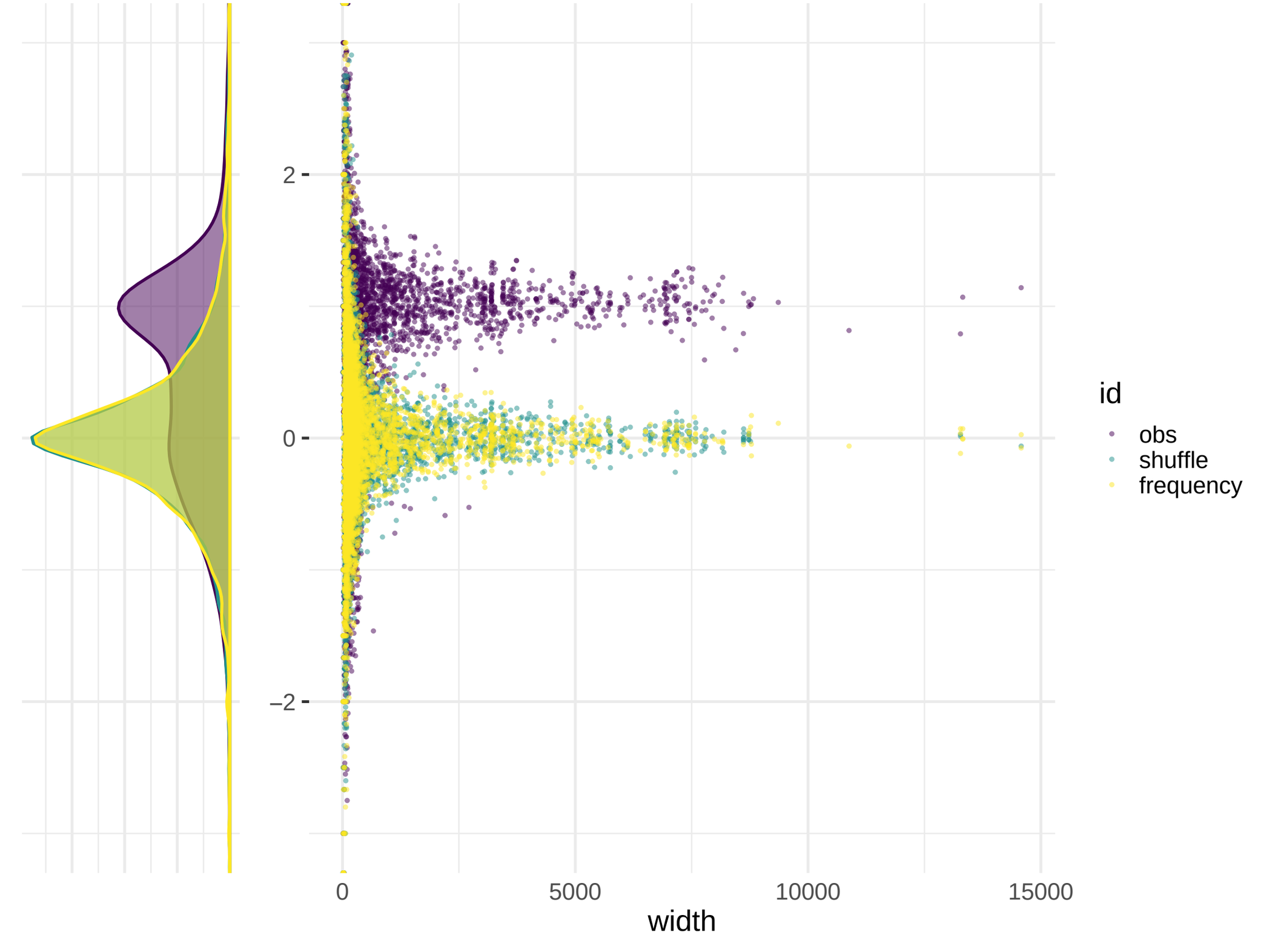
**N.tet_L6_2508**



**N.tet_L6_2509**



**N.tet_L9_10752**



**N.tet_L7_9045**

**N.tet_L7_9046**


2
0
−2
0
2500
5000
7500
10000
12500
width
id
obs
shuffle
frequency

**N.tet_L8_2503**

**N.tet_L8_2504**

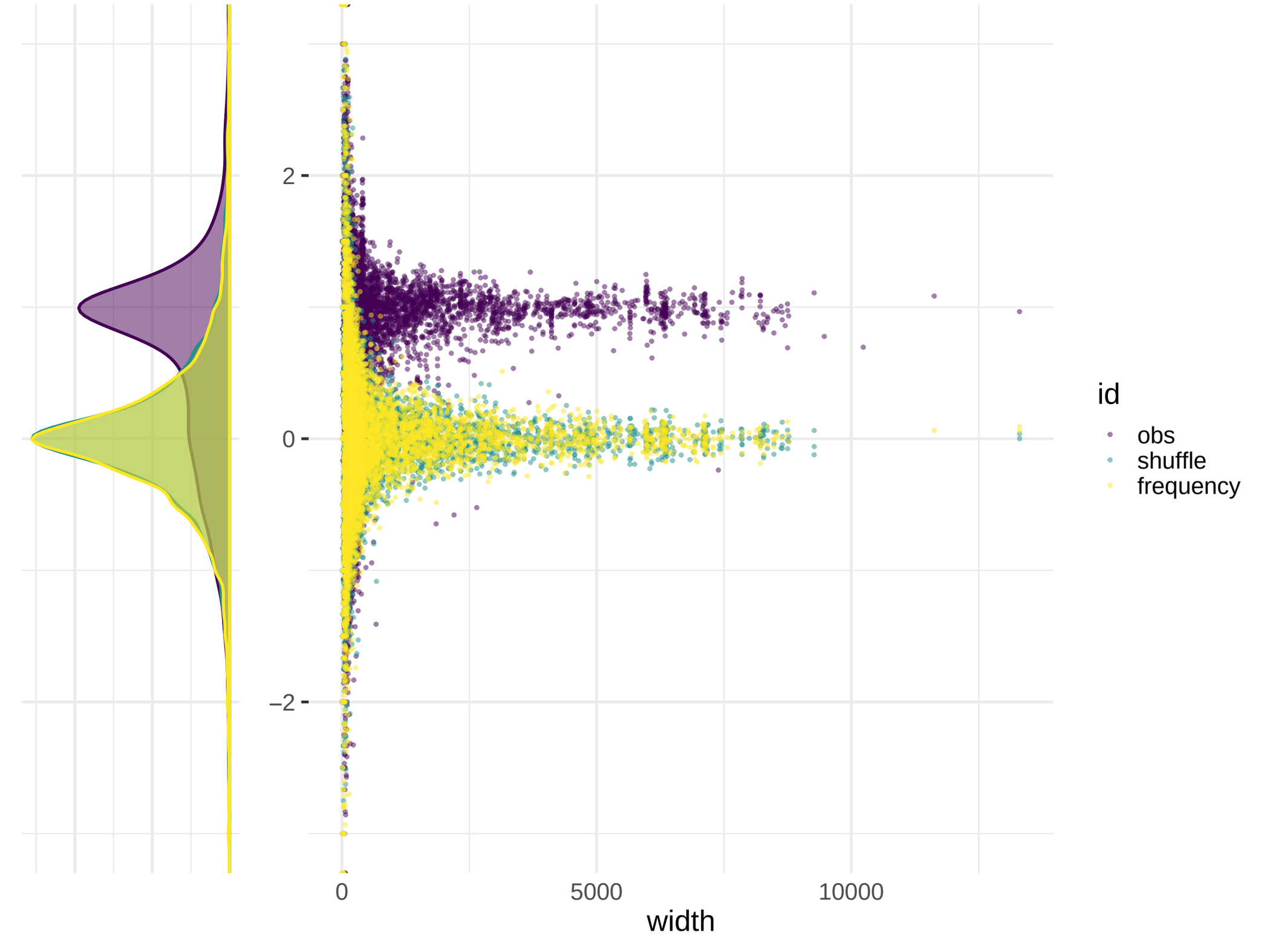
**N.sit_5940**

**N.sit_5941**

**N.sit_W1426**

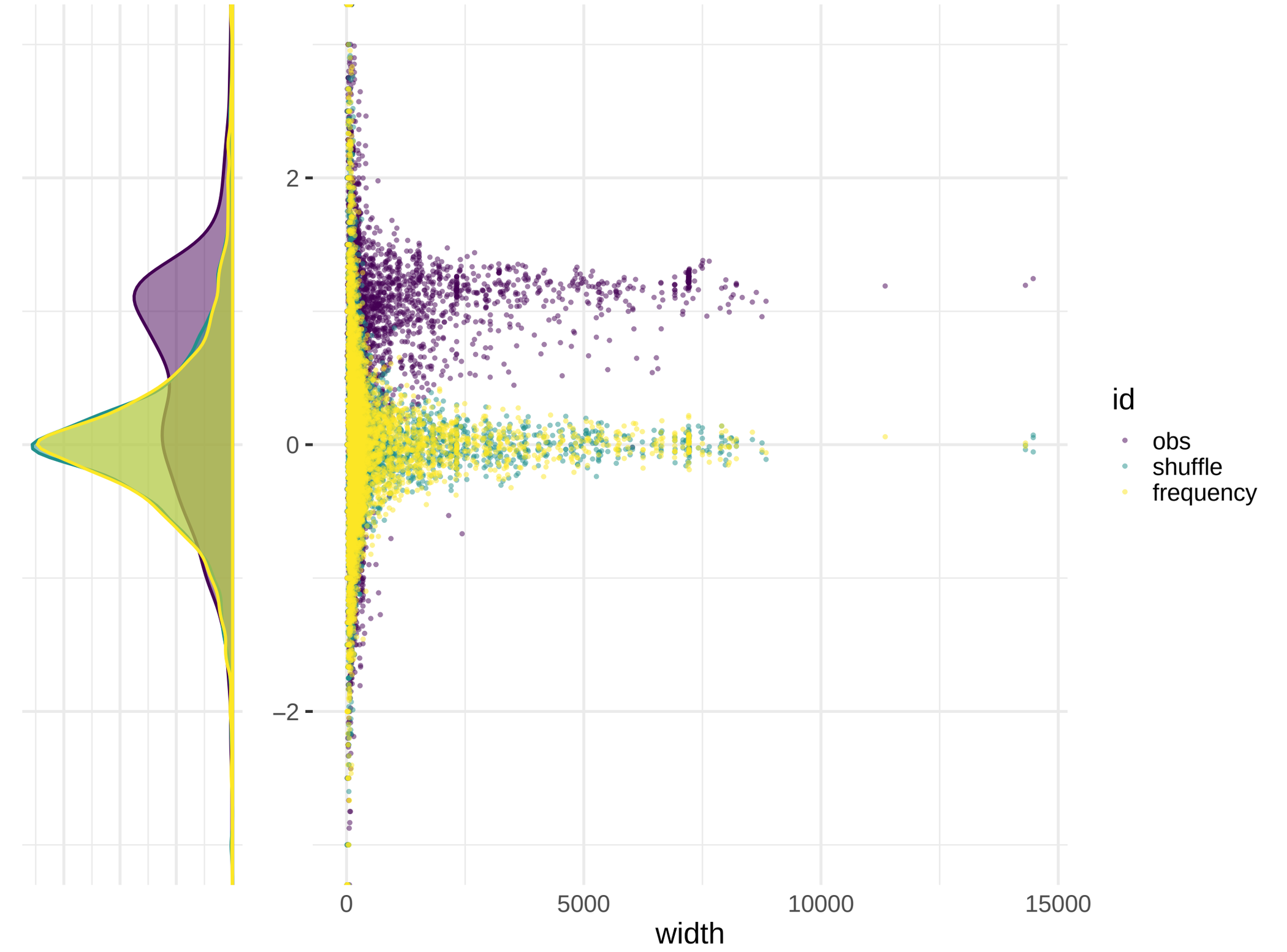
**N.sit_W1434**

**N.his_8817**



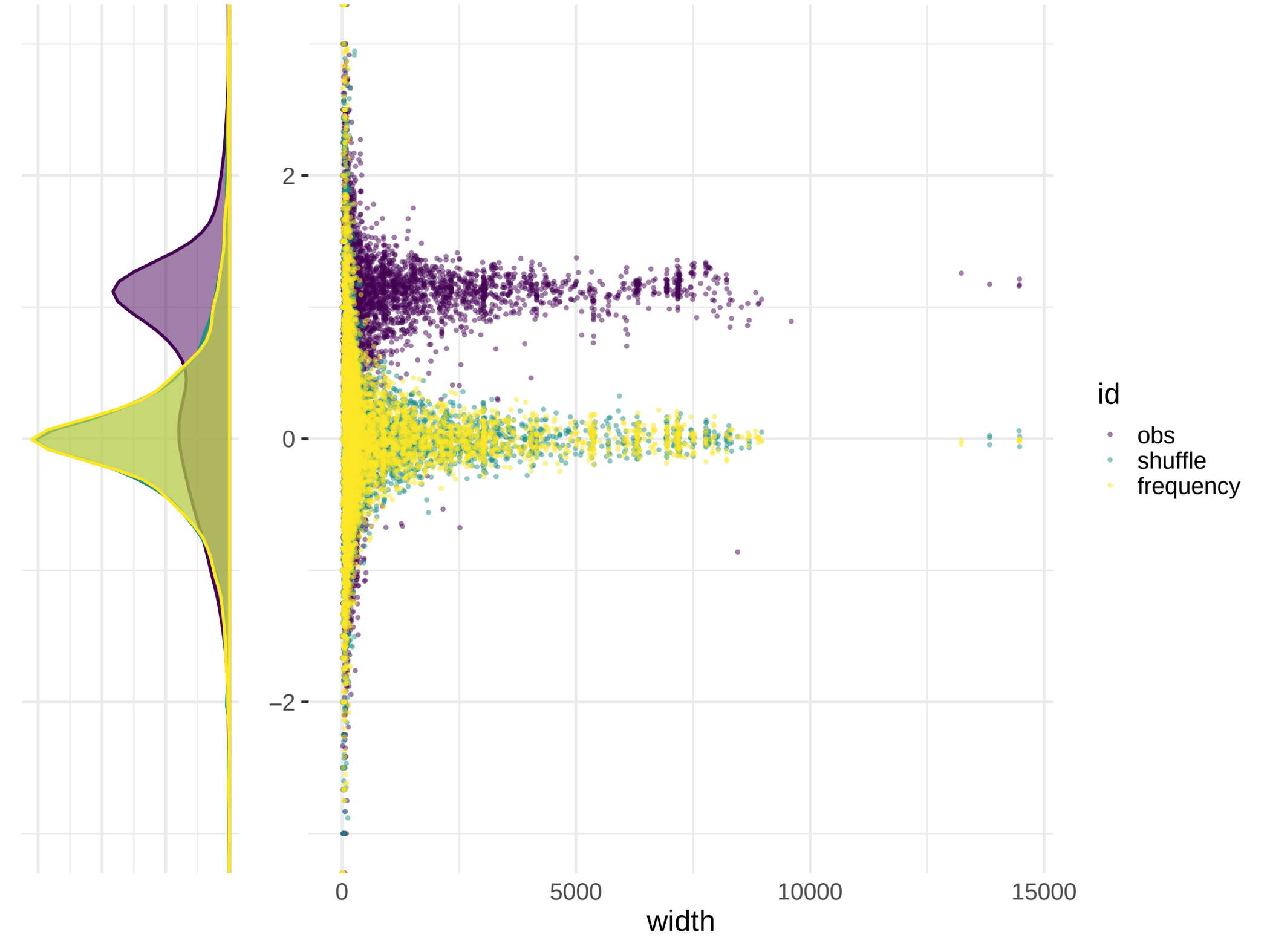
**N.cra_2489**

**N.int_8767**



**N.int_8807**

**N.int_8761**



**N.met_10397**


2
0
−2
0
2500
5000
7500
10000
12500
width
id
obs
shuffle
frequency

