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Gene mapping of SEZ group genes and determination of pentylentetrazol susceptible quantitative trait loci in the mouse chromosome

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Gene mapping of the newly discovered SEZ gene (seizure-related genes) in the mouse was performed by linkage analysis. SEZ6 was on chromosome 11, SEZ12 on chromosome 16, SEZ15 on chromosome 3 and SEZ17 (PTZ17) on chromosome 18. The mouse chromosomal locus related to high susceptibility to pentylentetrazol (PTZ) was also determined by linkage analysis using the recombinant inbred mouse, BXD (C57BL × DBA). A significant level of PTZ susceptibility was found on chromosome 2. Chromosomal loci of the newly discovered SEZ gene were not coincident with the significant chromosomal loci to PTZ susceptibility. Since epilepsy is assumed to be a disease syndrome which is probably manifested by abnormal expression of multifocal genes, determination of the role of each chromosomal locus in the provocation of seizure activity is important.