Recessive spotting-like (*rslk*): a new spontaneous mutation on mouse Chromosome 5

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Mutation (allele) symbol: *rslk*

Mutation (allele) name: recessive spotting-like

Gene symbol: *rslk*

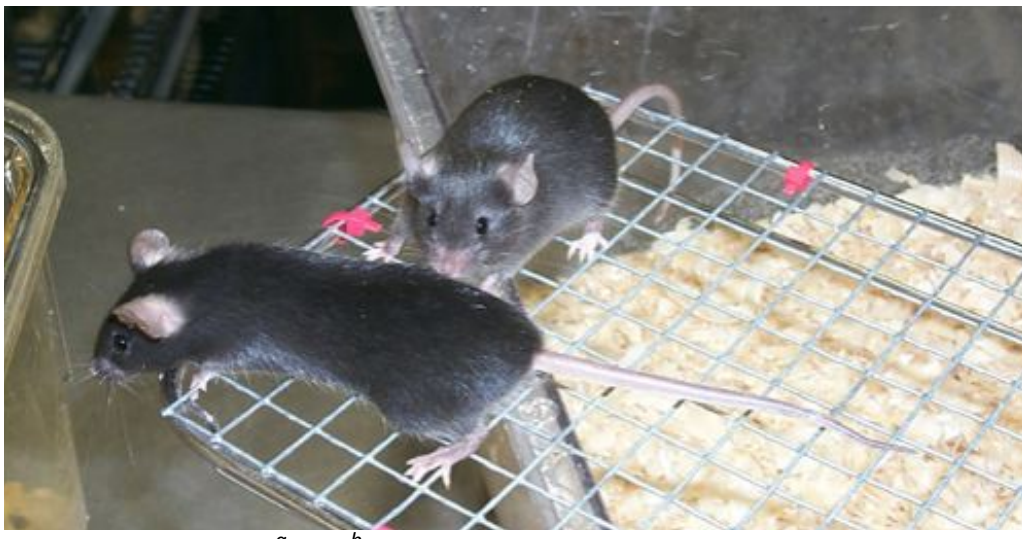
Strain of origin: B6.SJL-*Ptprc*^{a} *Pepc*^{b}/BoyJ

Current strain name: B6(SJL) *Ptprc*^{a} *Pepc*^{b}-*rslk*/GrsrJ

Stock #005574 (jaxmice.jax.org)

Phenotype categories: color

Abstract
A new spontaneous recessive mutation that causes a diluted coat and a variable sized white blaze on the ventrum in homozygotes has been identified and named recessive spotting-like (*rslk*). This mutation is strain background dependent, whereby on some strain backgrounds the subtle spotting in heterozygotes is not observed. On this background strain the subtle belly spotting has been observed in some heterozygotes. The mutation maps to Chromosome 5 in the same position as the previously described mutation recessive spotting (*rs*) (MGD 2005). A direct test for allelism was not performed because *rs* mice are available as cryopreserved embryos only.



A control B6(SJL)-*Ptprc*^{a} *Pepc*^{b}/J littermate on the right and a lighter colored *rslk* homozygous mutant on the right.

Origin and Description
Mice carrying the recessive spotting-like mutation were discovered by Andy Carlson in a production colony of B6.SJL-*Ptprc*^{a} *Pepc*^{b}/BoyJ (Stock#002014) in MP13 at the Jackson Laboratory on September 8, 2001. Mice homozygous for this spontaneous, recessive mutation are recognizable by a diluted dark gray coat color and a variable sized white blaze on the ventrum (see photo). Mice carrying the *rslk* mutation live a normal lifespan and both sexes breed well.

Genetic Analysis
Using the standard mapping procedures of The Mouse Mutant Resource, a homozygous female B6(SJL) *Ptprc*^{a} *Pepc*^{b}-*rslk*/J mouse was mated to a CAST/EiJ male. Heterozygous F1 mice from this mating were then intercrossed and produced 37 F2s that were used for linkage analysis. This new mutation was mapped to Chromosome 5 between *D5Mit135* (42cM) and *D5Mit114* (44cM) and is non-recombinant with *D5Mit235* (42 cM). The previously described recessive spotting mutation (*rs*) is also positioned at 42 cM. Of the 37 mutant F2s produced in the linkage cross 7 animals were scored as heterozygotes which is not surprising, as heterozygous mice carrying the original *rs* mutation may show subtle spotting.

A homozygous *rslk* mouse on the left and a heterozygote on the right

Pathology
A pathological screen of one mutant and one control at 8 weeks of age showed no lesions.

Discussion
Based on the phenotype and the chromosomal position of the recessive spotting-like (*rslk*) mutation it is likely a remutation to recessive spotting (*rs*), however a direct test for allelism was not performed due to the unavailability of the *rs* mice.

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References

Mouse Genome Database (MGD) Mouse Genome Informatics Project, The Jackson Laboratory, Bar, Harbor, Maine. (www.informatics.jax.org)