**N.dis_8579**

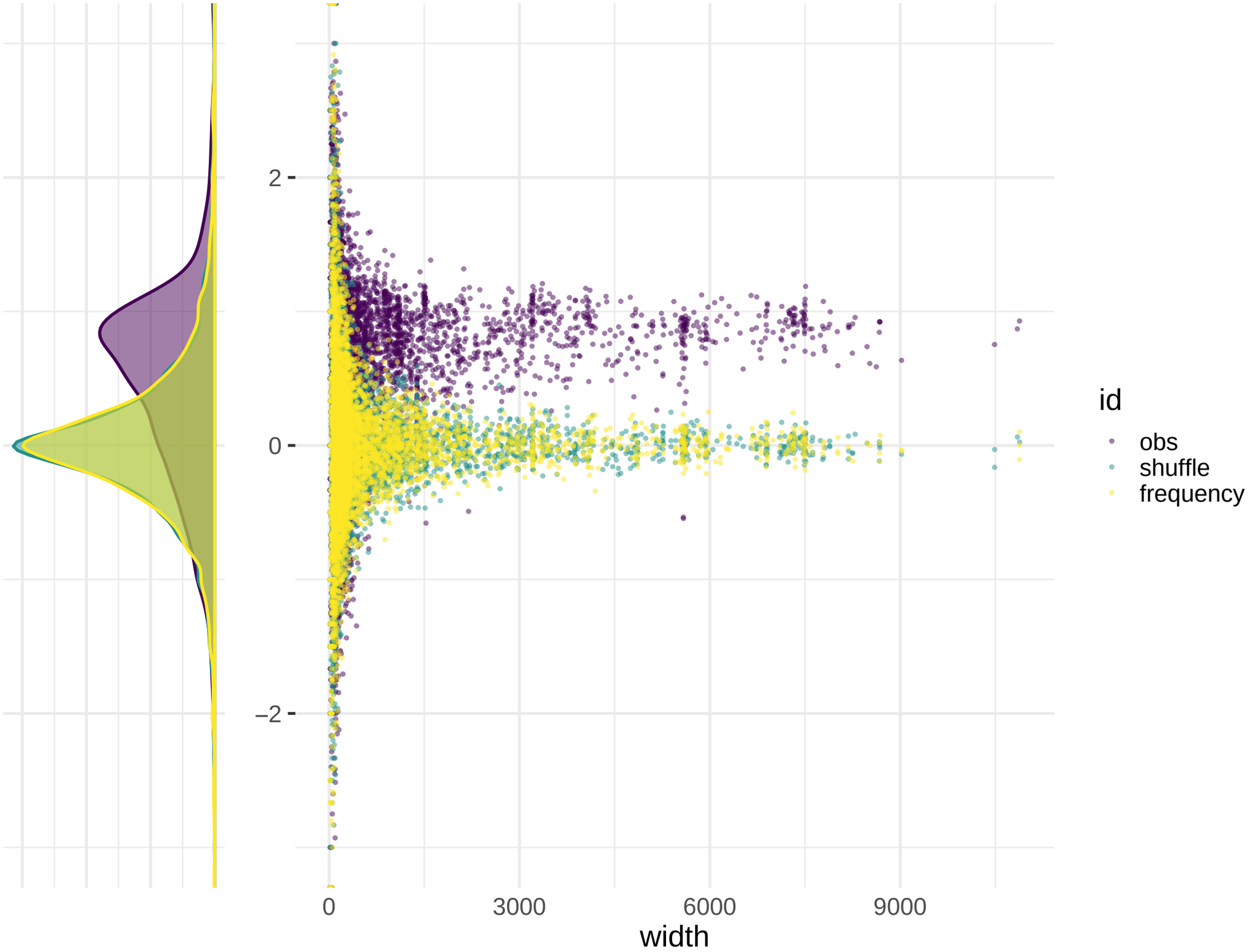
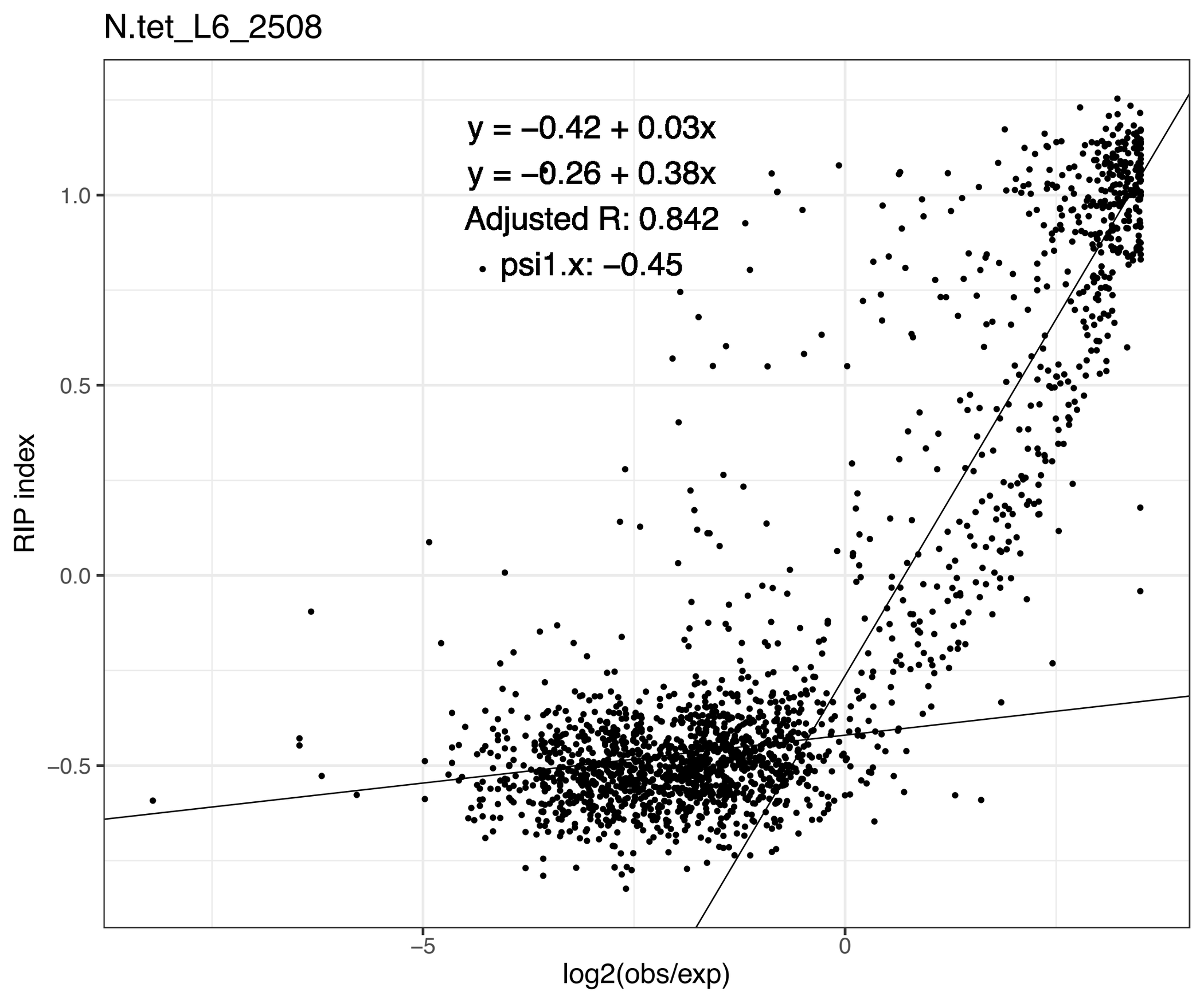
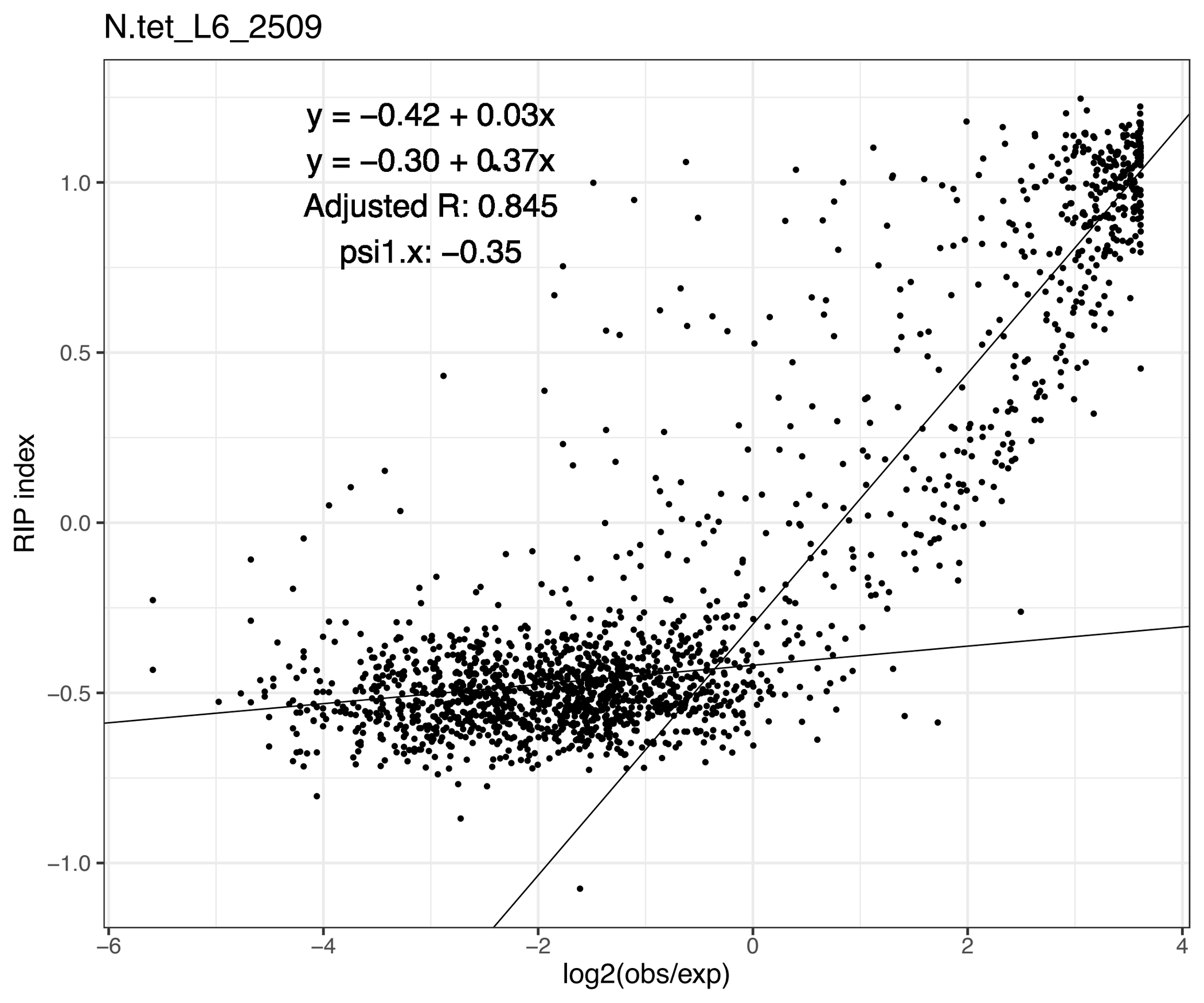
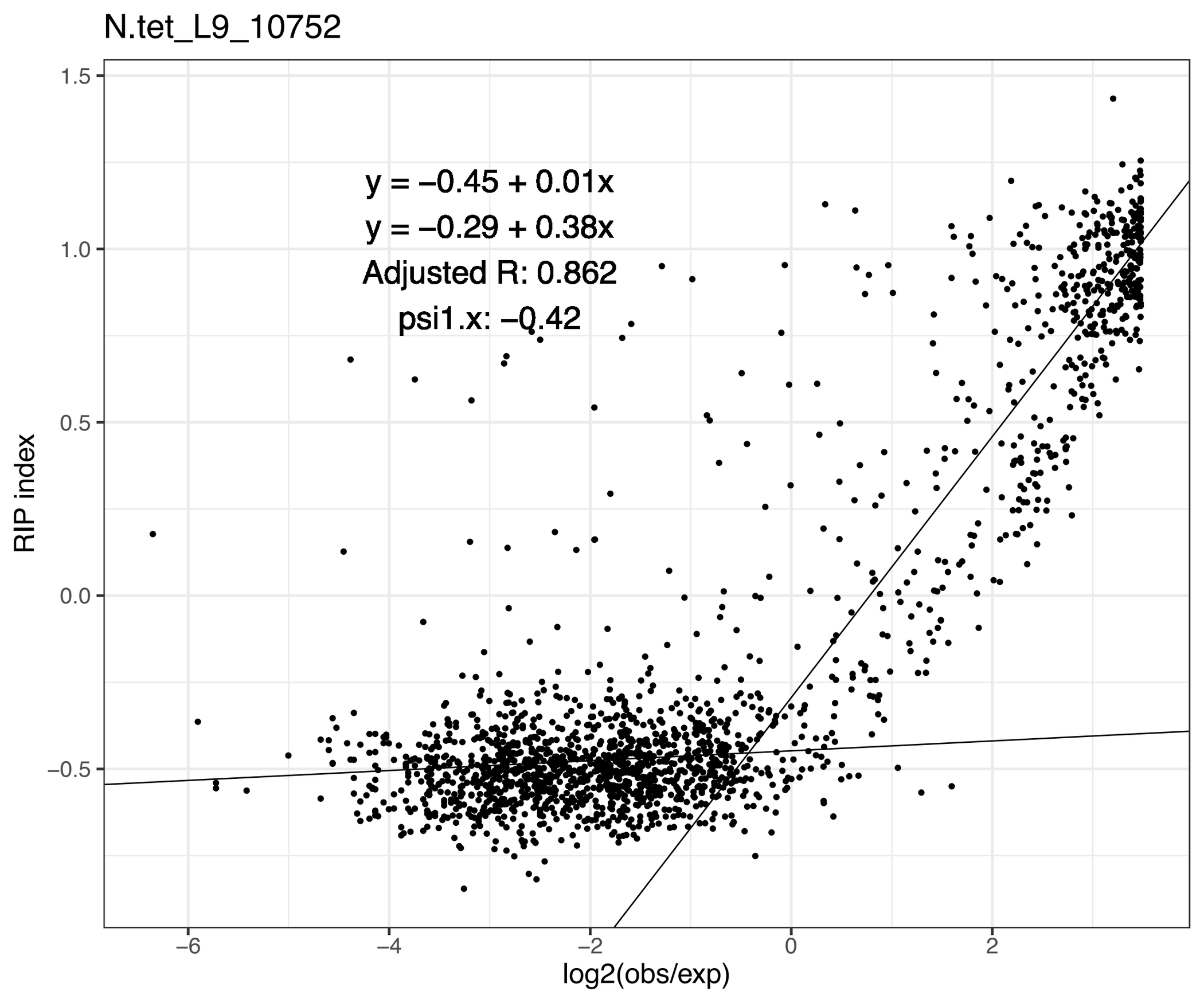
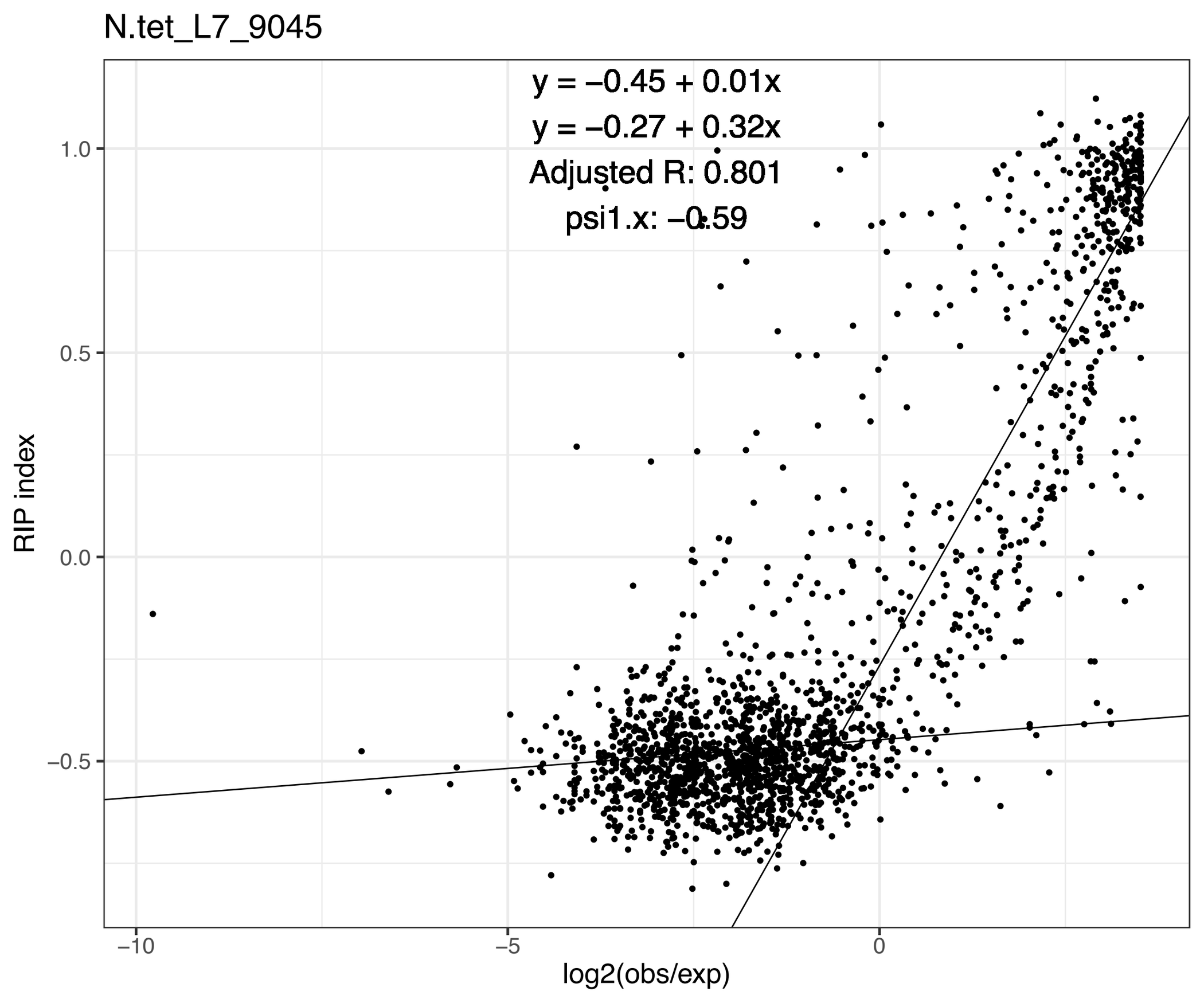


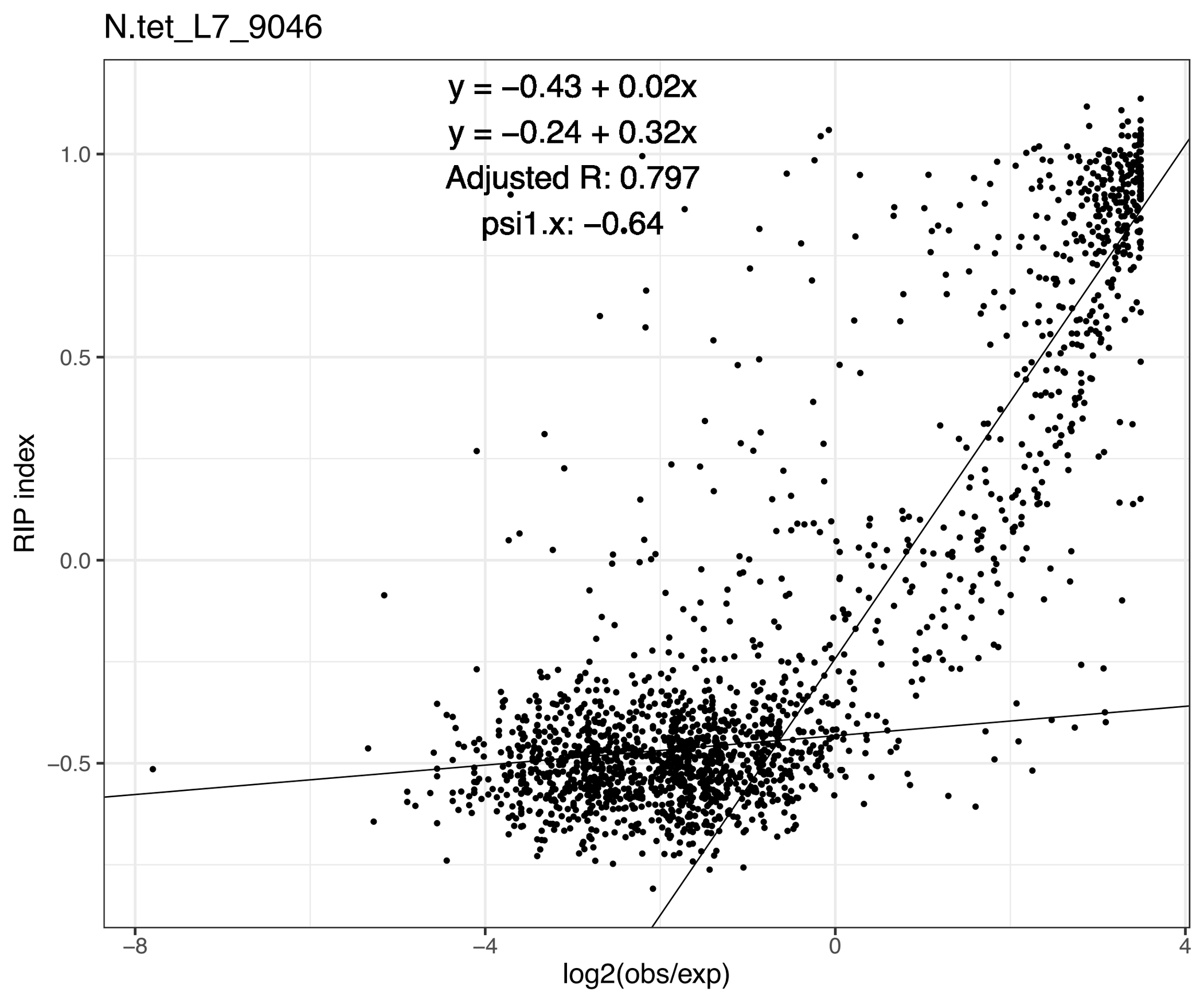
Figure S5

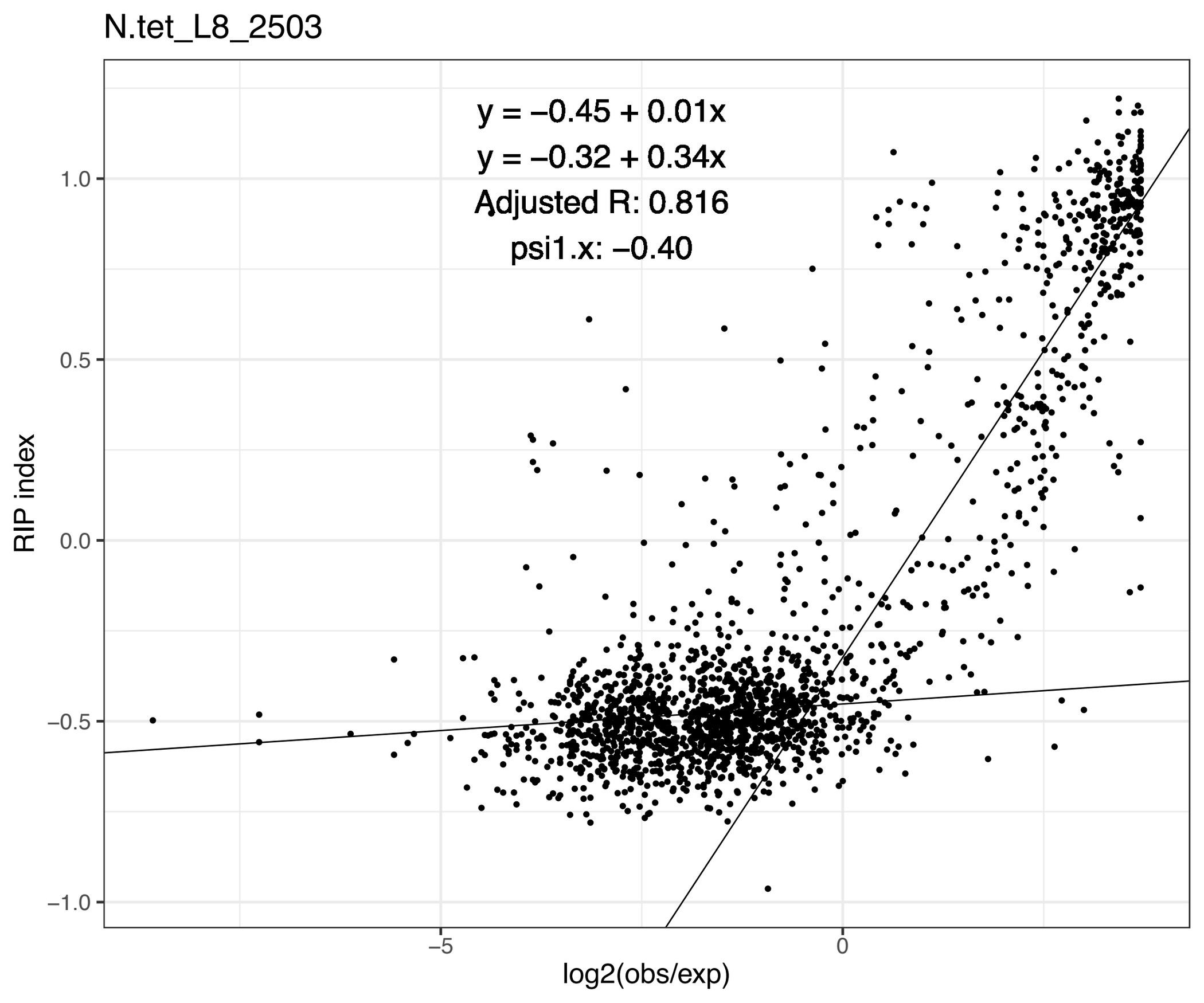

N.tet_L6_2508
y = −0.42 + 0.03x
y = −0.26 + 0.38x
Adjusted R: 0.842
psi1.x: −0.45
1.0
0.5
0.0
−0.5
RIP index
−5
0
log2(obs/exp)

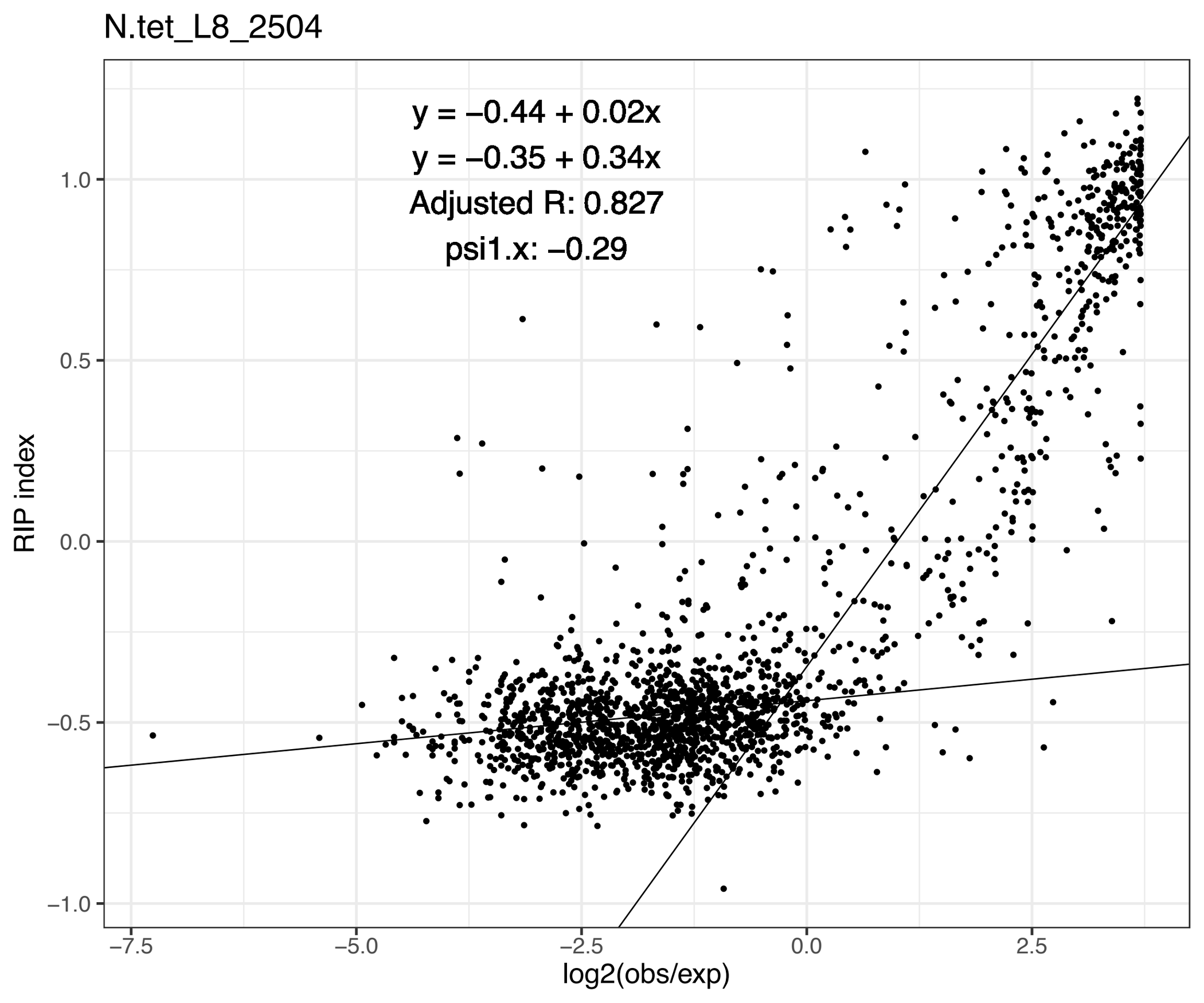

N.tet_L6_2509
y = −0.42 + 0.03x
y = −0.30 + 0.37x
Adjusted R: 0.845
psi1.x: −0.35
RIP index
1.0
0.5
0.0
−0.5
−1.0
−6
−4
−2
0
2
4
log2(obs/exp)

