

Genetic mapping of the *A. nidulans* *xprE* gene

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Strains carrying the *xprE1* mutation produce very little or no extracellular proteases in response to carbon and nitrogen limitation and have reduced levels of extracellular protease in response to sulphur limitation. Haploidization analysis has shown that the *xprE* gene is located on *A. nidulans* chromosome VI (Katz *et al.* 1996, Mol. Gen. Genet., in press). In order to isolate the *xprE* gene using the *A. nidulans* physical map a more accurate position of the gene has now been determined. The gene order on chromosome VI is *lysA*, *xprE*, *sB*, *sbA*.

Table 1. Genetic mapping of *xprE*^a

	Genotype			No. of progeny		Genotype			No. of progeny
Parentals	<i>xprE</i>	+	+	56	Parentals	+	<i>xprE</i>	+	105
A464	1				A350	1			
	+	<i>sB3</i>	<i>sbA</i>	73		<i>lysA</i>	+	<i>sB3</i>	0
			3			1			
Region I	<i>xprE</i>	<i>sB3</i>	<i>sbA</i>	10	Region I	+	+	<i>sB3</i>	12
	1		3						
crossovers	+	+	+	17	crossovers	<i>lysA</i>	<i>xprE</i>	+	0
						1	1		
Region II	<i>xprE</i>	+	<i>sbA</i>	36	Region II	+	<i>xprE</i>	<i>sB3</i>	13
	1		3				1		
crossovers	+	<i>sB3</i>	+	43	crossovers	<i>lysA</i>	+	+	0
						1			
Double	<i>xprE</i>	<i>sB3</i>	+	5	Double	+	+	+	6
	1								
crossovers	+	+	<i>sbA</i>	5	crossovers	<i>lysA</i>	<i>xprE</i>	<i>sB3</i>	0
			3			1	1		
Region I map distance: 15.1 cM					Region I map distance: 13.2 cM				
Region II map distance: 36.3 cM					Region II map distance: 14.0 cM				

^aData from crosses between *xprE1* strain MK43 (*biA1*;*xprE1*;*niiA4*) and A464 (*suA1-adE20* *pabaA1* *yA2* *adE20*; *acrA1*; *lacA1* *bwA1* *sB3* *sbA3*) and MK55 (*suA-adE20* *yA1* *adE20*; *pyroA4*; *xprE1*; *riboB2*) with A350 (*biA1*; *phenA2*; *lysA1* (Inv1(VI)-*lysA1*) *sB3*) are shown. Only *lys*+*phen*+ segregants from the cross to A350 were scored as the addition of lysine or phenylalanine to the medium represses extracellular protease production and prevents scoring of the *xprE1* mutation.

lysA-----19*-----*fpaF*-----18-----*sB*-----41-----*sbA*

lysA----13.2*-----*xprE*---14.6-----*sB*-----36.3-----*sbA*

Figure 1. Position of the *xprE* gene on *A. nidulans* chromosome VI. The upper map shows the genetic distances from the linkage map of *A. nidulans* (A.J. Clutterbuck 1993 In: O'Brien SJ (ed) Genetic Maps, vol 6. Cold Spring Harbor Laboratory, Cold Spring Harbor, New York, pp 3.71-3.84). The lower map is based on the recombination frequencies listed in Table 1.

*The observed recombination frequency may be affected by the Inv1(VI)-*lysA1* rearrangement.

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