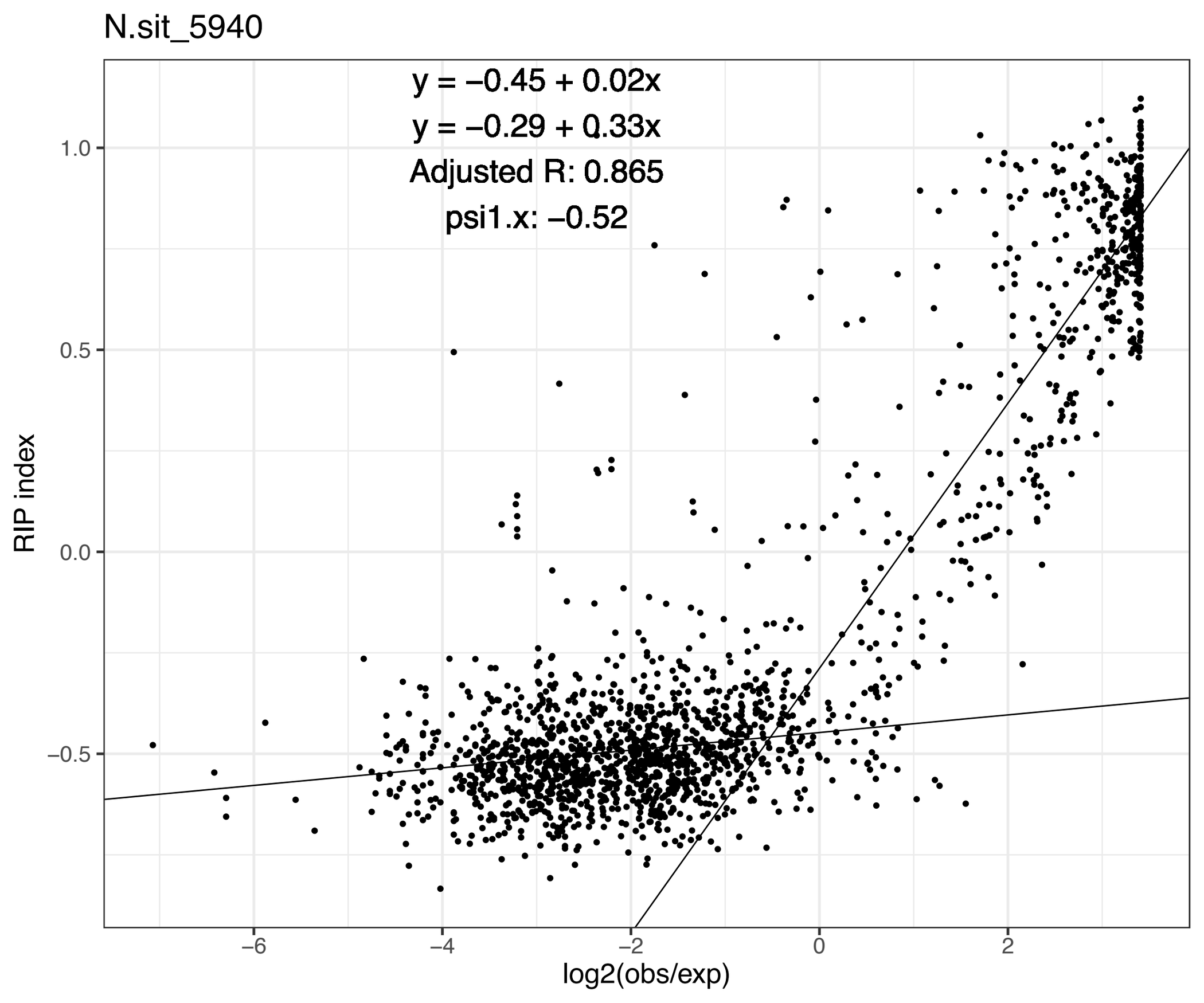

N.tet_L9_10752
y = −0.45 + 0.01x
y = −0.29 + 0.38x
Adjusted R: 0.862
psi1.x: −0.42
RIP index
log2(obs/exp)
1.5
1.0
0.5
0.0
−0.5
−6
−4
−2
0
2

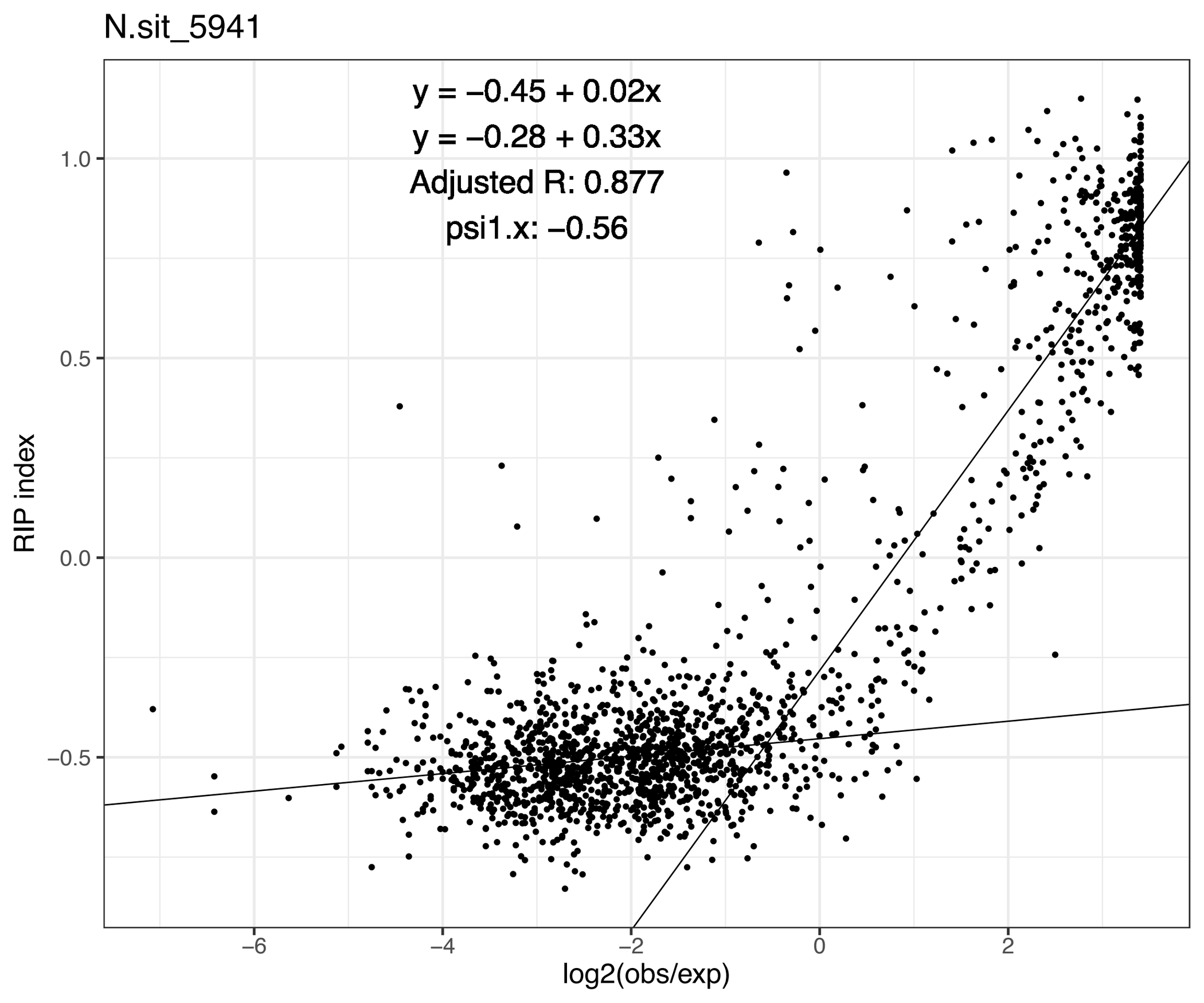

N.tet_L7_9045
y = −0.45 + 0.01x
y = −0.27 + 0.32x
Adjusted R: 0.801
psi1.x: −0.59
1.0
0.5
0.0
−0.5
RIP index
−10
−5
0
log2(obs/exp)

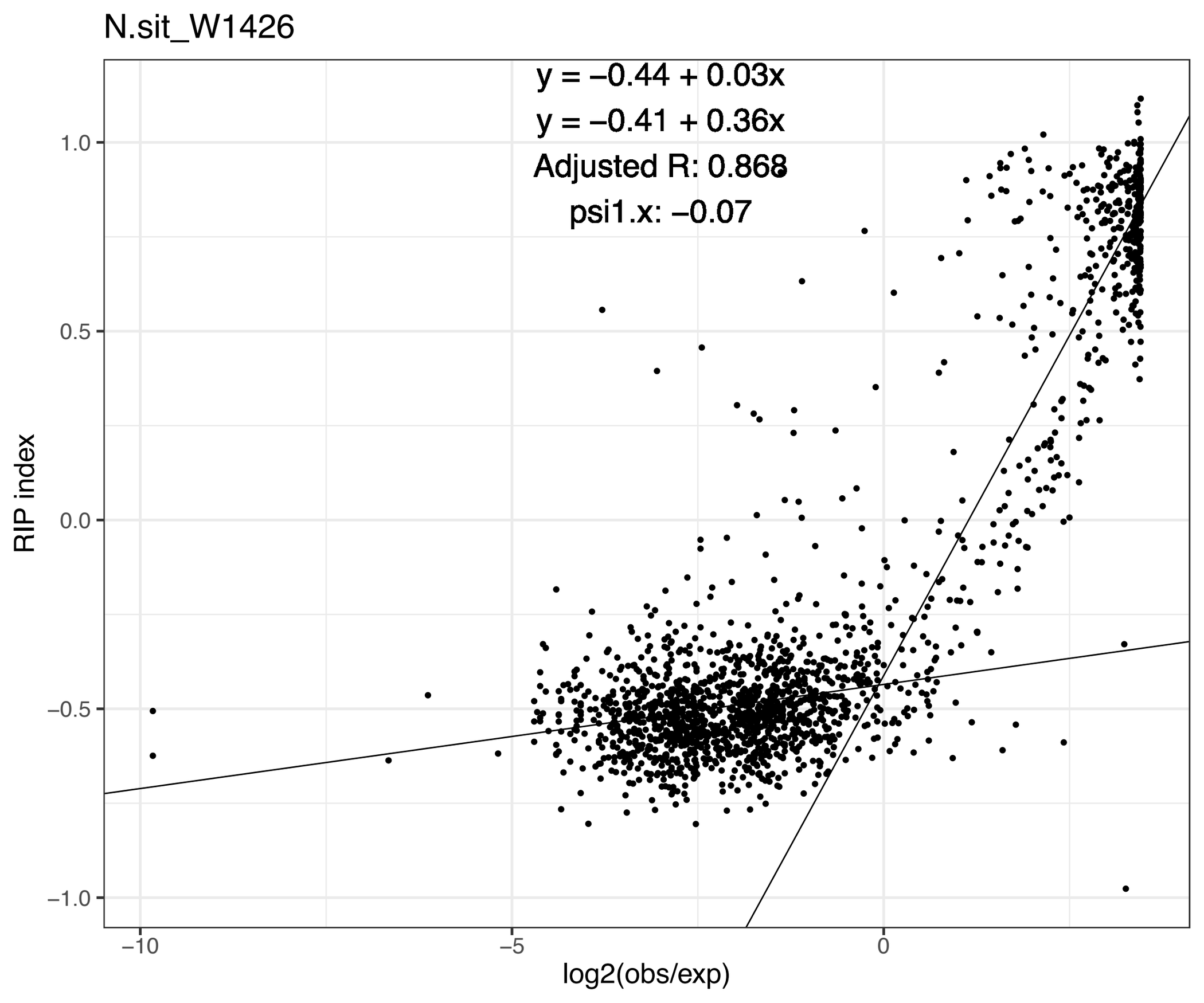

N.tet_L7_9046
y = −0.43 + 0.02x
y = −0.24 + 0.32x
Adjusted R: 0.797
psi1.x: −0.64
1.0
0.5
0.0
−0.5
RIP index
−8
−4
0
4
log2(obs/exp)

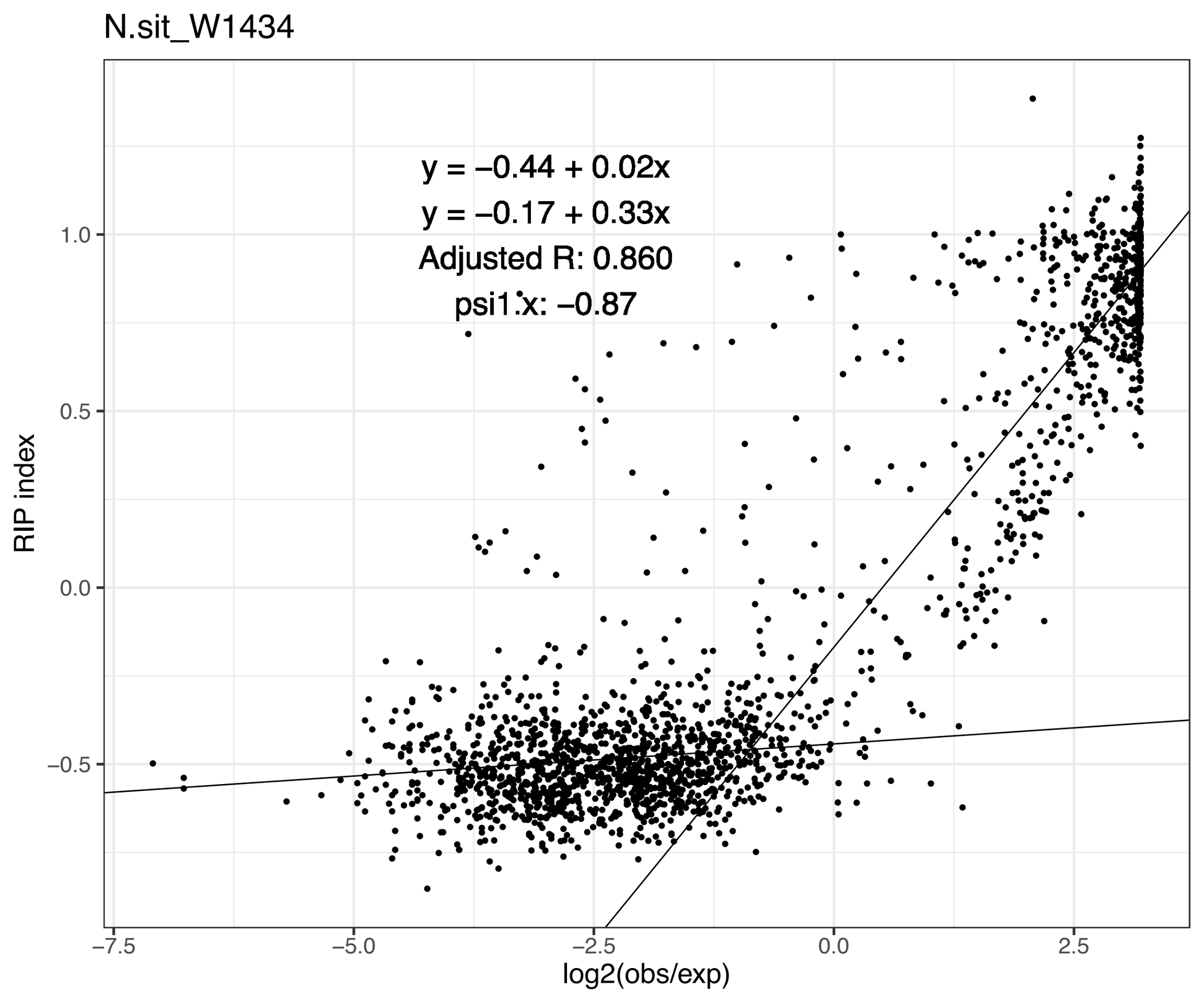

N.tet_L8_2503
y = −0.45 + 0.01x
y = −0.32 + 0.34x
Adjusted R: 0.816
psi1.x: −0.40
1.0
0.5
0.0
−0.5
−1.0
RIP index
−5
0
log2(obs/exp)

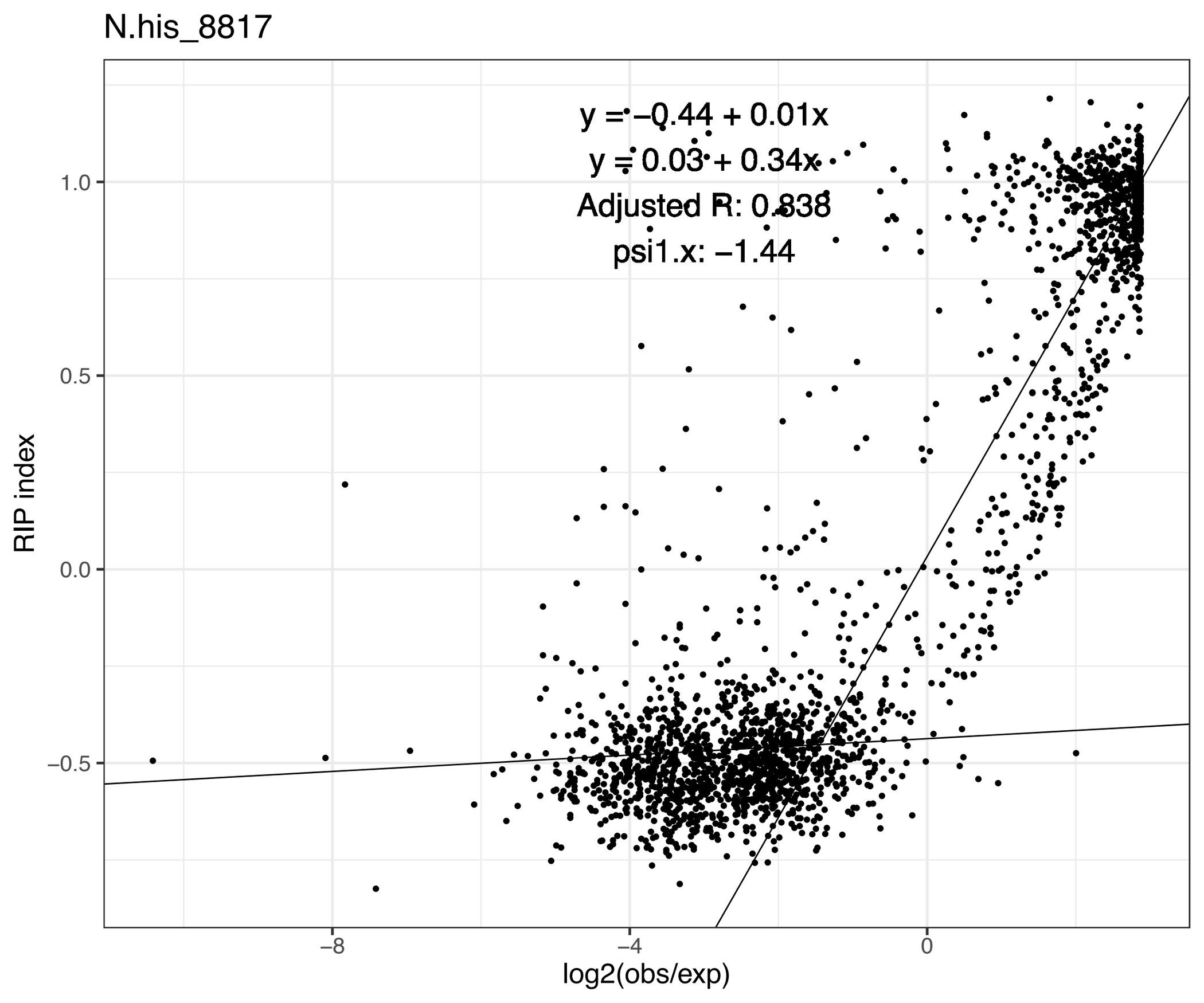

N.tet_L8_2504
y = −0.44 + 0.02x
y = −0.35 + 0.34x
Adjusted R: 0.827
psi1.x: −0.29
RIP index
1.0
0.5
0.0
−0.5
−1.0
−7.5
−5.0
−2.5
0.0
2.5
log2(obs/exp)

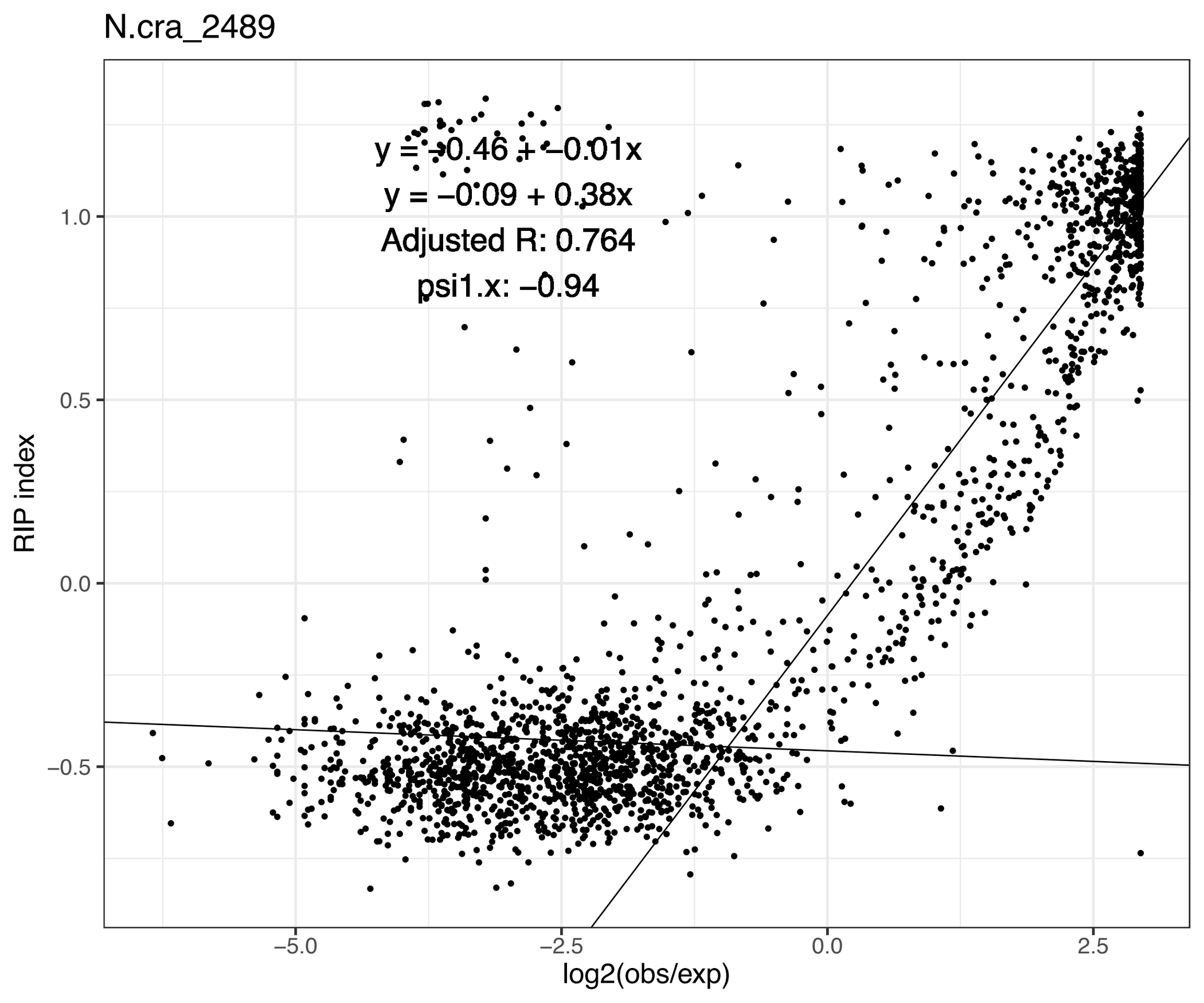

N.sit_5940
y = −0.45 + 0.02x
y = −0.29 + 0.33x
Adjusted R: 0.865
psi1.x: −0.52
RIP index
1.0
0.5
0.0
−0.5
−6
−4
−2
0
2
log2(obs/exp)

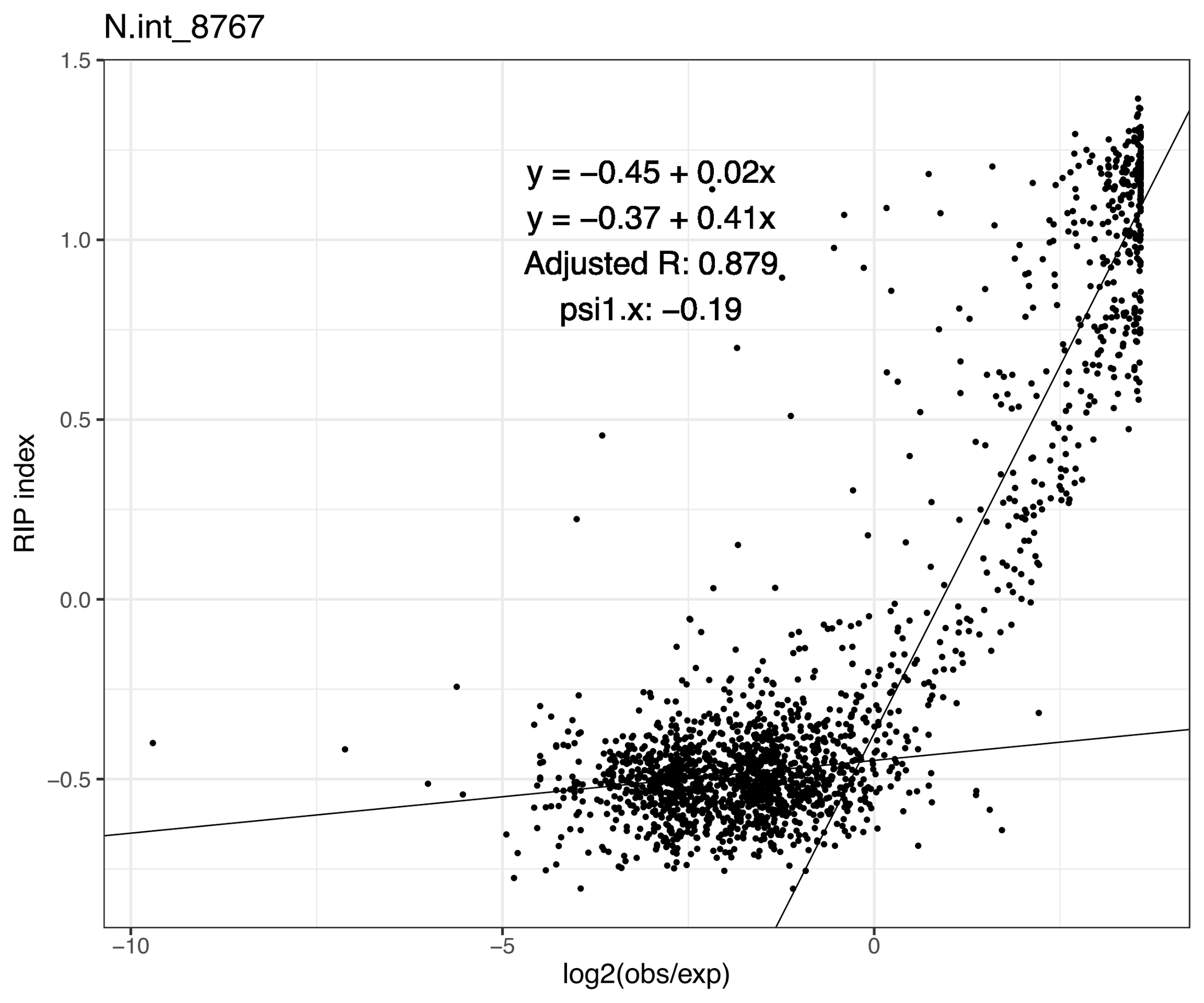

N.sit_5941
y = −0.45 + 0.02x
y = −0.28 + 0.33x
Adjusted R: 0.877
psi1.x: −0.56
RIP index
1.0
0.5
0.0
−0.5
−6
−4
−2
0
2
log2(obs/exp)

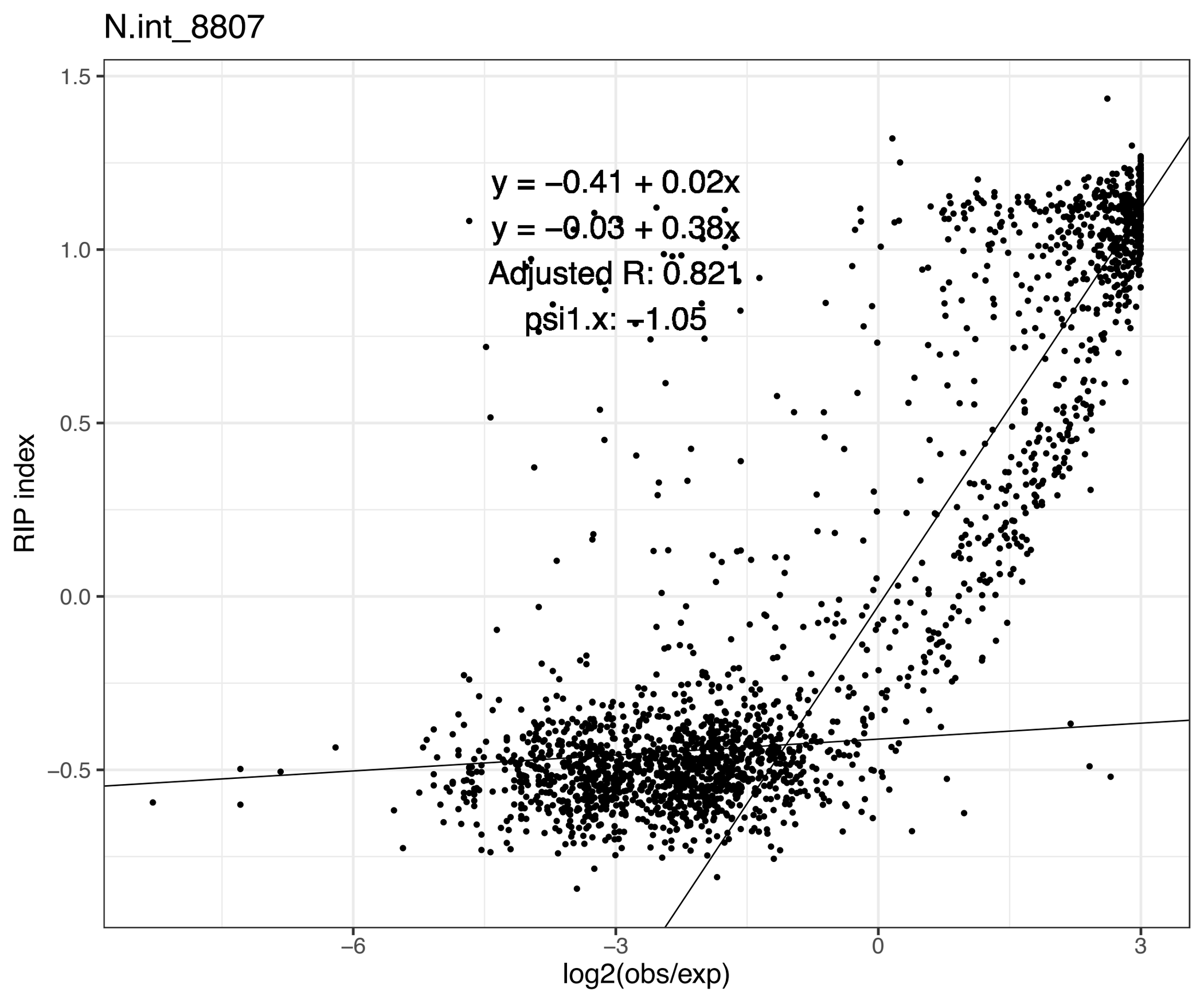

N.sit_W1426
y = −0.44 + 0.03x
y = −0.41 + 0.36x
Adjusted R: 0.868
psi1.x: −0.07
RIP index
1.0
0.5
0.0
−0.5
−1.0
−10
−5
0
log2(obs/exp)

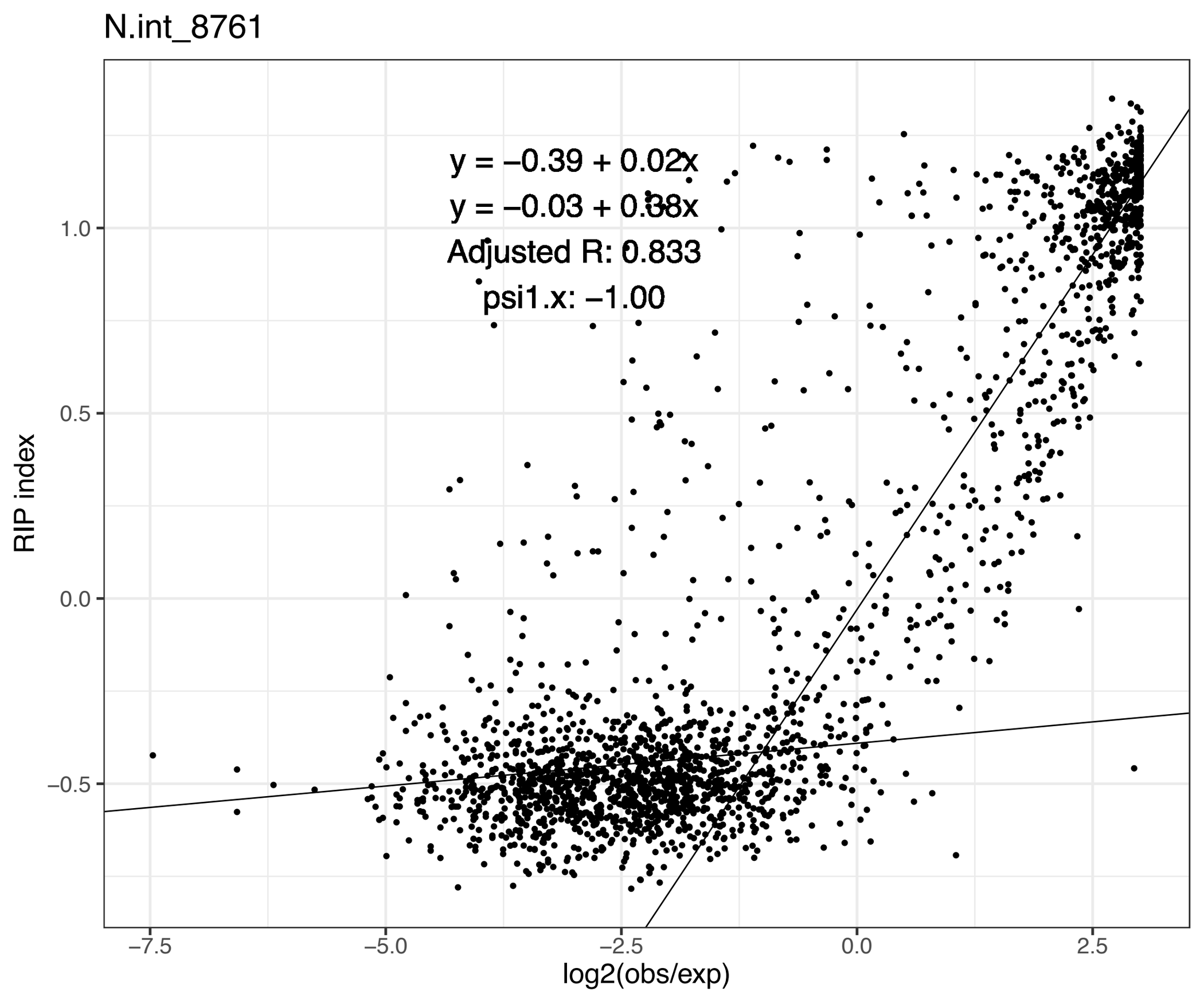

N.sit_W1434
y = −0.44 + 0.02x
y = −0.17 + 0.33x
Adjusted R: 0.860
psi1.x: −0.87
RIP index
1.0
0.5
0.0
−0.5
−7.5
−5.0
−2.5
0.0
2.5
log2(obs/exp)

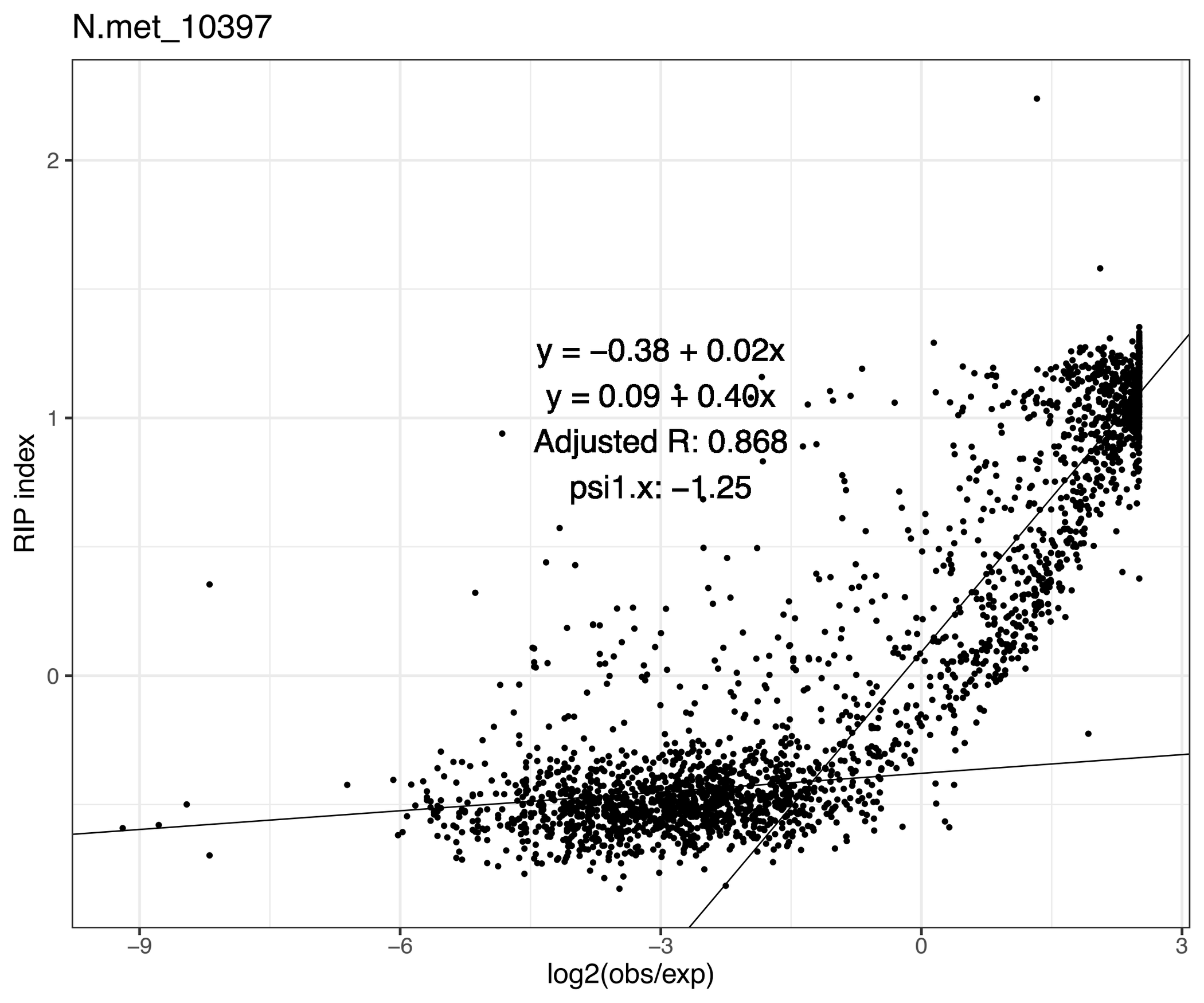

N.his_8817
y = −0.44 + 0.01x
y = 0.03 + 0.34x
Adjusted R: 0.838
psi1.x: −1.44
1.0
0.5
0.0
−0.5
RIP index
−8
−4
0
log2(obs/exp)


N.cra_2489
y = −0.46 + −0.01x
y = −0.09 + 0.38x
Adjusted R: 0.764
psi1.x: −0.94
RIP index
1.0
0.5
0.0
−0.5
−5.0
−2.5
0.0
2.5
log2(obs/exp)


N.int_8767
y = −0.45 + 0.02x
y = −0.37 + 0.41x
Adjusted R: 0.879
psi1.x: −0.19
RIP index
log2(obs/exp)
1.5
1.0
0.5
0.0
−0.5
−10
−5
0


N.int_8807
y = −0.41 + 0.02x
y = −0.03 + 0.38x
Adjusted R: 0.821
psi1.x: −1.05
RIP index
log2(obs/exp)
1.5
1.0
0.5
0.0
−0.5
−6
−3
0
3


N.int_8761
y = −0.39 + 0.02x
y = −0.03 + 0.38x
Adjusted R: 0.833
psi1.x: −1.00
RIP index
1.0
0.5
0.0
−0.5
−7.5
−5.0
−2.5
0.0
2.5
log2(obs/exp)


N.met_10397
y = −0.38 + 0.02x
y = 0.09 + 0.40x
Adjusted R: 0.868
psi1.x: −1.25
RIP index
log2(obs/exp)
2
1
0
−9
−6
−3
0
3

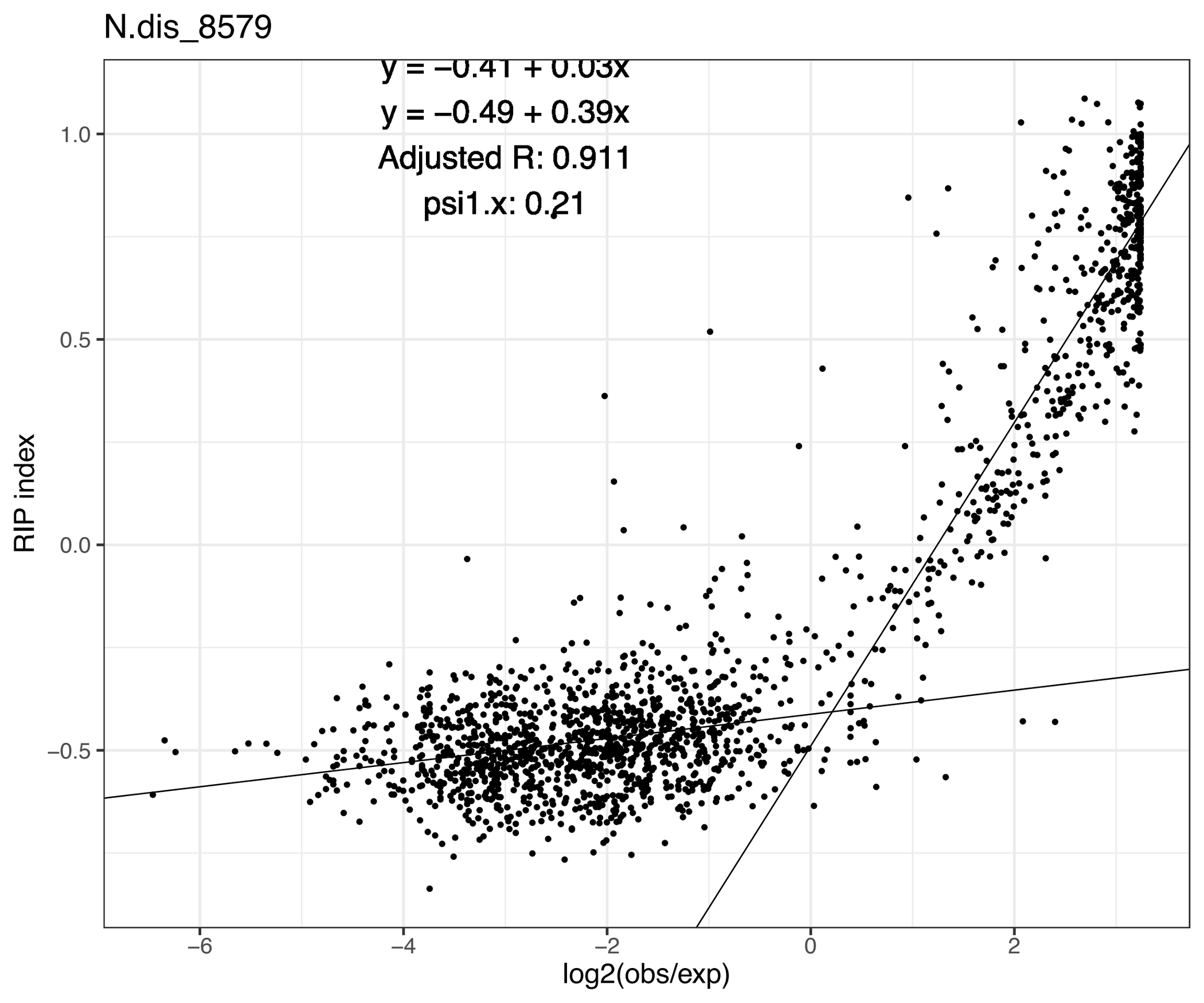

N.dis_8579
y = −0.41 + 0.03x
y = −0.49 + 0.39x
Adjusted R: 0.911
psi1.x: 0.21
1.0
0.5
0.0
−0.5
RIP index
−6
−4
−2
0
2
log2(obs/exp)

**Table S1.** Strain and assembly statistics for 18 *Neurospora* strains and data availibility.

| Strain/FGSC[a] | Species[b] | Mating type | Number of unitigs | Number of placed unitigs[c] | Assembly size (bp) | N50 contig length (bp) | Mean sequencing coverage | GC content (%) | BUSCO (%)[d] | Genome first referenced in respective publications | Data repository[e] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **PacBio** | | | | | | | | | | | |
| 965a/10752 | N. tetrasperma L9 | a | 24 | 7 | 38,575,072 | 5,668,045 | 50.1 | 49.53 | 99.31 | Sun et al (2017) | PRJNA398702 |
| CJ73/9045 | N. tetrasperma L7 | A | 27 | 7 | 39,009,030 | 5,642,919 | 61.2 | 49.58 | 99.31 | Sun et al (2017) | PRJNA398702 |
| CJ74/9046 | N. tetrasperma L7 | a | 16 | 7 | 38,902,778 | 5,642,993 | 55.22 | 49.54 | 99.66 | Sun et al (2017) | PRJNA398702 |
| CJ85/2503 | N. tetrasperma L8 | A | 29 | 8 | 38,526,578 | 5,531,777 | 64.6 | 49.89 | 99.31 | Sun et al (2017) | PRJNA398702 |
| CJ86/2504 | N. tetrasperma L8 | a | 37 | 8 | 38,582,854 | 5,531,742 | 69.13 | 49.91 | 99.31 | Sun et al (2017) | PRJNA398702 |
| 8817[f] | N. hispaniola | A | 26 | 7 | 41,481,169 | 6,020,640 | 127.05 | 47.75 | 99.31 | This study | PRJNA622402 |
| W1426[g] | N. sitophila | A | 20 | 8 | 37,879,917 | 4,685,423 | 93.47 | 49.9 | 99.31 | Svedberg et al (2020) | PRJNA649678 |
| 5940 | N. sitophila | A | 8 | 7 | 37,949,446 | 5,431,983 | 94.19 | 49.71 | 99.31 | Hosseini et al (2020) | PRJNA505300 |
| 5941 | N. sitophila | a | 25 | 7 | 38,368,316 | 5,449,980 | 97.5 | 49.63 | 99.31 | Hosseini et al (2020) | PRJNA505300 |
| W1434[g] | N. sitophila | A | 14 | 7 | 39,058,735 | 5,522,155 | 80.17 | 49.33 | 99.31 | Sun et al (2017) | PRJNA398702 |
| 8767 | N. intermedia | A | 35 | 24 | 37,915,042 | 2,232,336 | 147.51 | 49.97 | 98.97 | This study | PRJNA622402 |
| 8761 | N. intermedia | A | 27 | 10 | 41,248,059 | 5,337,510 | 143.34 | 48.37 | 99.31 | Svedberg et al (2018) | PRJNA486257 |
| 8807 | N. intermedia | a | 14 | 7 | 41,318,598 | 5,974,681 | 69.28 | 48.05 | 99.31 | Sun et al (2017), Svedberg et al (2018) | PRJNA398702 |
| 10397 | N. metzenbergii | a | 27 | 8 | 43,917,869 | 5,660,310 | 86.94 | 47.75 | 98.97 | This study | PRJNA622402 |
| 8579 | N. discreta | A | 22 | 7 | 37,801,234 | 5,156,816 | 111.68 | 49.41 | 99.31 | This study | PRJNA622402 |
| **Reference** | | | | | | | | | | | |
| 2508 | N. tetrasperma L6 | A | 82 | na | 39,240,259 | 5,681,182 | | 49.39 | 99 | Ellison et al (2011) | |
| 2509 | N. tetrasperma L6 | a | 308 | na | 39,220,604 | 5,677,391 | | 49.65 | 99.31 | Ellison et al (2011) | |
| 2489 | N. crassa | A | 20 | 7 | 41,037,538 | 6,000,761 | | 48.25 | 99.66h | Galagan et al (2003) | |

a. Strain numbers correspond to the strain ID in the Fungal Genetics Stock Center (FGSC).
b. The four different lineages of *N. tetrasperma* (L6, L9, L7, L8) are herein referred to as different species, according to Corcoran, et al. (2014, 2016) and Menkis, et al. (2009).
c. Number of contigs mapping to the seven chromosomes of the N. crassa OR74A reference genome
d. BUSCO (v2/v3) was determined using gVolante with reference gene set Fungi (290 total number of core genes queries against).
e. The completed genome assemblies (including those not previously published; HGAP3_CRT assembler) are available at https://doi.org/10.6084/m9.figshare.7346711.v1 (Nguyen, et al., 2022). Raw PacBio reads have been deposited in the Sequence Read Archive as BioProject PRJNA622402.
f. Following the sequencing of strain 8817 (*N. hispaniola*), the sum of contig lengths is 42,505,676 bp. However, we detected that there was about 1 Mbp of bacterial sequence contamination that resulted in 149 contigs. We removed 122 contigs that were of bacterial origin and 1 contig that was the PacBio rolling circle control, leaving 26 contigs that remain in the final assembly.
g. ID numbers from D Jacobson's personal collection (Jacobson et al., 2006).
h. BUSCO for the reference genome for *N. crassa* (GSE71024_or74a_12; genome length: 41,037,538 bp in 20 contigs) is 99.7%. N50 is 6,000,761 bp

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Sun, Y., et al. Large-scale suppression of recombination predates genomic rearrangements in Neurospora tetrasperma. Nature Communications 8(1): 1140 (2017).
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Svedberg, J., et al. An introgressed gene causes meiotic drive in Neurospora sitophila. Proceedings of the National Academy of Sciences 118 (2021).

**Table S2.** Genomic transposable element content for 18 *Neurospora* strains.

| Species name | Genome identifier | Genome length (bp) | Interspersed Repeats length (bp) | Interspersed Repeats (%) | Percent of genome | | | | | | | Length of sequences | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | LTR | LINE | SINE | DNA | Unclassified | Simple Repeats | Low Complexity | LTR | LINE | SINE | DNA | Unclassified | Simple Repeats | Low Complexity |
| N. tetrasperma L6 | 2508 | 39240259 | 3516218 | 8.96 | 5.17 | 1.04 | 0.06 | 0.41 | 2.28 | 1.63 | 0.26 | 2027686 | 407065 | 23797 | 162443 | 895227 | 638720 | 101802 |
| N.tetrasperma L6 | 2509 | 39220604 | 3196702 | 8.15 | 4.56 | 1.01 | 0.07 | 0.37 | 2.15 | 1.56 | 0.25 | 1786706 | 395781 | 25628 | 144879 | 843708 | 612684 | 98039 |
| N. tetrasperma L9 | 10752pb | 38575072 | 3476437 | 9.01 | 5.27 | 1.05 | 0.07 | 0.37 | 2.26 | 1.64 | 0.27 | 2032992 | 403992 | 25144 | 142676 | 871633 | 630744 | 102591 |
| N. tetrasperma L7 | 9045pb | 39009030 | 3393923 | 8.7 | 5.18 | 0.86 | 0.07 | 0.39 | 2.2 | 1.63 | 0.26 | 2021269 | 336633 | 25599 | 150593 | 859829 | 635864 | 102278 |
| N. tetrasperma L7 | 9046pb | 38902778 | 3452713 | 8.88 | 5.03 | 1.18 | 0.07 | 0.37 | 2.23 | 1.64 | 0.26 | 1958563 | 458549 | 25707 | 143025 | 866869 | 637179 | 102614 |
| N. tetrasperma L8 | 2503pb | 38526578 | 2938288 | 7.63 | 3.82 | 1.06 | 0.07 | 0.33 | 2.35 | 1.66 | 0.27 | 1471521 | 408086 | 25287 | 127498 | 905896 | 638931 | 103115 |
| N. tetrasperma L8 | 2504pb | 38582854 | 2924517 | 7.58 | 3.74 | 1.18 | 0.07 | 0.41 | 2.19 | 1.66 | 0.26 | 1442393 | 454632 | 25388 | 157693 | 844411 | 639906 | 100371 |
| N. hispaniola | 8817pb | 41481169 | 5618515 | 13.54 | 8.68 | 1.5 | 0.06 | 0.75 | 2.56 | 1.77 | 0.26 | 3601704 | 621440 | 25539 | 309841 | 1059991 | 733141 | 108558 |
| N. sitophila | 5940pb | 37949446 | 3578890 | 9.43 | 4.96 | 1.87 | 0.07 | 0.69 | 1.84 | 1.76 | 0.26 | 1884175 | 709294 | 25109 | 260884 | 699428 | 667099 | 97090 |
| N. sitophila | 5941pb | 38368316 | 3578710 | 9.33 | 4.82 | 1.91 | 0.07 | 0.71 | 1.82 | 1.76 | 0.25 | 1850457 | 733884 | 25053 | 271302 | 698014 | 675999 | 97529 |
| N. sitophila | W1426pb | 37879917 | 3452152 | 9.11 | 4.34 | 2.04 | 0.07 | 0.51 | 2.16 | 1.72 | 0.25 | 1643845 | 772772 | 25033 | 192900 | 817602 | 650821 | 96186 |
| N. sitophila | W1434pb | 39058735 | 4254038 | 10.89 | 6.1 | 1.91 | 0.06 | 0.76 | 2.07 | 1.73 | 0.25 | 2381859 | 744544 | 25343 | 295466 | 806826 | 676423 | 99088 |
| N. crassa | GSE71024 | 41037538 | 5342783 | 13.02 | 7.11 | 1.83 | 0.06 | 1.1 | 2.91 | 1.85 | 0.28 | 2918994 | 750422 | 25746 | 452809 | 1194812 | 758159 | 114473 |
| N. intermedia | 8767pb | 37915042 | 3173439 | 8.37 | 4.87 | 1.11 | 0.07 | 0.24 | 2.08 | 1.77 | 0.27 | 1847606 | 421962 | 25546 | 90571 | 787754 | 669584 | 100533 |
| N. intermedia | 8807pb | 41318598 | 5154185 | 12.47 | 7.11 | 1.85 | 0.06 | 0.79 | 2.66 | 1.83 | 0.28 | 2938362 | 765932 | 25424 | 325566 | 1098901 | 754422 | 113662 |
| N. intermedia | 8761pb | 41248059 | 5101337 | 12.37 | 7.73 | 1.4 | 0.06 | 0.65 | 2.53 | 1.75 | 0.28 | 3186734 | 577175 | 25559 | 266317 | 1045552 | 722814 | 113612 |
| N. metzenbergii | 10397pb | 43917869 | 7656512 | 17.43 | 8.77 | 2.74 | 0.06 | 1.17 | 4.69 | 1.61 | 0.25 | 3853784 | 1204052 | 25872 | 514795 | 2058009 | 705118 | 111472 |
| N. discreta | 8579pb | 37801234 | 3954853 | 10.46 | 6.55 | 0.94 | 0.07 | 0.46 | 2.45 | 1.6 | 0.25 | 2476627 | 355849 | 24975 | 172761 | 924641 | 603076 | 93349 |

**Table S3.** Counts of *Neurospora* pairwise lineage-specific transposable elements. The table is read as: genome of Species 1 has X lineage-specific insertions with respect to the genome of Species 2.

| Genome | | Species 2 | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | N.tet_L6_2508 | N.tet_L6_2509 | N.tet_L9_10752 | N.tet_L7_9045 | N.tet_L7_9046 | N.tet_L8_2503 | N.tet_L8_2504 | N.his_8817 | N.sit_5940 | N.sit_5941 | N.sit_W1426 | N.sit_W1434 | N.cra_2489 | N.int_8767 | N.int_8807 | N.int_8761 | N.met_10397 | N.dis_8579 |
| Species 1 | N.tet_L6_2508 | NA | 5 | 2 | 4 | 4 | 3 | 4 | 1 | 2 | 4 | 2 | 3 | 2 | 1 | 1 | 2 | 1 | 3 |
| | N.tet_L6_2509 | 8 | NA | 6 | 8 | 7 | 9 | 6 | 1 | 2 | 3 | 0 | 1 | 1 | 0 | 0 | 3 | 2 | 0 |
| | N.tet_L9_10752 | 4 | 5 | NA | 3 | 1 | 5 | 3 | 5 | 1 | 2 | 1 | 3 | 3 | 1 | 2 | 0 | 3 | 0 |
| | N.tet_L7_9045 | 4 | 3 | 7 | NA | 10 | 7 | 6 | 3 | 2 | 1 | 1 | 0 | 1 | 3 | 4 | 0 | 5 | 0 |
| | N.tet_L7_9046 | 2 | 2 | 4 | 9 | NA | 7 | 3 | 1 | 3 | 2 | 3 | 2 | 1 | 3 | 2 | 3 | 4 | 1 |
| | N.tet_L8_2503 | 4 | 5 | 2 | 5 | 4 | NA | 9 | 4 | 1 | 1 | 0 | 1 | 1 | 2 | 1 | 1 | 3 | 0 |
| | N.tet_L8_2504 | 5 | 5 | 2 | 4 | 3 | 9 | NA | 3 | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 |
| | N.his_8817 | 1 | 3 | 3 | 3 | 6 | 2 | 2 | NA | 1 | 2 | 3 | 2 | 4 | 4 | 6 | 3 | 3 | 1 |
| | N.sit_5940 | 2 | 1 | 2 | 2 | 2 | 0 | 2 | 2 | NA | 13 | 8 | 11 | 0 | 0 | 1 | 1 | 2 | 0 |
| | N.sit_5941 | 0 | 0 | 0 | 1 | 1 | 2 | 2 | 0 | 17 | NA | 12 | 15 | 0 | 1 | 0 | 1 | 2 | 0 |
| | N.sit_W1426 | 3 | 3 | 4 | 2 | 3 | 4 | 2 | 5 | 17 | 16 | NA | 23 | 2 | 5 | 4 | 4 | 1 | 1 |
| | N.sit_W1434 | 1 | 4 | 5 | 7 | 6 | 1 | 2 | 2 | 14 | 17 | 13 | NA | 3 | 7 | 4 | 5 | 3 | 1 |
| | N.cra_2489 | 8 | 5 | 7 | 5 | 4 | 2 | 3 | 6 | 4 | 1 | 4 | 4 | NA | 12 | 10 | 9 | 6 | 3 |
| | N.int_8767 | 1 | 2 | 3 | 2 | 1 | 1 | 1 | 2 | 0 | 1 | 2 | 1 | 3 | NA | 3 | 2 | 0 | 0 |
| | N.int_8807 | 5 | 3 | 3 | 4 | 4 | 4 | 6 | 2 | 4 | 4 | 4 | 6 | 7 | 5 | NA | 2 | 5 | 1 |
| | N.int_8761 | 10 | 5 | 8 | 5 | 7 | 13 | 11 | 5 | 5 | 5 | 6 | 3 | 8 | 3 | 10 | NA | 3 | 0 |
| | N.met_10397 | 14 | 3 | 6 | 11 | 9 | 4 | 3 | 5 | 9 | 9 | 3 | 1 | 6 | 8 | 5 | 9 | NA | 5 |
| | N.dis_8579 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 2 | NA |

| | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Table S4.** Number of insertions by transposable element subfamily in each pairwise comparison in *Neurospora.* | | | | | | | | | | | | | | |
| 2 | Comparison | ncra_LTR_104 | ncra_LTR_69 | Tad1-1 | ncra_Tad1_01 | ntet_LTR_45 | ncra_LTR_53 | ntet_Tad1_01 | ncra_Tad1_06 | ntet_LTR_28 | ncra_LTR_63 | Tad3-2 | ncra_Gypsy_10 | ntet_LTR_35 | ncra_LTR_05 |
| 3 | 10397_10752 | 2 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 10397_2503 | 0 | 0 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 10397_2504 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 10397_2508 | 1 | 3 | 1 | 7 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 10397_2509 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 10397_8579 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 |
| 9 | 10397_8761 | 1 | 4 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 10 | 10397_8767 | 3 | 2 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| 11 | 10397_8807 | 0 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 10397_8817 | 1 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 10397_9045 | 1 | 2 | 2 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 14 | 10397_9046 | 1 | 2 | 1 | 4 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 15 | 10397_5940 | 2 | 4 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16 | 10397_5941 | 2 | 5 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17 | 10397_2489 | 2 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 18 | 10397_W1426 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 19 | 10397_W1434 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 20 | 10752_10397 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 21 | 10752_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 22 | 10752_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 23 | 10752_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 24 | 10752_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 25 | 10752_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 26 | 10752_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 27 | 10752_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 28 | 10752_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 29 | 10752_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| 30 | 10752_9045 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 31 | 10752_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 32 | 10752_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 33 | 10752_5941 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 34 | 10752_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 35 | 10752_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 36 | 10752_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |

| | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Table S4.** Number of insertions by transposable element subfamily in each pairwise comparison in *Neurospora.* | | | | | | | | | | | | | | |
| 2 | Comparison | ncra_LTR_104 | ncra_LTR_69 | Tad1-1 | ncra_Tad1_01 | ntet_LTR_45 | ncra_LTR_53 | ntet_Tad1_01 | ncra_Tad1_06 | ntet_LTR_28 | ncra_LTR_63 | Tad3-2 | ncra_Gypsy_10 | ntet_LTR_35 | ncra_LTR_05 |
| 37 | 2503_10397 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 38 | 2503_10752 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 39 | 2503_2504 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 40 | 2503_2508 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 41 | 2503_2509 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 42 | 2503_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 43 | 2503_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 44 | 2503_8767 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 45 | 2503_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 46 | 2503_8817 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 47 | 2503_9045 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 48 | 2503_9046 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 49 | 2503_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 50 | 2503_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 51 | 2503_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 52 | 2503_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 53 | 2503_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 54 | 2504_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 55 | 2504_10752 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 56 | 2504_2503 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 57 | 2504_2508 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 58 | 2504_2509 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 59 | 2504_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 60 | 2504_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 61 | 2504_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 62 | 2504_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 63 | 2504_8817 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 64 | 2504_9045 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 65 | 2504_9046 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 66 | 2504_5940 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 67 | 2504_5941 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 68 | 2504_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 69 | 2504_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 70 | 2504_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Table S4.** Number of insertions by transposable element subfamily in each pairwise comparison in *Neurospora.* | | | | | | | | | | | | | | |
| 2 | Comparison | ncra_LTR_104 | ncra_LTR_69 | Tad1-1 | ncra_Tad1_01 | ntet_LTR_45 | ncra_LTR_53 | ntet_Tad1_01 | ncra_Tad1_06 | ntet_LTR_28 | ncra_LTR_63 | Tad3-2 | ncra_Gypsy_10 | ntet_LTR_35 | ncra_LTR_05 |
| 71 | 2508_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 72 | 2508_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 73 | 2508_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 74 | 2508_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 75 | 2508_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 76 | 2508_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 77 | 2508_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 78 | 2508_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 79 | 2508_8807 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 80 | 2508_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 81 | 2508_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 82 | 2508_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 83 | 2508_5940 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 84 | 2508_5941 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 85 | 2508_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 86 | 2508_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 87 | 2508_W1434 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 88 | 2509_10397 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 89 | 2509_10752 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 90 | 2509_2503 | 1 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 91 | 2509_2504 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 92 | 2509_2508 | 0 | 1 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 93 | 2509_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 94 | 2509_8761 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 95 | 2509_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 96 | 2509_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 97 | 2509_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 98 | 2509_9045 | 1 | 1 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 99 | 2509_9046 | 1 | 1 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100 | 2509_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 101 | 2509_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 102 | 2509_2489 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 103 | 2509_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 104 | 2509_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 105 | 5940_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 106 | 5940_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 107 | 5940_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 108 | 5940_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 109 | 5940_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Table S4.** Number of insertions by transposable element subfamily in each pairwise comparison in *Neurospora.* | | | | | | | | | | | | | | |
| 2 | Comparison | ncra_LTR_104 | ncra_LTR_69 | Tad1-1 | ncra_Tad1_01 | ntet_LTR_45 | ncra_LTR_53 | ntet_Tad1_01 | ncra_Tad1_06 | ntet_LTR_28 | ncra_LTR_63 | Tad3-2 | ncra_Gypsy_10 | ntet_LTR_35 | ncra_LTR_05 |
| 110 | 8579_10397 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 111 | 8579_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 112 | 8579_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 113 | 8579_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 114 | 8579_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 115 | 8579_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 116 | 8579_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 117 | 8579_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 118 | 8579_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 119 | 8579_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 120 | 8579_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 121 | 8579_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 122 | 8579_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 123 | 8579_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 124 | 8579_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 125 | 8579_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 126 | 8579_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 127 | 8579_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 128 | 8761_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 129 | 8761_10752 | 0 | 1 | 0 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 130 | 8761_2503 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 |
| 131 | 8761_2504 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| 132 | 8761_2508 | 0 | 0 | 0 | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| 133 | 8761_2509 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 134 | 8761_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 135 | 8761_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 136 | 8761_8767 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 137 | 8761_8807 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 138 | 8761_8817 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 139 | 8761_9045 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 140 | 8761_9046 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 141 | 8761_5940 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 142 | 8761_5941 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 143 | 8761_2489 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 144 | 8761_W1426 | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 145 | 8761_W1434 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Table S4.** Number of insertions by transposable element subfamily in each pairwise comparison in *Neurospora.* | | | | | | | | | | | | | | |
| 2 | Comparison | ncra_LTR_104 | ncra_LTR_69 | Tad1-1 | ncra_Tad1_01 | ntet_LTR_45 | ncra_LTR_53 | ntet_Tad1_01 | ncra_Tad1_06 | ntet_LTR_28 | ncra_LTR_63 | Tad3-2 | ncra_Gypsy_10 | ntet_LTR_35 | ncra_LTR_05 |
| 146 | 8767_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 147 | 8767_10752 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 148 | 8767_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 149 | 8767_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 150 | 8767_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 151 | 8767_2509 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 152 | 8767_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 153 | 8767_8761 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 154 | 8767_8807 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 155 | 8767_8817 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 156 | 8767_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 157 | 8767_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 158 | 8767_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 159 | 8767_5941 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 160 | 8767_2489 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 161 | 8767_W1426 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 162 | 8767_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 163 | 8807_10397 | 0 | 0 | 0 | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 164 | 8807_10752 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 165 | 8807_2503 | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 166 | 8807_2504 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 167 | 8807_2508 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 168 | 8807_2509 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 169 | 8807_8579 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 170 | 8807_8761 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 171 | 8807_8767 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 172 | 8807_8817 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 173 | 8807_9045 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 174 | 8807_9046 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 175 | 8807_5940 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 176 | 8807_5941 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 177 | 8807_2489 | 0 | 0 | 1 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 178 | 8807_W1426 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 179 | 8807_W1434 | 0 | 0 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Table S4.** Number of insertions by transposable element subfamily in each pairwise comparison in *Neurospora.* | | | | | | | | | | | | | | |
| 2 | Comparison | ncra_LTR_104 | ncra_LTR_69 | Tad1-1 | ncra_Tad1_01 | ntet_LTR_45 | ncra_LTR_53 | ntet_Tad1_01 | ncra_Tad1_06 | ntet_LTR_28 | ncra_LTR_63 | Tad3-2 | ncra_Gypsy_10 | ntet_LTR_35 | ncra_LTR_05 |
| 180 | 8817_10397 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 181 | 8817_10752 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 182 | 8817_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 183 | 8817_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 184 | 8817_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 185 | 8817_2509 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 186 | 8817_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 187 | 8817_8579 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 188 | 8817_8761 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 189 | 8817_8767 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 190 | 8817_8807 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 191 | 8817_9045 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 192 | 8817_9046 | 0 | 0 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 193 | 8817_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 194 | 8817_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 195 | 8817_2489 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 196 | 8817_W1426 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 197 | 8817_W1434 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 198 | 9045_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 199 | 9045_10752 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 200 | 9045_2503 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 201 | 9045_2504 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 202 | 9045_2508 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 203 | 9045_2509 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 204 | 9045_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 205 | 9045_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 206 | 9045_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 207 | 9045_8767 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 208 | 9045_8807 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 209 | 9045_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 210 | 9045_9046 | 0 | 0 | 0 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 211 | 9045_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 212 | 9045_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 213 | 9045_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 214 | 9045_W1426 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 215 | 9045_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Table S4.** Number of insertions by transposable element subfamily in each pairwise comparison in *Neurospora*. | | | | | | | | | | | | | | |
| 2 | Comparison | ncra_LTR_104 | ncra_LTR_69 | Tad1-1 | ncra_Tad1_01 | ntet_LTR_45 | ncra_LTR_53 | ntet_Tad1_01 | ncra_Tad1_06 | ntet_LTR_28 | ncra_LTR_63 | Tad3-2 | ncra_Gypsy_10 | ntet_LTR_35 | ncra_LTR_05 |
| 216 | 9046_10397 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 217 | 9046_10752 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 218 | 9046_2503 | 0 | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 219 | 9046_2504 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 220 | 9046_2508 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 221 | 9046_2509 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 222 | 9046_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 223 | 9046_8761 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 224 | 9046_8767 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 225 | 9046_8807 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 226 | 9046_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 227 | 9046_9045 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 228 | 9046_5940 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 229 | 9046_5941 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 230 | 9046_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 231 | 9046_W1426 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 232 | 9046_W1434 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 233 | 5940_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 234 | 5940_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 235 | 5940_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 236 | 5940_2504 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 237 | 5940_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 238 | 5940_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 239 | 5940_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 240 | 5940_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 241 | 5940_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 242 | 5940_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 243 | 5940_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 244 | 5940_9045 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 245 | 5940_9046 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 246 | 5940_5941 | 0 | 0 | 1 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 247 | 5940_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 248 | 5940_W1426 | 0 | 0 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 249 | 5940_W1434 | 0 | 0 | 1 | 6 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 |

| | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Table S4.** Number of insertions by transposable element subfamily in each pairwise comparison in *Neurospora.* | | | | | | | | | | | | | | |
| 2 | Comparison | ncra_LTR_104 | ncra_LTR_69 | Tad1-1 | ncra_Tad1_01 | ntet_LTR_45 | ncra_LTR_53 | ntet_Tad1_01 | ncra_Tad1_06 | ntet_LTR_28 | ncra_LTR_63 | Tad3-2 | ncra_Gypsy_10 | ntet_LTR_35 | ncra_LTR_05 |
| 250 | 5941_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 251 | 5941_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 252 | 5941_2503 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 253 | 5941_2504 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 254 | 5941_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 255 | 5941_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 256 | 5941_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 257 | 5941_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 258 | 5941_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 259 | 5941_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 260 | 5941_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 261 | 5941_9045 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 262 | 5941_9046 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 263 | 5941_5940 | 0 | 0 | 1 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 264 | 5941_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 265 | 5941_W1426 | 0 | 0 | 1 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 266 | 5941_W1434 | 0 | 0 | 1 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 267 | 2489_10397 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 268 | 2489_10752 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 269 | 2489_2503 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 270 | 2489_2504 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 271 | 2489_2508 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 272 | 2489_2509 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 273 | 2489_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 274 | 2489_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 275 | 2489_8761 | 0 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 276 | 2489_8767 | 0 | 0 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 277 | 2489_8807 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 278 | 2489_8817 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 279 | 2489_9045 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 280 | 2489_9046 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 281 | 2489_5940 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 282 | 2489_5941 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 283 | 2489_W1426 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 284 | 2489_W1434 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Table S4.** Number of insertions by transposable element subfamily in each pairwise comparison in *Neurospora.* | | | | | | | | | | | | | | |
| 2 | Comparison | ncra_LTR_104 | ncra_LTR_69 | Tad1-1 | ncra_Tad1_01 | ntet_LTR_45 | ncra_LTR_53 | ntet_Tad1_01 | ncra_Tad1_06 | ntet_LTR_28 | ncra_LTR_63 | Tad3-2 | ncra_Gypsy_10 | ntet_LTR_35 | ncra_LTR_05 |
| 285 | W1426_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 286 | W1426_10752 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 287 | W1426_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 288 | W1426_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 289 | W1426_2508 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 290 | W1426_2509 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 291 | W1426_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 292 | W1426_8761 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 293 | W1426_8767 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 294 | W1426_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 295 | W1426_8817 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 296 | W1426_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 297 | W1426_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 298 | W1426_5940 | 0 | 0 | 1 | 8 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 |
| 299 | W1426_5941 | 0 | 0 | 1 | 8 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 |
| 300 | W1426_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 301 | W1426_W1434 | 0 | 0 | 2 | 10 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 |
| 302 | W1434_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 303 | W1434_10752 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 304 | W1434_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 305 | W1434_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 306 | W1434_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 307 | W1434_2509 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 308 | W1434_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 309 | W1434_8761 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 |
| 310 | W1434_8767 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 311 | W1434_8807 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 312 | W1434_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 313 | W1434_9045 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 314 | W1434_9046 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 315 | W1434_5940 | 0 | 0 | 1 | 7 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 |
| 316 | W1434_5941 | 0 | 0 | 1 | 7 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 |
| 317 | W1434_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 318 | W1434_W1426 | 1 | 0 | 1 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 319 | Total | 26 | 45 | 40 | 353 | 20 | 19 | 43 | 33 | 4 | 7 | 22 | 1 | 9 | 12 |

| | A | P | Q | R | S | T | U | V | W | X | Y | Z | AA | AB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Table S4.** Number of ir | | | | | | | | | | | | | |
| 2 | Comparison | ntet_Gypsy_01 | ntet_LTR_14 | ntet_LTR_18 | ncra_LTR_04 | ncra_LTR_75 | ntet_LTR_37 | ncra_LTR_116 | ncra_LTR_101 | ncra_LTR_64 | ncra_Gypsy_01 | ncra_Gypsy_08 | ntet_LTR_27 | ntet_Tad1_02 |
| 3 | 10397_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 10397_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 10397_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 10397_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 10397_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 10397_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 10397_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 10397_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 10397_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 10397_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 10397_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 10397_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 10397_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16 | 10397_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17 | 10397_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 18 | 10397_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 19 | 10397_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 20 | 10752_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 21 | 10752_2503 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 22 | 10752_2504 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 23 | 10752_2508 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 24 | 10752_2509 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 25 | 10752_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 26 | 10752_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 27 | 10752_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 28 | 10752_8807 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 29 | 10752_8817 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 30 | 10752_9045 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 31 | 10752_9046 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 32 | 10752_5940 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 33 | 10752_5941 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 34 | 10752_2489 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 35 | 10752_W1426 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 36 | 10752_W1434 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |

| | A | P | Q | R | S | T | U | V | W | X | Y | Z | AA | AB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Table S4.** Number of ir | | | | | | | | | | | | | |
| 2 | Comparison | ntet_Gypsy_01 | ntet_LTR_14 | ntet_LTR_18 | ncra_LTR_04 | ncra_LTR_75 | ntet_LTR_37 | ncra_LTR_116 | ncra_LTR_101 | ncra_LTR_64 | ncra_Gypsy_01 | ncra_Gypsy_08 | ntet_LTR_27 | ntet_Tad1_02 |
| 37 | 2503_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 38 | 2503_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 39 | 2503_2504 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 |
| 40 | 2503_2508 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 41 | 2503_2509 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 42 | 2503_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 43 | 2503_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 44 | 2503_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 45 | 2503_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 46 | 2503_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |
| 47 | 2503_9045 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |
| 48 | 2503_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |
| 49 | 2503_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 50 | 2503_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 51 | 2503_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 52 | 2503_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 53 | 2503_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 54 | 2504_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 55 | 2504_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 56 | 2504_2503 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 |
| 57 | 2504_2508 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 58 | 2504_2509 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 59 | 2504_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 60 | 2504_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 61 | 2504_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 62 | 2504_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 63 | 2504_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 64 | 2504_9045 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 65 | 2504_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 66 | 2504_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 67 | 2504_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 68 | 2504_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 69 | 2504_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 70 | 2504_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | A | P | Q | R | S | T | U | V | W | X | Y | Z | AA | AB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Table S4.** Number of ir | | | | | | | | | | | | | |
| 2 | Comparison | ntet_Gypsy_01 | ntet_LTR_14 | ntet_LTR_18 | ncra_LTR_04 | ncra_LTR_75 | ntet_LTR_37 | ncra_LTR_116 | ncra_LTR_101 | ncra_LTR_64 | ncra_Gypsy_01 | ncra_Gypsy_08 | ntet_LTR_27 | ntet_Tad1_02 |
| 71 | 2508_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 72 | 2508_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 73 | 2508_2503 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 74 | 2508_2504 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 75 | 2508_2509 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 76 | 2508_8579 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 77 | 2508_8761 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 78 | 2508_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 79 | 2508_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 80 | 2508_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 81 | 2508_9045 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 82 | 2508_9046 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 83 | 2508_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 84 | 2508_5941 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 85 | 2508_2489 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 86 | 2508_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 87 | 2508_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 88 | 2509_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 89 | 2509_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 |
| 90 | 2509_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 91 | 2509_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 92 | 2509_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 93 | 2509_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 94 | 2509_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 95 | 2509_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 96 | 2509_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 97 | 2509_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 98 | 2509_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 99 | 2509_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100 | 2509_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 101 | 2509_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 102 | 2509_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 103 | 2509_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 104 | 2509_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 105 | 5940_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 106 | 5940_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 107 | 5940_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 108 | 5940_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 109 | 5940_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | A | P | Q | R | S | T | U | V | W | X | Y | Z | AA | AB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Table S4.** Number of ir | | | | | | | | | | | | | |
| 2 | Comparison | ntet_Gypsy_01 | ntet_LTR_14 | ntet_LTR_18 | ncra_LTR_04 | ncra_LTR_75 | ntet_LTR_37 | ncra_LTR_116 | ncra_LTR_101 | ncra_LTR_64 | ncra_Gypsy_01 | ncra_Gypsy_08 | ntet_LTR_27 | ntet_Tad1_02 |
| 110 | 8579_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 111 | 8579_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 112 | 8579_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 113 | 8579_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 114 | 8579_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 115 | 8579_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 116 | 8579_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 117 | 8579_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 118 | 8579_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 119 | 8579_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 120 | 8579_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 121 | 8579_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 122 | 8579_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 123 | 8579_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 124 | 8579_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 125 | 8579_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 126 | 8579_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 127 | 8579_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 128 | 8761_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 129 | 8761_10752 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 130 | 8761_2503 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 131 | 8761_2504 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 132 | 8761_2508 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 133 | 8761_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 134 | 8761_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 135 | 8761_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 136 | 8761_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 137 | 8761_8807 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 138 | 8761_8817 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 139 | 8761_9045 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 140 | 8761_9046 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 141 | 8761_5940 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 142 | 8761_5941 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 143 | 8761_2489 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 |
| 144 | 8761_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 145 | 8761_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | A | P | Q | R | S | T | U | V | W | X | Y | Z | AA | AB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Table S4.** Number of ir | | | | | | | | | | | | | |
| 2 | Comparison | ntet_Gypsy_01 | ntet_LTR_14 | ntet_LTR_18 | ncra_LTR_04 | ncra_LTR_75 | ntet_LTR_37 | ncra_LTR_116 | ncra_LTR_101 | ncra_LTR_64 | ncra_Gypsy_01 | ncra_Gypsy_08 | ntet_LTR_27 | ntet_Tad1_02 |
| 146 | 8767_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 147 | 8767_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 148 | 8767_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 149 | 8767_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 150 | 8767_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 151 | 8767_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 152 | 8767_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 153 | 8767_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 154 | 8767_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 155 | 8767_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 156 | 8767_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 157 | 8767_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 158 | 8767_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 159 | 8767_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 160 | 8767_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 161 | 8767_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 162 | 8767_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 163 | 8807_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 164 | 8807_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 165 | 8807_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 166 | 8807_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 167 | 8807_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 168 | 8807_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 169 | 8807_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 170 | 8807_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 171 | 8807_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 172 | 8807_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 173 | 8807_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 174 | 8807_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 175 | 8807_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 176 | 8807_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 177 | 8807_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 178 | 8807_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 179 | 8807_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | A | P | Q | R | S | T | U | V | W | X | Y | Z | AA | AB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Table S4.** Number of ir | | | | | | | | | | | | | |
| 2 | Comparison | ntet_Gypsy_01 | ntet_LTR_14 | ntet_LTR_18 | ncra_LTR_04 | ncra_LTR_75 | ntet_LTR_37 | ncra_LTR_116 | ncra_LTR_101 | ncra_LTR_64 | ncra_Gypsy_01 | ncra_Gypsy_08 | ntet_LTR_27 | ntet_Tad1_02 |
| 180 | 8817_10397 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 181 | 8817_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 182 | 8817_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 183 | 8817_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |
| 184 | 8817_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 185 | 8817_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 186 | 8817_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 187 | 8817_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 188 | 8817_8761 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 189 | 8817_8767 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 190 | 8817_8807 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 191 | 8817_9045 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 192 | 8817_9046 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 193 | 8817_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 194 | 8817_5941 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 195 | 8817_2489 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 196 | 8817_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 197 | 8817_W1434 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 198 | 9045_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 199 | 9045_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 200 | 9045_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 201 | 9045_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 202 | 9045_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 203 | 9045_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 204 | 9045_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 205 | 9045_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 206 | 9045_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 207 | 9045_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 208 | 9045_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 209 | 9045_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 210 | 9045_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 211 | 9045_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 212 | 9045_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 213 | 9045_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 214 | 9045_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 215 | 9045_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | A | P | Q | R | S | T | U | V | W | X | Y | Z | AA | AB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Table S4.** Number of ir | | | | | | | | | | | | | |
| 2 | Comparison | ntet_Gypsy_01 | ntet_LTR_14 | ntet_LTR_18 | ncra_LTR_04 | ncra_LTR_75 | ntet_LTR_37 | ncra_LTR_116 | ncra_LTR_101 | ncra_LTR_64 | ncra_Gypsy_01 | ncra_Gypsy_08 | ntet_LTR_27 | ntet_Tad1_02 |
| 216 | 9046_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 217 | 9046_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 218 | 9046_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 219 | 9046_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 220 | 9046_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 221 | 9046_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 222 | 9046_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 223 | 9046_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 224 | 9046_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 225 | 9046_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 226 | 9046_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 227 | 9046_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 228 | 9046_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 229 | 9046_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 230 | 9046_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 231 | 9046_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 232 | 9046_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 233 | 5940_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 234 | 5940_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 235 | 5940_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 236 | 5940_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 237 | 5940_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 238 | 5940_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 239 | 5940_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 240 | 5940_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 241 | 5940_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 242 | 5940_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 243 | 5940_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 244 | 5940_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 245 | 5940_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 246 | 5940_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 247 | 5940_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 248 | 5940_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 249 | 5940_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |

| | A | P | Q | R | S | T | U | V | W | X | Y | Z | AA | AB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Table S4.** Number of ir | | | | | | | | | | | | | |
| 2 | Comparison | ntet_Gypsy_01 | ntet_LTR_14 | ntet_LTR_18 | ncra_LTR_04 | ncra_LTR_75 | ntet_LTR_37 | ncra_LTR_116 | ncra_LTR_101 | ncra_LTR_64 | ncra_Gypsy_01 | ncra_Gypsy_08 | ntet_LTR_27 | ntet_Tad1_02 |
| 250 | 5941_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 251 | 5941_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 252 | 5941_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 253 | 5941_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 254 | 5941_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 255 | 5941_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 256 | 5941_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 257 | 5941_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 258 | 5941_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 259 | 5941_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 260 | 5941_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 261 | 5941_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 262 | 5941_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 263 | 5941_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 264 | 5941_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 265 | 5941_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 266 | 5941_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 267 | 2489_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 268 | 2489_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 269 | 2489_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 270 | 2489_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 271 | 2489_2508 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 272 | 2489_2509 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 273 | 2489_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 274 | 2489_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 275 | 2489_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 276 | 2489_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 277 | 2489_8807 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 278 | 2489_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 279 | 2489_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 280 | 2489_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 281 | 2489_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 282 | 2489_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 283 | 2489_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 284 | 2489_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | A | P | Q | R | S | T | U | V | W | X | Y | Z | AA | AB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Table S4.** Number of ir | | | | | | | | | | | | | |
| 2 | Comparison | ntet_Gypsy_01 | ntet_LTR_14 | ntet_LTR_18 | ncra_LTR_04 | ncra_LTR_75 | ntet_LTR_37 | ncra_LTR_116 | ncra_LTR_101 | ncra_LTR_64 | ncra_Gypsy_01 | ncra_Gypsy_08 | ntet_LTR_27 | ntet_Tad1_02 |
| 285 | W1426_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 286 | W1426_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 287 | W1426_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 288 | W1426_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 289 | W1426_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 290 | W1426_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 291 | W1426_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 292 | W1426_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 293 | W1426_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 294 | W1426_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 295 | W1426_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 296 | W1426_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 297 | W1426_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 298 | W1426_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 1 |
| 299 | W1426_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 1 |
| 300 | W1426_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 301 | W1426_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 1 |
| 302 | W1434_10397 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 303 | W1434_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 304 | W1434_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 305 | W1434_2504 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 306 | W1434_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 307 | W1434_2509 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 308 | W1434_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 309 | W1434_8761 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 310 | W1434_8767 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 311 | W1434_8807 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 312 | W1434_8817 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 313 | W1434_9045 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 314 | W1434_9046 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 315 | W1434_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 316 | W1434_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 317 | W1434_2489 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 318 | W1434_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 319 | Total | 6 | 6 | 35 | 4 | 27 | 15 | 7 | 12 | 9 | 27 | 7 | 18 | 15 |

| | A | AC | AD | AE | AF | AG | AH | AI | AJ | AK | AL | AM | AN | AO | AP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Table S4.** Number of ir | | | | | | | | | | | | | | |
| 2 | Comparison | ncra_LTR_41 | ncra_LTR_71 | ntet_LTR_15 | ntet_LTR_39 | ntet_LTR_25 | ncra_LTR_49 | ntet_LTR_19 | ntet_LTR_05 | ndisc_LTR_62 | ndisc_LTR_53 | ncra_LTR_76 | ncra_LTR_115 | ncra_LTR_38 | ncra_LTR_58 |
| 3 | 10397_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 10397_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 10397_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 10397_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 10397_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 10397_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 10397_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 10397_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 10397_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 10397_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 10397_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 10397_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 10397_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16 | 10397_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17 | 10397_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 18 | 10397_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 19 | 10397_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 20 | 10752_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 21 | 10752_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 22 | 10752_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 23 | 10752_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 24 | 10752_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 25 | 10752_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 26 | 10752_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 27 | 10752_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 28 | 10752_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 29 | 10752_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 30 | 10752_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 31 | 10752_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 32 | 10752_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 33 | 10752_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 34 | 10752_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 35 | 10752_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 36 | 10752_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | A | AC | AD | AE | AF | AG | AH | AI | AJ | AK | AL | AM | AN | AO | AP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Table S4.** Number of ir | | | | | | | | | | | | | | |
| 2 | Comparison | ncra_LTR_41 | ncra_LTR_71 | ntet_LTR_15 | ntet_LTR_39 | ntet_LTR_25 | ncra_LTR_49 | ntet_LTR_19 | ntet_LTR_05 | ndisc_LTR_62 | ndisc_LTR_53 | ncra_LTR_76 | ncra_LTR_115 | ncra_LTR_38 | ncra_LTR_58 |
| 37 | 2503_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 38 | 2503_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 39 | 2503_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 40 | 2503_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 41 | 2503_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 42 | 2503_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 43 | 2503_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 44 | 2503_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 45 | 2503_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 46 | 2503_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 47 | 2503_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 48 | 2503_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 49 | 2503_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 50 | 2503_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 51 | 2503_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 52 | 2503_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 53 | 2503_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 54 | 2504_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 55 | 2504_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 56 | 2504_2503 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 57 | 2504_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 58 | 2504_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 59 | 2504_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 60 | 2504_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 61 | 2504_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 62 | 2504_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 63 | 2504_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 64 | 2504_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 65 | 2504_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 66 | 2504_5940 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 67 | 2504_5941 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 68 | 2504_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 69 | 2504_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 70 | 2504_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | A | AC | AD | AE | AF | AG | AH | AI | AJ | AK | AL | AM | AN | AO | AP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Table S4.** Number of ir | | | | | | | | | | | | | | |
| 2 | Comparison | ncra_LTR_41 | ncra_LTR_71 | ntet_LTR_15 | ntet_LTR_39 | ntet_LTR_25 | ncra_LTR_49 | ntet_LTR_19 | ntet_LTR_05 | ndisc_LTR_62 | ndisc_LTR_53 | ncra_LTR_76 | ncra_LTR_115 | ncra_LTR_38 | ncra_LTR_58 |
| 71 | 2508_10397 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 72 | 2508_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 73 | 2508_2503 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 74 | 2508_2504 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 75 | 2508_2509 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 76 | 2508_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 77 | 2508_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 78 | 2508_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 79 | 2508_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 80 | 2508_8817 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 81 | 2508_9045 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 82 | 2508_9046 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 83 | 2508_5940 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 84 | 2508_5941 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 85 | 2508_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 86 | 2508_W1426 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 87 | 2508_W1434 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 88 | 2509_10397 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 89 | 2509_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 90 | 2509_2503 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 91 | 2509_2504 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 92 | 2509_2508 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 93 | 2509_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 94 | 2509_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 95 | 2509_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 96 | 2509_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 97 | 2509_8817 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 98 | 2509_9045 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 99 | 2509_9046 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100 | 2509_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 101 | 2509_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 102 | 2509_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 103 | 2509_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 104 | 2509_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 105 | 5940_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 106 | 5940_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 107 | 5940_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 108 | 5940_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 109 | 5940_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | A | AC | AD | AE | AF | AG | AH | AI | AJ | AK | AL | AM | AN | AO | AP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Table S4.** Number of ir | | | | | | | | | | | | | | |
| 2 | Comparison | ncra_LTR_41 | ncra_LTR_71 | ntet_LTR_15 | ntet_LTR_39 | ntet_LTR_25 | ncra_LTR_49 | ntet_LTR_19 | ntet_LTR_05 | ndisc_LTR_62 | ndisc_LTR_53 | ncra_LTR_76 | ncra_LTR_115 | ncra_LTR_38 | ncra_LTR_58 |
| 110 | 8579_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 111 | 8579_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 112 | 8579_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 113 | 8579_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 114 | 8579_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 115 | 8579_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 116 | 8579_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 117 | 8579_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 118 | 8579_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 119 | 8579_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 120 | 8579_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 121 | 8579_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 122 | 8579_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 123 | 8579_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 124 | 8579_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 125 | 8579_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 126 | 8579_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 127 | 8579_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 128 | 8761_10397 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 129 | 8761_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 130 | 8761_2503 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 131 | 8761_2504 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 132 | 8761_2508 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 133 | 8761_2509 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 134 | 8761_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 135 | 8761_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 136 | 8761_8767 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 137 | 8761_8807 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 138 | 8761_8817 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 139 | 8761_9045 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 140 | 8761_9046 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 141 | 8761_5940 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 142 | 8761_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 143 | 8761_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 |
| 144 | 8761_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 145 | 8761_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |

| | A | AC | AD | AE | AF | AG | AH | AI | AJ | AK | AL | AM | AN | AO | AP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Table S4.** Number of ir | | | | | | | | | | | | | | |
| 2 | Comparison | ncra_LTR_41 | ncra_LTR_71 | ntet_LTR_15 | ntet_LTR_39 | ntet_LTR_25 | ncra_LTR_49 | ntet_LTR_19 | ntet_LTR_05 | ndisc_LTR_62 | ndisc_LTR_53 | ncra_LTR_76 | ncra_LTR_115 | ncra_LTR_38 | ncra_LTR_58 |
| 146 | 8767_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 147 | 8767_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 148 | 8767_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 149 | 8767_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 150 | 8767_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 151 | 8767_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 152 | 8767_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 153 | 8767_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 154 | 8767_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 155 | 8767_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 156 | 8767_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 157 | 8767_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 158 | 8767_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 159 | 8767_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 160 | 8767_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 161 | 8767_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 162 | 8767_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 163 | 8807_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 164 | 8807_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 165 | 8807_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 166 | 8807_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 167 | 8807_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 168 | 8807_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 169 | 8807_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 170 | 8807_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 171 | 8807_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 172 | 8807_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 173 | 8807_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 174 | 8807_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 175 | 8807_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 176 | 8807_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 177 | 8807_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 178 | 8807_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 179 | 8807_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | A | AC | AD | AE | AF | AG | AH | AI | AJ | AK | AL | AM | AN | AO | AP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Table S4.** Number of ir | | | | | | | | | | | | | | |
| 2 | Comparison | ncra_LTR_41 | ncra_LTR_71 | ntet_LTR_15 | ntet_LTR_39 | ntet_LTR_25 | ncra_LTR_49 | ntet_LTR_19 | ntet_LTR_05 | ndisc_LTR_62 | ndisc_LTR_53 | ncra_LTR_76 | ncra_LTR_115 | ncra_LTR_38 | ncra_LTR_58 |
| 180 | 8817_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 181 | 8817_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 182 | 8817_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 183 | 8817_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 184 | 8817_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 185 | 8817_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 186 | 8817_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 187 | 8817_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 188 | 8817_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 189 | 8817_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 190 | 8817_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 191 | 8817_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 192 | 8817_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 193 | 8817_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 194 | 8817_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 195 | 8817_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 196 | 8817_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 197 | 8817_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 198 | 9045_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 199 | 9045_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 200 | 9045_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 201 | 9045_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 202 | 9045_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 203 | 9045_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 204 | 9045_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 205 | 9045_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 206 | 9045_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 207 | 9045_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 208 | 9045_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 209 | 9045_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 210 | 9045_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 211 | 9045_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 212 | 9045_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 213 | 9045_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 214 | 9045_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 215 | 9045_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | A | AC | AD | AE | AF | AG | AH | AI | AJ | AK | AL | AM | AN | AO | AP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Table S4.** Number of ir | | | | | | | | | | | | | | |
| 2 | Comparison | ncra_LTR_41 | ncra_LTR_71 | ntet_LTR_15 | ntet_LTR_39 | ntet_LTR_25 | ncra_LTR_49 | ntet_LTR_19 | ntet_LTR_05 | ndisc_LTR_62 | ndisc_LTR_53 | ncra_LTR_76 | ncra_LTR_115 | ncra_LTR_38 | ncra_LTR_58 |
| 216 | 9046_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 217 | 9046_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 218 | 9046_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 219 | 9046_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 220 | 9046_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 221 | 9046_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 222 | 9046_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 223 | 9046_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 224 | 9046_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 225 | 9046_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 226 | 9046_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 227 | 9046_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 228 | 9046_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 229 | 9046_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 230 | 9046_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 231 | 9046_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 232 | 9046_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 233 | 5940_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 234 | 5940_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 235 | 5940_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 236 | 5940_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 237 | 5940_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 238 | 5940_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 239 | 5940_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 240 | 5940_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 241 | 5940_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 242 | 5940_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 243 | 5940_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 244 | 5940_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 245 | 5940_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 246 | 5940_5941 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 247 | 5940_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 248 | 5940_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 249 | 5940_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | A | AC | AD | AE | AF | AG | AH | AI | AJ | AK | AL | AM | AN | AO | AP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Table S4.** Number of ir | | | | | | | | | | | | | | |
| 2 | Comparison | ncra_LTR_41 | ncra_LTR_71 | ntet_LTR_15 | ntet_LTR_39 | ntet_LTR_25 | ncra_LTR_49 | ntet_LTR_19 | ntet_LTR_05 | ndisc_LTR_62 | ndisc_LTR_53 | ncra_LTR_76 | ncra_LTR_115 | ncra_LTR_38 | ncra_LTR_58 |
| 250 | 5941_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 251 | 5941_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 252 | 5941_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 253 | 5941_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 254 | 5941_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 255 | 5941_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 256 | 5941_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 257 | 5941_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 258 | 5941_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 259 | 5941_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 260 | 5941_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 261 | 5941_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 262 | 5941_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 263 | 5941_5940 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 264 | 5941_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 265 | 5941_W1426 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 266 | 5941_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 267 | 2489_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 268 | 2489_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 269 | 2489_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 270 | 2489_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 271 | 2489_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 272 | 2489_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 273 | 2489_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 274 | 2489_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 275 | 2489_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 276 | 2489_8767 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 277 | 2489_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 278 | 2489_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 279 | 2489_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 280 | 2489_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 281 | 2489_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 282 | 2489_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 283 | 2489_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 284 | 2489_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | A | AC | AD | AE | AF | AG | AH | AI | AJ | AK | AL | AM | AN | AO | AP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Table S4.** Number of ir | | | | | | | | | | | | | | |
| 2 | Comparison | ncra_LTR_41 | ncra_LTR_71 | ntet_LTR_15 | ntet_LTR_39 | ntet_LTR_25 | ncra_LTR_49 | ntet_LTR_19 | ntet_LTR_05 | ndisc_LTR_62 | ndisc_LTR_53 | ncra_LTR_76 | ncra_LTR_115 | ncra_LTR_38 | ncra_LTR_58 |
| 285 | W1426_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 286 | W1426_10752 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 287 | W1426_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 288 | W1426_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 289 | W1426_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 290 | W1426_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 291 | W1426_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 292 | W1426_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 293 | W1426_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 294 | W1426_8807 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 295 | W1426_8817 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 296 | W1426_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 297 | W1426_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 298 | W1426_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 299 | W1426_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 300 | W1426_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 301 | W1426_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 302 | W1434_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 303 | W1434_10752 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 304 | W1434_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 305 | W1434_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 306 | W1434_2508 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 307 | W1434_2509 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 308 | W1434_8579 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 309 | W1434_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 310 | W1434_8767 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 |
| 311 | W1434_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 312 | W1434_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 313 | W1434_9045 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 314 | W1434_9046 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 315 | W1434_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 316 | W1434_5941 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 317 | W1434_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 318 | W1434_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 319 | Total | 4 | 9 | 6 | 9 | 1 | 35 | 3 | 6 | 2 | 9 | 7 | 11 | 4 | 11 |

| | A | AQ | AR | AS | AT | AU | AV | AW | AX | AY | AZ | BA | BB | BC | BD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Table S4.** Number of ir | | | | | | | | | | | | | | |
| 2 | Comparison | ndisc_LTR_54 | ntet_LTR_01 | ndisc_LTR_60 | ncra_Gypsy_03 | ncra_LTR_32 | ncra_LTR_84 | ntet_LTR_40 | ncra_LTR_102 | ncra_LTR_68 | ncra_LTR_30 | ncra_LTR_83 | ntet_LTR_11 | ntet_LTR_06 | ncra_LTR_105 |
| 3 | 10397_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 10397_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 10397_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 10397_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 10397_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 10397_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 10397_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 10397_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 10397_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 10397_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 10397_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 10397_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 10397_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16 | 10397_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17 | 10397_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 18 | 10397_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 19 | 10397_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 20 | 10752_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 21 | 10752_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 22 | 10752_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 23 | 10752_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 24 | 10752_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 25 | 10752_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 26 | 10752_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 27 | 10752_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 28 | 10752_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 29 | 10752_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 30 | 10752_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 31 | 10752_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 32 | 10752_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 33 | 10752_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 34 | 10752_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 35 | 10752_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 36 | 10752_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | A | AQ | AR | AS | AT | AU | AV | AW | AX | AY | AZ | BA | BB | BC | BD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Table S4.** Number of ir | | | | | | | | | | | | | | |
| 2 | Comparison | ndisc_LTR_54 | ntet_LTR_01 | ndisc_LTR_60 | ncra_Gypsy_03 | ncra_LTR_32 | ncra_LTR_84 | ntet_LTR_40 | ncra_LTR_102 | ncra_LTR_68 | ncra_LTR_30 | ncra_LTR_83 | ntet_LTR_11 | ntet_LTR_06 | ncra_LTR_105 |
| 37 | 2503_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 38 | 2503_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 39 | 2503_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 40 | 2503_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 41 | 2503_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 42 | 2503_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 43 | 2503_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 44 | 2503_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 45 | 2503_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 46 | 2503_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 47 | 2503_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 48 | 2503_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 49 | 2503_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 50 | 2503_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 51 | 2503_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 52 | 2503_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 53 | 2503_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 54 | 2504_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 55 | 2504_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 56 | 2504_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 57 | 2504_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 58 | 2504_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 59 | 2504_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 60 | 2504_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 61 | 2504_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 62 | 2504_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 63 | 2504_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 64 | 2504_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 65 | 2504_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 66 | 2504_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 67 | 2504_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 68 | 2504_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 69 | 2504_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 70 | 2504_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | A | AQ | AR | AS | AT | AU | AV | AW | AX | AY | AZ | BA | BB | BC | BD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Table S4.** Number of ir | | | | | | | | | | | | | | |
| 2 | Comparison | ndisc_LTR_54 | ntet_LTR_01 | ndisc_LTR_60 | ncra_Gypsy_03 | ncra_LTR_32 | ncra_LTR_84 | ntet_LTR_40 | ncra_LTR_102 | ncra_LTR_68 | ncra_LTR_30 | ncra_LTR_83 | ntet_LTR_11 | ntet_LTR_06 | ncra_LTR_105 |
| 71 | 2508_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 72 | 2508_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 73 | 2508_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 74 | 2508_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 75 | 2508_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 76 | 2508_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 77 | 2508_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 78 | 2508_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 79 | 2508_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 80 | 2508_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 81 | 2508_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 82 | 2508_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 83 | 2508_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 84 | 2508_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 85 | 2508_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 86 | 2508_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 87 | 2508_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 88 | 2509_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 89 | 2509_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 90 | 2509_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 91 | 2509_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 92 | 2509_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 93 | 2509_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 94 | 2509_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 95 | 2509_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 96 | 2509_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 97 | 2509_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 98 | 2509_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 99 | 2509_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100 | 2509_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 101 | 2509_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 102 | 2509_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 103 | 2509_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 104 | 2509_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 105 | 5940_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 106 | 5940_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 107 | 5940_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 108 | 5940_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 109 | 5940_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | A | AQ | AR | AS | AT | AU | AV | AW | AX | AY | AZ | BA | BB | BC | BD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Table S4.** Number of ir | | | | | | | | | | | | | | |
| 2 | Comparison | ndisc_LTR_54 | ntet_LTR_01 | ndisc_LTR_60 | ncra_Gypsy_03 | ncra_LTR_32 | ncra_LTR_84 | ntet_LTR_40 | ncra_LTR_102 | ncra_LTR_68 | ncra_LTR_30 | ncra_LTR_83 | ntet_LTR_11 | ntet_LTR_06 | ncra_LTR_105 |
| 110 | 8579_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 111 | 8579_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 112 | 8579_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 113 | 8579_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 114 | 8579_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 115 | 8579_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 116 | 8579_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 117 | 8579_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 118 | 8579_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 119 | 8579_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 120 | 8579_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 121 | 8579_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 122 | 8579_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 123 | 8579_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 124 | 8579_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 125 | 8579_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 126 | 8579_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 127 | 8579_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 128 | 8761_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 129 | 8761_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 130 | 8761_2503 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 131 | 8761_2504 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 132 | 8761_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 133 | 8761_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 134 | 8761_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 135 | 8761_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 136 | 8761_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 137 | 8761_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 138 | 8761_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 139 | 8761_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 140 | 8761_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 141 | 8761_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 142 | 8761_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 143 | 8761_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 144 | 8761_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 145 | 8761_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | A | AQ | AR | AS | AT | AU | AV | AW | AX | AY | AZ | BA | BB | BC | BD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Table S4.** Number of ir | | | | | | | | | | | | | | |
| 2 | Comparison | ndisc_LTR_54 | ntet_LTR_01 | ndisc_LTR_60 | ncra_Gypsy_03 | ncra_LTR_32 | ncra_LTR_84 | ntet_LTR_40 | ncra_LTR_102 | ncra_LTR_68 | ncra_LTR_30 | ncra_LTR_83 | ntet_LTR_11 | ntet_LTR_06 | ncra_LTR_105 |
| 146 | 8767_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 147 | 8767_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 148 | 8767_2503 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 149 | 8767_2504 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 150 | 8767_2508 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 151 | 8767_2509 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 152 | 8767_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 153 | 8767_8761 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 154 | 8767_8807 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 155 | 8767_8817 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 156 | 8767_9045 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 157 | 8767_9046 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 158 | 8767_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 159 | 8767_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 160 | 8767_2489 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 161 | 8767_W1426 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 162 | 8767_W1434 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 163 | 8807_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 164 | 8807_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 165 | 8807_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 166 | 8807_2504 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 167 | 8807_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 168 | 8807_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 169 | 8807_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 170 | 8807_8761 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 171 | 8807_8767 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 172 | 8807_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 173 | 8807_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 174 | 8807_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 175 | 8807_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 176 | 8807_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 177 | 8807_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 178 | 8807_W1426 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 179 | 8807_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |

| | A | AQ | AR | AS | AT | AU | AV | AW | AX | AY | AZ | BA | BB | BC | BD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Table S4.** Number of ir | | | | | | | | | | | | | | |
| 2 | Comparison | ndisc_LTR_54 | ntet_LTR_01 | ndisc_LTR_60 | ncra_Gypsy_03 | ncra_LTR_32 | ncra_LTR_84 | ntet_LTR_40 | ncra_LTR_102 | ncra_LTR_68 | ncra_LTR_30 | ncra_LTR_83 | ntet_LTR_11 | ntet_LTR_06 | ncra_LTR_105 |
| 180 | 8817_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 181 | 8817_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 182 | 8817_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 183 | 8817_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 184 | 8817_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 185 | 8817_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 186 | 8817_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 187 | 8817_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 188 | 8817_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 189 | 8817_8767 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 190 | 8817_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 191 | 8817_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 192 | 8817_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 193 | 8817_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 194 | 8817_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 195 | 8817_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 196 | 8817_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 197 | 8817_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 198 | 9045_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 199 | 9045_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 |
| 200 | 9045_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 1 |
| 201 | 9045_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 |
| 202 | 9045_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 |
| 203 | 9045_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 204 | 9045_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 205 | 9045_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 206 | 9045_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 207 | 9045_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 208 | 9045_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 209 | 9045_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 210 | 9045_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 211 | 9045_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 212 | 9045_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 213 | 9045_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 214 | 9045_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 215 | 9045_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | A | AQ | AR | AS | AT | AU | AV | AW | AX | AY | AZ | BA | BB | BC | BD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Table S4.** Number of ir | | | | | | | | | | | | | | |
| 2 | Comparison | ndisc_LTR_54 | ntet_LTR_01 | ndisc_LTR_60 | ncra_Gypsy_03 | ncra_LTR_32 | ncra_LTR_84 | ntet_LTR_40 | ncra_LTR_102 | ncra_LTR_68 | ncra_LTR_30 | ncra_LTR_83 | ntet_LTR_11 | ntet_LTR_06 | ncra_LTR_105 |
| 216 | 9046_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 217 | 9046_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 218 | 9046_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 219 | 9046_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 220 | 9046_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 221 | 9046_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 222 | 9046_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 223 | 9046_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 224 | 9046_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 225 | 9046_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 226 | 9046_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 227 | 9046_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 228 | 9046_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 229 | 9046_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 230 | 9046_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 231 | 9046_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 232 | 9046_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 233 | 5940_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 234 | 5940_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 235 | 5940_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 236 | 5940_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 237 | 5940_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 238 | 5940_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 239 | 5940_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 240 | 5940_8761 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 241 | 5940_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 242 | 5940_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 243 | 5940_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 244 | 5940_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 245 | 5940_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 246 | 5940_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 247 | 5940_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 248 | 5940_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 249 | 5940_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | A | AQ | AR | AS | AT | AU | AV | AW | AX | AY | AZ | BA | BB | BC | BD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Table S4.** Number of ir | | | | | | | | | | | | | | |
| 2 | Comparison | ndisc_LTR_54 | ntet_LTR_01 | ndisc_LTR_60 | ncra_Gypsy_03 | ncra_LTR_32 | ncra_LTR_84 | ntet_LTR_40 | ncra_LTR_102 | ncra_LTR_68 | ncra_LTR_30 | ncra_LTR_83 | ntet_LTR_11 | ntet_LTR_06 | ncra_LTR_105 |
| 250 | 5941_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 251 | 5941_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 252 | 5941_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 253 | 5941_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 254 | 5941_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 255 | 5941_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 256 | 5941_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 257 | 5941_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 258 | 5941_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 259 | 5941_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 260 | 5941_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 261 | 5941_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 262 | 5941_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 263 | 5941_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 264 | 5941_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 265 | 5941_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 266 | 5941_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 267 | 2489_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 268 | 2489_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 269 | 2489_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 270 | 2489_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 271 | 2489_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 272 | 2489_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 273 | 2489_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 274 | 2489_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 275 | 2489_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 276 | 2489_8767 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 277 | 2489_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 278 | 2489_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 279 | 2489_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 280 | 2489_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 281 | 2489_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 282 | 2489_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 283 | 2489_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 284 | 2489_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | A | AQ | AR | AS | AT | AU | AV | AW | AX | AY | AZ | BA | BB | BC | BD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Table S4.** Number of ir | | | | | | | | | | | | | | |
| 2 | Comparison | ndisc_LTR_54 | ntet_LTR_01 | ndisc_LTR_60 | ncra_Gypsy_03 | ncra_LTR_32 | ncra_LTR_84 | ntet_LTR_40 | ncra_LTR_102 | ncra_LTR_68 | ncra_LTR_30 | ncra_LTR_83 | ntet_LTR_11 | ntet_LTR_06 | ncra_LTR_105 |
| 285 | W1426_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 286 | W1426_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 287 | W1426_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 288 | W1426_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 289 | W1426_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 290 | W1426_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 291 | W1426_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 292 | W1426_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 293 | W1426_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 294 | W1426_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 295 | W1426_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 296 | W1426_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 297 | W1426_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 298 | W1426_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 299 | W1426_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 300 | W1426_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 301 | W1426_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 302 | W1434_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 303 | W1434_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 304 | W1434_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 305 | W1434_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 306 | W1434_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 307 | W1434_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 308 | W1434_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 309 | W1434_8761 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 310 | W1434_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 311 | W1434_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 312 | W1434_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 313 | W1434_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 314 | W1434_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 315 | W1434_5940 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 316 | W1434_5941 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 317 | W1434_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 318 | W1434_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 319 | Total | 6 | 4 | 4 | 6 | 2 | 4 | 15 | 1 | 1 | 6 | 6 | 14 | 4 | 4 |

| | A | BE | BF | BG | BH | BI | BJ | BK | BL | BM | BN | BO | BP | BQ | BR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Table S4.** Number of ir | | | | | | | | | | | | | | |
| 2 | Comparison | ncra_LTR_110 | ncra_LTR_39 | ncra_LTR_85 | ncra_LTR_36 | ntet_LTR_07 | ncra_LTR_118 | ntet_Gypsy_09 | ncra_LTR_06 | ncra_LTR_48 | ncra_LTR_103 | ncra_LTR_12 | ncra_LTR_56 | ncra_LTR_59 | ncra_LTR_37 |
| 3 | 10397_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 10397_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 10397_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 10397_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 10397_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 10397_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 10397_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 10397_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 10397_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 10397_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 10397_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 10397_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 10397_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16 | 10397_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17 | 10397_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 18 | 10397_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 19 | 10397_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 20 | 10752_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 21 | 10752_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 22 | 10752_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 23 | 10752_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 24 | 10752_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 25 | 10752_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 26 | 10752_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 27 | 10752_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 28 | 10752_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 29 | 10752_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 30 | 10752_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 31 | 10752_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 32 | 10752_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 33 | 10752_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 34 | 10752_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 35 | 10752_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 36 | 10752_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | A | BE | BF | BG | BH | BI | BJ | BK | BL | BM | BN | BO | BP | BQ | BR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Table S4.** Number of ir | | | | | | | | | | | | | | |
| 2 | Comparison | ncra_LTR_110 | ncra_LTR_39 | ncra_LTR_85 | ncra_LTR_36 | ntet_LTR_07 | ncra_LTR_118 | ntet_Gypsy_09 | ncra_LTR_06 | ncra_LTR_48 | ncra_LTR_103 | ncra_LTR_12 | ncra_LTR_56 | ncra_LTR_59 | ncra_LTR_37 |
| 37 | 2503_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 38 | 2503_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 39 | 2503_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 40 | 2503_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 41 | 2503_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 42 | 2503_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 43 | 2503_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 44 | 2503_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 45 | 2503_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 46 | 2503_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 47 | 2503_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 48 | 2503_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 49 | 2503_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 50 | 2503_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 51 | 2503_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 52 | 2503_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 53 | 2503_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 54 | 2504_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 55 | 2504_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 56 | 2504_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 57 | 2504_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 58 | 2504_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 59 | 2504_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 60 | 2504_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 61 | 2504_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 62 | 2504_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 63 | 2504_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 64 | 2504_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 65 | 2504_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 66 | 2504_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 67 | 2504_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 68 | 2504_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 69 | 2504_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 70 | 2504_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | A | BE | BF | BG | BH | BI | BJ | BK | BL | BM | BN | BO | BP | BQ | BR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Table S4.** Number of ir | | | | | | | | | | | | | | |
| 2 | Comparison | ncra_LTR_110 | ncra_LTR_39 | ncra_LTR_85 | ncra_LTR_36 | ntet_LTR_07 | ncra_LTR_118 | ntet_Gypsy_09 | ncra_LTR_06 | ncra_LTR_48 | ncra_LTR_103 | ncra_LTR_12 | ncra_LTR_56 | ncra_LTR_59 | ncra_LTR_37 |
| 71 | 2508_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 72 | 2508_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 73 | 2508_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 74 | 2508_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 75 | 2508_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 76 | 2508_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 77 | 2508_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 78 | 2508_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 79 | 2508_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 80 | 2508_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 81 | 2508_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 82 | 2508_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 83 | 2508_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 84 | 2508_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 85 | 2508_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 86 | 2508_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 87 | 2508_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 88 | 2509_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 89 | 2509_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 90 | 2509_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 91 | 2509_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 92 | 2509_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 93 | 2509_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 94 | 2509_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 95 | 2509_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 96 | 2509_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 97 | 2509_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 98 | 2509_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 99 | 2509_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100 | 2509_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 101 | 2509_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 102 | 2509_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 103 | 2509_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 104 | 2509_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 105 | 5940_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 106 | 5940_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 107 | 5940_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 108 | 5940_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 109 | 5940_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | A | BE | BF | BG | BH | BI | BJ | BK | BL | BM | BN | BO | BP | BQ | BR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Table S4.** Number of ir | | | | | | | | | | | | | | |
| 2 | Comparison | ncra_LTR_110 | ncra_LTR_39 | ncra_LTR_85 | ncra_LTR_36 | ntet_LTR_07 | ncra_LTR_118 | ntet_Gypsy_09 | ncra_LTR_06 | ncra_LTR_48 | ncra_LTR_103 | ncra_LTR_12 | ncra_LTR_56 | ncra_LTR_59 | ncra_LTR_37 |
| 110 | 8579_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 111 | 8579_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 112 | 8579_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 113 | 8579_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 114 | 8579_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 115 | 8579_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 116 | 8579_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 117 | 8579_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 118 | 8579_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 119 | 8579_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 120 | 8579_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 121 | 8579_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 122 | 8579_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 123 | 8579_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 124 | 8579_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 125 | 8579_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 126 | 8579_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 127 | 8579_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 128 | 8761_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 129 | 8761_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 130 | 8761_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 131 | 8761_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 132 | 8761_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 133 | 8761_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 134 | 8761_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 135 | 8761_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 136 | 8761_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 137 | 8761_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 138 | 8761_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 139 | 8761_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 140 | 8761_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 141 | 8761_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 142 | 8761_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 143 | 8761_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 144 | 8761_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 145 | 8761_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | A | BE | BF | BG | BH | BI | BJ | BK | BL | BM | BN | BO | BP | BQ | BR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Table S4.** Number of ir | | | | | | | | | | | | | | |
| 2 | Comparison | ncra_LTR_110 | ncra_LTR_39 | ncra_LTR_85 | ncra_LTR_36 | ntet_LTR_07 | ncra_LTR_118 | ntet_Gypsy_09 | ncra_LTR_06 | ncra_LTR_48 | ncra_LTR_103 | ncra_LTR_12 | ncra_LTR_56 | ncra_LTR_59 | ncra_LTR_37 |
| 146 | 8767_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 147 | 8767_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 148 | 8767_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 149 | 8767_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 150 | 8767_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 151 | 8767_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 152 | 8767_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 153 | 8767_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 154 | 8767_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 155 | 8767_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 156 | 8767_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 157 | 8767_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 158 | 8767_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 159 | 8767_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 160 | 8767_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 161 | 8767_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 162 | 8767_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 163 | 8807_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 164 | 8807_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 165 | 8807_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 166 | 8807_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 167 | 8807_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 168 | 8807_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 169 | 8807_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 170 | 8807_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 171 | 8807_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 172 | 8807_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 173 | 8807_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 174 | 8807_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 175 | 8807_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 176 | 8807_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 177 | 8807_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 178 | 8807_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 179 | 8807_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | A | BE | BF | BG | BH | BI | BJ | BK | BL | BM | BN | BO | BP | BQ | BR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Table S4.** Number of ir | | | | | | | | | | | | | | |
| 2 | Comparison | ncra_LTR_110 | ncra_LTR_39 | ncra_LTR_85 | ncra_LTR_36 | ntet_LTR_07 | ncra_LTR_118 | ntet_Gypsy_09 | ncra_LTR_06 | ncra_LTR_48 | ncra_LTR_103 | ncra_LTR_12 | ncra_LTR_56 | ncra_LTR_59 | ncra_LTR_37 |
| 180 | 8817_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 181 | 8817_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 182 | 8817_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 183 | 8817_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 184 | 8817_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 185 | 8817_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 186 | 8817_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 187 | 8817_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 188 | 8817_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 189 | 8817_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 190 | 8817_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 191 | 8817_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 192 | 8817_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 193 | 8817_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 194 | 8817_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 195 | 8817_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 196 | 8817_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 197 | 8817_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 198 | 9045_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 199 | 9045_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 200 | 9045_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 201 | 9045_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 202 | 9045_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 203 | 9045_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 204 | 9045_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 205 | 9045_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 206 | 9045_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 207 | 9045_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 208 | 9045_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 209 | 9045_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 210 | 9045_9046 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 211 | 9045_5940 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 212 | 9045_5941 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 213 | 9045_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 214 | 9045_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 215 | 9045_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | A | BE | BF | BG | BH | BI | BJ | BK | BL | BM | BN | BO | BP | BQ | BR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Table S4.** Number of ir | | | | | | | | | | | | | | |
| 2 | Comparison | ncra_LTR_110 | ncra_LTR_39 | ncra_LTR_85 | ncra_LTR_36 | ntet_LTR_07 | ncra_LTR_118 | ntet_Gypsy_09 | ncra_LTR_06 | ncra_LTR_48 | ncra_LTR_103 | ncra_LTR_12 | ncra_LTR_56 | ncra_LTR_59 | ncra_LTR_37 |
| 216 | 9046_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 217 | 9046_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 218 | 9046_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 219 | 9046_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 220 | 9046_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 221 | 9046_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 222 | 9046_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 223 | 9046_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 224 | 9046_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 225 | 9046_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 226 | 9046_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 227 | 9046_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 228 | 9046_5940 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 229 | 9046_5941 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 230 | 9046_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 231 | 9046_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 232 | 9046_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 233 | 5940_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 234 | 5940_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 235 | 5940_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 236 | 5940_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 237 | 5940_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 238 | 5940_2509 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 239 | 5940_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 240 | 5940_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 241 | 5940_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 242 | 5940_8807 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 243 | 5940_8817 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 244 | 5940_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 245 | 5940_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 246 | 5940_5941 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 247 | 5940_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 248 | 5940_W1426 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 249 | 5940_W1434 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | A | BE | BF | BG | BH | BI | BJ | BK | BL | BM | BN | BO | BP | BQ | BR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Table S4.** Number of ir | | | | | | | | | | | | | | |
| 2 | Comparison | ncra_LTR_110 | ncra_LTR_39 | ncra_LTR_85 | ncra_LTR_36 | ntet_LTR_07 | ncra_LTR_118 | ntet_Gypsy_09 | ncra_LTR_06 | ncra_LTR_48 | ncra_LTR_103 | ncra_LTR_12 | ncra_LTR_56 | ncra_LTR_59 | ncra_LTR_37 |
| 250 | 5941_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 251 | 5941_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 252 | 5941_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 253 | 5941_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 254 | 5941_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 255 | 5941_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 256 | 5941_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 257 | 5941_8761 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 258 | 5941_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 259 | 5941_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 260 | 5941_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 261 | 5941_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 262 | 5941_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 263 | 5941_5940 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 264 | 5941_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 265 | 5941_W1426 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 266 | 5941_W1434 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 267 | 2489_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 268 | 2489_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 0 |
| 269 | 2489_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 270 | 2489_2504 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 271 | 2489_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 272 | 2489_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 273 | 2489_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 274 | 2489_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 |
| 275 | 2489_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| 276 | 2489_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 |
| 277 | 2489_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 |
| 278 | 2489_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 279 | 2489_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 280 | 2489_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 281 | 2489_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 282 | 2489_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 283 | 2489_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 |
| 284 | 2489_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |

| | A | BE | BF | BG | BH | BI | BJ | BK | BL | BM | BN | BO | BP | BQ | BR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Table S4.** Number of ir | | | | | | | | | | | | | | |
| 2 | Comparison | ncra_LTR_110 | ncra_LTR_39 | ncra_LTR_85 | ncra_LTR_36 | ntet_LTR_07 | ncra_LTR_118 | ntet_Gypsy_09 | ncra_LTR_06 | ncra_LTR_48 | ncra_LTR_103 | ncra_LTR_12 | ncra_LTR_56 | ncra_LTR_59 | ncra_LTR_37 |
| 285 | W1426_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 286 | W1426_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 287 | W1426_2503 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 288 | W1426_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 289 | W1426_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 290 | W1426_2509 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 291 | W1426_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 292 | W1426_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 293 | W1426_8767 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 294 | W1426_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 295 | W1426_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 296 | W1426_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 297 | W1426_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 298 | W1426_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 299 | W1426_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 300 | W1426_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 301 | W1426_W1434 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 302 | W1434_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 303 | W1434_10752 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 304 | W1434_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 305 | W1434_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 306 | W1434_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 307 | W1434_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 308 | W1434_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 309 | W1434_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 310 | W1434_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 311 | W1434_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 312 | W1434_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 313 | W1434_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 314 | W1434_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 315 | W1434_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 316 | W1434_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 317 | W1434_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 318 | W1434_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 319 | Total | 1 | 8 | 7 | 3 | 4 | 2 | 2 | 6 | 3 | 2 | 4 | 3 | 6 | 5 |

| | A | BS | BT | BU | BV | BW | BX | BY | BZ | CA | CB | CC | CD | CE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Table S4.** Number of ir | | | | | | | | | | | | | |
| 2 | Comparison | ncra_LTR_120 | ncra_LTR_94 | ncra_LTR_73 | ncra_LTR_62 | ncra_LTR_122 | ncra_LTR_35 | ncra_LTR_112 | ncra_LTR_97 | ncra_LTR_74 | ncra_LTR_109 | ncra_LTR_11 | ncra_LTR_14 | ncra_LTR_86 |
| 3 | 10397_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 10397_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 10397_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 10397_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 10397_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 10397_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 10397_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 10397_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 10397_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 10397_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 10397_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 10397_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 10397_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16 | 10397_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17 | 10397_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 18 | 10397_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 19 | 10397_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 20 | 10752_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 21 | 10752_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 22 | 10752_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 23 | 10752_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 24 | 10752_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 25 | 10752_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 26 | 10752_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 27 | 10752_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 28 | 10752_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 29 | 10752_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 30 | 10752_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 31 | 10752_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 32 | 10752_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 33 | 10752_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 34 | 10752_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 35 | 10752_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 36 | 10752_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | A | BS | BT | BU | BV | BW | BX | BY | BZ | CA | CB | CC | CD | CE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Table S4.** Number of ir | | | | | | | | | | | | | |
| 2 | Comparison | ncra_LTR_120 | ncra_LTR_94 | ncra_LTR_73 | ncra_LTR_62 | ncra_LTR_122 | ncra_LTR_35 | ncra_LTR_112 | ncra_LTR_97 | ncra_LTR_74 | ncra_LTR_109 | ncra_LTR_11 | ncra_LTR_14 | ncra_LTR_86 |
| 37 | 2503_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 38 | 2503_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 39 | 2503_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 40 | 2503_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 41 | 2503_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 42 | 2503_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 43 | 2503_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 44 | 2503_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 45 | 2503_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 46 | 2503_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 47 | 2503_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 48 | 2503_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 49 | 2503_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 50 | 2503_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 51 | 2503_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 52 | 2503_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 53 | 2503_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 54 | 2504_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 55 | 2504_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 56 | 2504_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 57 | 2504_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 58 | 2504_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 59 | 2504_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 60 | 2504_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 61 | 2504_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 62 | 2504_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 63 | 2504_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 64 | 2504_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 65 | 2504_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 66 | 2504_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 67 | 2504_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 68 | 2504_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 69 | 2504_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 70 | 2504_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | A | BS | BT | BU | BV | BW | BX | BY | BZ | CA | CB | CC | CD | CE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Table S4.** Number of ir | | | | | | | | | | | | | |
| 2 | Comparison | ncra_LTR_120 | ncra_LTR_94 | ncra_LTR_73 | ncra_LTR_62 | ncra_LTR_122 | ncra_LTR_35 | ncra_LTR_112 | ncra_LTR_97 | ncra_LTR_74 | ncra_LTR_109 | ncra_LTR_11 | ncra_LTR_14 | ncra_LTR_86 |
| 71 | 2508_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 72 | 2508_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 73 | 2508_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 74 | 2508_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 75 | 2508_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 76 | 2508_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 77 | 2508_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 78 | 2508_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 79 | 2508_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 80 | 2508_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 81 | 2508_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 82 | 2508_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 83 | 2508_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 84 | 2508_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 85 | 2508_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 86 | 2508_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 87 | 2508_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 88 | 2509_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 89 | 2509_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 90 | 2509_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 91 | 2509_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 92 | 2509_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 93 | 2509_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 94 | 2509_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 95 | 2509_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 96 | 2509_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 97 | 2509_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 98 | 2509_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 99 | 2509_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100 | 2509_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 101 | 2509_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 102 | 2509_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 103 | 2509_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 104 | 2509_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 105 | 5940_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 106 | 5940_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 107 | 5940_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 108 | 5940_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 109 | 5940_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | A | BS | BT | BU | BV | BW | BX | BY | BZ | CA | CB | CC | CD | CE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Table S4.** Number of ir | | | | | | | | | | | | | |
| 2 | Comparison | ncra_LTR_120 | ncra_LTR_94 | ncra_LTR_73 | ncra_LTR_62 | ncra_LTR_122 | ncra_LTR_35 | ncra_LTR_112 | ncra_LTR_97 | ncra_LTR_74 | ncra_LTR_109 | ncra_LTR_11 | ncra_LTR_14 | ncra_LTR_86 |
| 110 | 8579_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 111 | 8579_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 112 | 8579_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 113 | 8579_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 114 | 8579_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 115 | 8579_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 116 | 8579_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 117 | 8579_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 118 | 8579_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 119 | 8579_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 120 | 8579_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 121 | 8579_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 122 | 8579_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 123 | 8579_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 124 | 8579_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 125 | 8579_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 126 | 8579_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 127 | 8579_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 128 | 8761_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 129 | 8761_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 130 | 8761_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 131 | 8761_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 132 | 8761_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 133 | 8761_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 134 | 8761_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 135 | 8761_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 136 | 8761_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 137 | 8761_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 138 | 8761_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 139 | 8761_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 140 | 8761_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 141 | 8761_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 142 | 8761_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 143 | 8761_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 144 | 8761_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 145 | 8761_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | A | BS | BT | BU | BV | BW | BX | BY | BZ | CA | CB | CC | CD | CE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Table S4.** Number of ir | | | | | | | | | | | | | |
| 2 | Comparison | ncra_LTR_120 | ncra_LTR_94 | ncra_LTR_73 | ncra_LTR_62 | ncra_LTR_122 | ncra_LTR_35 | ncra_LTR_112 | ncra_LTR_97 | ncra_LTR_74 | ncra_LTR_109 | ncra_LTR_11 | ncra_LTR_14 | ncra_LTR_86 |
| 146 | 8767_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 147 | 8767_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 148 | 8767_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 149 | 8767_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 150 | 8767_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 151 | 8767_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 152 | 8767_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 153 | 8767_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 154 | 8767_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 155 | 8767_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 156 | 8767_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 157 | 8767_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 158 | 8767_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 159 | 8767_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 160 | 8767_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 161 | 8767_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 162 | 8767_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 163 | 8807_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 164 | 8807_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 165 | 8807_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 166 | 8807_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 167 | 8807_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 168 | 8807_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 169 | 8807_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 170 | 8807_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 171 | 8807_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 172 | 8807_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 173 | 8807_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 174 | 8807_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 175 | 8807_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 176 | 8807_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 177 | 8807_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 178 | 8807_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 179 | 8807_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | A | BS | BT | BU | BV | BW | BX | BY | BZ | CA | CB | CC | CD | CE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Table S4.** Number of ir | | | | | | | | | | | | | |
| 2 | Comparison | ncra_LTR_120 | ncra_LTR_94 | ncra_LTR_73 | ncra_LTR_62 | ncra_LTR_122 | ncra_LTR_35 | ncra_LTR_112 | ncra_LTR_97 | ncra_LTR_74 | ncra_LTR_109 | ncra_LTR_11 | ncra_LTR_14 | ncra_LTR_86 |
| 180 | 8817_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 181 | 8817_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 182 | 8817_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 183 | 8817_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 184 | 8817_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 185 | 8817_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 186 | 8817_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 187 | 8817_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 188 | 8817_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 189 | 8817_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 190 | 8817_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 191 | 8817_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 192 | 8817_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 193 | 8817_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 194 | 8817_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 195 | 8817_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 196 | 8817_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 197 | 8817_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 198 | 9045_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 199 | 9045_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 200 | 9045_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 201 | 9045_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 202 | 9045_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 203 | 9045_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 204 | 9045_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 205 | 9045_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 206 | 9045_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 207 | 9045_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 208 | 9045_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 209 | 9045_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 210 | 9045_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 211 | 9045_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 212 | 9045_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 213 | 9045_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 214 | 9045_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 215 | 9045_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | A | BS | BT | BU | BV | BW | BX | BY | BZ | CA | CB | CC | CD | CE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Table S4.** Number of ir | | | | | | | | | | | | | |
| 2 | Comparison | ncra_LTR_120 | ncra_LTR_94 | ncra_LTR_73 | ncra_LTR_62 | ncra_LTR_122 | ncra_LTR_35 | ncra_LTR_112 | ncra_LTR_97 | ncra_LTR_74 | ncra_LTR_109 | ncra_LTR_11 | ncra_LTR_14 | ncra_LTR_86 |
| 216 | 9046_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 217 | 9046_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 218 | 9046_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 219 | 9046_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 220 | 9046_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 221 | 9046_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 222 | 9046_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 223 | 9046_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 224 | 9046_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 225 | 9046_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 226 | 9046_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 227 | 9046_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 228 | 9046_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 229 | 9046_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 230 | 9046_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 231 | 9046_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 232 | 9046_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 233 | 5940_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 234 | 5940_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 235 | 5940_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 236 | 5940_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 237 | 5940_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 238 | 5940_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 239 | 5940_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 240 | 5940_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 241 | 5940_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 242 | 5940_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 243 | 5940_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 244 | 5940_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 245 | 5940_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 246 | 5940_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 247 | 5940_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 248 | 5940_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 249 | 5940_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | A | BS | BT | BU | BV | BW | BX | BY | BZ | CA | CB | CC | CD | CE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Table S4.** Number of ir | | | | | | | | | | | | | |
| 2 | Comparison | ncra_LTR_120 | ncra_LTR_94 | ncra_LTR_73 | ncra_LTR_62 | ncra_LTR_122 | ncra_LTR_35 | ncra_LTR_112 | ncra_LTR_97 | ncra_LTR_74 | ncra_LTR_109 | ncra_LTR_11 | ncra_LTR_14 | ncra_LTR_86 |
| 250 | 5941_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 251 | 5941_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 252 | 5941_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 253 | 5941_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 254 | 5941_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 255 | 5941_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 256 | 5941_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 257 | 5941_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 258 | 5941_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 259 | 5941_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 260 | 5941_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 261 | 5941_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 262 | 5941_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 263 | 5941_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 264 | 5941_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 265 | 5941_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 266 | 5941_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 267 | 2489_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 268 | 2489_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 269 | 2489_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 270 | 2489_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 271 | 2489_2508 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 272 | 2489_2509 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 273 | 2489_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 274 | 2489_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 275 | 2489_8761 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 276 | 2489_8767 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 277 | 2489_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 278 | 2489_8817 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 279 | 2489_9045 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 280 | 2489_9046 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 281 | 2489_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 282 | 2489_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 283 | 2489_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 284 | 2489_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |

| | A | BS | BT | BU | BV | BW | BX | BY | BZ | CA | CB | CC | CD | CE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Table S4.** Number of ir | | | | | | | | | | | | | |
| 2 | Comparison | ncra_LTR_120 | ncra_LTR_94 | ncra_LTR_73 | ncra_LTR_62 | ncra_LTR_122 | ncra_LTR_35 | ncra_LTR_112 | ncra_LTR_97 | ncra_LTR_74 | ncra_LTR_109 | ncra_LTR_11 | ncra_LTR_14 | ncra_LTR_86 |
| 285 | W1426_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 286 | W1426_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 287 | W1426_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 288 | W1426_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 289 | W1426_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 290 | W1426_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 291 | W1426_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 292 | W1426_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 293 | W1426_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 294 | W1426_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 295 | W1426_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 296 | W1426_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 297 | W1426_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 298 | W1426_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 299 | W1426_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 300 | W1426_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 301 | W1426_W1434 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 302 | W1434_10397 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 303 | W1434_10752 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 304 | W1434_2503 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 305 | W1434_2504 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 306 | W1434_2508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 307 | W1434_2509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 308 | W1434_8579 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 309 | W1434_8761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 310 | W1434_8767 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 311 | W1434_8807 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 312 | W1434_8817 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 313 | W1434_9045 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 314 | W1434_9046 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 315 | W1434_5940 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 316 | W1434_5941 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| 317 | W1434_2489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 318 | W1434_W1426 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 319 | Total | 1 | 2 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 4 | 8 | 2 | 1 |

**Table S5.** Summary of the pairwise lineage-specific insertions found by TE subfamily in *Neurospora* . The length (bp) of the insertions per subfamily are reported together with the minimum, mean and maximum length ("Stat" column). The putative number of full-length LTR elements are indicated in the "LTR" column.

| Repeat | Length | Stat | LTR |
|---|---|---|---|
| ncra_Gypsy_01 | 7899,7900,341,341,340,313,313,340,3 | 313,1011,7900 | 2 |
| ncra_Gypsy_03 | 300,300,300,300,300,300 | 300,300,300 | 0 |
| ncra_Gypsy_08 | 338,1552,1552,1552,1557,1557,1557 | 338,1380,1557 | 0 |
| ncra_Gypsy_10 | 513 | 513,513,513 | 0 |
| ncra_LTR_04 | 330,8533,8552,8552 | 330,6491,8552 | 3 |
| ncra_LTR_05 | 7988,7988,7988,7988,7988,7926,7926 | 7905,7960,7988 | 12 |
| ncra_LTR_06 | 8482,8482,8482,8482,8482,8482 | 8482,8482,8482 | 6 |
| ncra_LTR_101 | 1337,1337,1337,1337,1338,450,450,12 | 450,1020,1338 | 0 |
| ncra_LTR_102 | 8835 | 8835,8835,8835 | 1 |
| ncra_LTR_103 | 8462.8462 | 8462,8462,8462 | 2 |
| ncra_LTR_104 | 724,712,762,725,724,647,574,647,712 | 574,705,795 | 0 |
| ncra_LTR_105 | 6141,6141,6141,6141 | 6141,6141,6141 | 4 |
| ncra_LTR_109 | 8267,8267,8267,8267 | 8267,8267,8267 | 4 |
| ncra_LTR_11 | 6031,6031,1471,1471,1471,1471,1471 | 1471,2611,6031 | 2 |
| ncra_LTR_110 | 8373 | 8373,8373,8373 | 1 |
| ncra_LTR_112 | 8604 | 8604,8604,8604 | 1 |
| ncra_LTR_115 | 6077,6061,6102,6081,6017,5989,5989 | 5988,6031,6102 | 11 |
| ncra_LTR_116 | 8726,8847,8847,8848,8848,8841,8841 | 8726,8828,8848 | 7 |
| ncra_LTR_118 | 342.358 | 342,350,358 | 0 |
| ncra_LTR_12 | 6624,6624,6624,6624 | 6624,6624,6624 | 4 |
| ncra_LTR_120 | 8293 | 8293,8293,8293 | 1 |
| ncra_LTR_122 | 7921 | 7921,7921,7921 | 1 |
| ncra_LTR_14 | 6090.609 | 6090,6090,6090 | 2 |
| ncra_LTR_30 | 8685,8701,8701,8685,8732,8732 | 8685,8706,8732 | 6 |
| ncra_LTR_32 | 7402.7402 | 7402,7402,7402 | 2 |
| ncra_LTR_35 | 11351 | 11351,11351,113 | 1 |
| ncra_LTR_36 | 8307,8307,8314 | 8307,8309,8314 | 3 |
| ncra_LTR_37 | 6074,6074,6074,6074,6074 | 6074,6074,6074 | 5 |
| ncra_LTR_38 | 6992,6992,7106,7106 | 6992,7049,7106 | 4 |
| ncra_LTR_39 | 7174,7174,7174,7174,7169,7169,7169 | 7165,7171,7174 | 8 |
| ncra_LTR_41 | 7172,7172,7172,5196 | 5196,6678,7172 | 4 |
| ncra_LTR_48 | 7712,7712,1148 | 1148,5524,7712 | 2 |
| ncra_LTR_49 | 7781,7781,7781,7772,7774,7774,7774 | 487,7366,7839 | 33 |
| ncra_LTR_53 | 854,880,876,876,872,872,876,901,876 | 850,1783,9473 | 2 |
| ncra_LTR_56 | 11194,11194,11194 | 11194,11194,111 | 3 |
| ncra_LTR_58 | 7492,7492,7492,7492,7492,7492,7492 | 7445,7484,7504 | 11 |
| ncra_LTR_59 | 8644,8644,8644,8644,8644,8644 | 8644,8644,8644 | 6 |

**Table S5.** Summary of the pairwise lineage-specific insertions found by TE subfamily in *Neurospora* . The length (bp) of the insertions per subfamily are reported together with the minimum, mean and maximum length ("Stat" column). The putative number of full-length LTR elements are indicated in the "LTR" column.

| Repeat | Length | Stat | LTR |
|---|---|---|---|
| ncra_LTR_62 | 11296 | 11296,11296,112 | 1 |
| ncra_LTR_63 | 309,309,7477,7485,7485,7490,7490 | 309,5435,7490 | 5 |
| ncra_LTR_64 | 301,301,8753,8753,301,301,320,320,8 | 301,3120,8753 | 3 |
| ncra_LTR_68 | 8729 | 8729,8729,8729 | 1 |
| ncra_LTR_69 | 7555,7519,7546,7533,7555,7555,7555 | 7487,7533,7566 | 45 |
| ncra_LTR_71 | 7473,7473,7473,7418,7464,7418,7473 | 7418,7459,7521 | 9 |
| ncra_LTR_73 | 11442,11442,11442 | 11442,11442,114 | 3 |
| ncra_LTR_74 | 8739 | 8739,8739,8739 | 1 |
| ncra_LTR_75 | 7057,7145,7145,7145,7145,7145,7106 | 7057,7124,7183 | 27 |
| ncra_LTR_76 | 8251,8307,8307,8291,8291,8262,8341 | 8251,8292,8341 | 7 |
| ncra_LTR_83 | 7852,7827,7827,7827,7827,7827 | 7827,7831,7852 | 6 |
| ncra_LTR_84 | 8249,8249,8268,8257 | 8249,8255,8268 | 4 |
| ncra_LTR_85 | 7110,7109,7109,7109,7112,7111,7111 | 7109,7110,7112 | 7 |
| ncra_LTR_86 | 439 | 439,439,439 | 0 |
| ncra_LTR_94 | 7034.7034 | 7034,7034,7034 | 2 |
| ncra_LTR_97 | 6638 | 6638,6638,6638 | 1 |
| ncra_Tad1_01 | 6930,6919,2214,6929,2030,6931,2214 | 384,4852,6964 | 0 |
| ncra_Tad1_06 | 2081,1252,1798,2081,1904,1942,1904 | 337,1349,2331 | 0 |
| ndisc_LTR_53 | 5932,5932,5932,5932,5932,5932,5932 | 5932,5932,5932 | 9 |
| ndisc_LTR_54 | 7448,7448,7463,7441,7441,7441 | 7441,7447,7463 | 6 |
| ndisc_LTR_60 | 7161,7161,7161,7161 | 7161,7161,7161 | 4 |
| ndisc_LTR_62 | 449.449 | 449,449,449 | 0 |
| ntet_Gypsy_01 | 393,393,393,393,393,393 | 393,393,393 | 0 |
| ntet_Gypsy_09 | 999.999 | 999,999,999 | 0 |
| ntet_LTR_01 | 336,336,336,336 | 336,336,336 | 0 |
| ntet_LTR_05 | 7289,7431,7219,7219,7219,7219 | 7219,7266,7431 | 6 |
| ntet_LTR_06 | 7036,7036,7083,7083 | 7036,7059,7083 | 4 |
| ntet_LTR_07 | 7428,7428,7428,7520 | 7428,7451,7520 | 4 |
| ntet_LTR_11 | 7012,6919,7012,6919,7012,6919,7012 | 6211,6928,7012 | 14 |
| ntet_LTR_14 | 8189,8189,8189,8187,8187,8187 | 8187,8188,8189 | 6 |
| ntet_LTR_15 | 471,471,471,471,471,471 | 471,471,471 | 0 |
| ntet_LTR_18 | 7126,7126,7127,7126,7126,7126,7126 | 7025,7128,7203 | 35 |
| ntet_LTR_19 | 2176,2176,2176 | 2176,2176,2176 | 0 |
| ntet_LTR_25 | 469 | 469,469,469 | 0 |
| ntet_LTR_27 | 2044,336,1828,1828,336,336,1828,182 | 325,1318,2044 | 0 |
| ntet_LTR_28 | 1466,1466,6085,6085 | 1466,3775,6085 | 2 |
| ntet_LTR_35 | 7450,7450,7450,7450,7452,7441,7450 | 7441,7455,7502 | 9 |

**Table S5.** Summary of the pairwise lineage-specific insertions found by TE subfamily in *Neurospora* . The length (bp) of the insertions per subfamily are reported together with the minimum, mean and maximum length ("Stat" column). The putative number of full-length LTR elements are indicated in the "LTR" column.

| Repeat | Length | Stat | LTR |
|---|---|---|---|
| ntet_LTR_37 | 8610,8610,8615,8608,8608,8608,8608 | 8608,8609,8615 | 15 |
| ntet_LTR_39 | 8616,534,534,534,534,534,464,464,46 | 464,1408,8616 | 1 |
| ntet_LTR_40 | 7154,7118,7166,7166,7166,7118,7166 | 7118,7147,7170 | 15 |
| ntet_LTR_45 | 596,558,558,606,558,558,606,464,540 | 441,532,606 | 0 |
| ntet_Tad1_01 | 1603,2020,1158,1158,1598,1598,1269 | 617,1331,2157 | 0 |
| ntet_Tad1_02 | 6901,6901,722,616,616,616,617,617,6 | 610,1459,6901 | 0 |
| Tad1-1 | 1441,617,617,932,673,673,617,617,62 | 352,851,1845 | 0 |
| Tad3-2 | 1268,487,487,1380,1380,1380,1380,13 | 487,1492,2547 | 0 |