

## A new allele, *ho-15J*, of the *Grid2* gene

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Mutation (allele) symbol: *Grid2*<sup>*ho-15J*</sup>

Mutation name: hot foot 15 Jackson

Gene symbol: *Grid2*

Strain of origin: C3.Cg-*scb*/J

Current strain name: C3(Cg)-*Grid2*<sup>*ho-15J*</sup>/GrsrJ

Stock# 005344 (jaxmice.jax.org)

Phenotype Categories: neurological/behavioral: motor capabilities/coordination/movement anomalies

### Origin and Description

The spontaneous *ho-15J* mutation was found by Sandra Gray in the C3.Cg-*scb*/J colony in the Mouse Mutant Resource at The Jackson Laboratory in May 2002. An outcross with C57BL/6J produced normal appearing F1 hybrids and yielded 2 mutant mice in a total of 18 raised in three F2 litters; hence, this mutation is inherited as a recessive allele. When walking, homozygous mutants exhibit a slight jolting throughout the length of the body and a wobbly gait. They may slowly raise their rear feet high into the flank while holding their rear feet more rigidly than normal, but they do not exhibit the more common walking-on-hot-coals phenotype of other hotfoot mutations. Lateral and vertical head movement is much milder than that presented by *lurcher* mutants. Homozygous *ho-15J/ho-15J* mutants can be classified at three weeks of age. Homozygous females breed very well, but males do not; thus, the colony is maintained by mating homozygous females to heterozygous males. DNA from mutants and controls is available from The Jackson Laboratory DNA Resource.

### Genetic Analysis

An intercross with CAST/Ei generated 40 meioses that mapped this mutation between *D6Mit184-D6Mit3*. Since *Grid2* lies within this flanked region, a homozygous new mutant was mated to a homozygous *Grid2*<sup>*ho-4J*</sup>/*Grid2*<sup>*ho-4J*</sup> male. Twenty affected and no normal progeny were seen in two litters demonstrating that the new mutation is an allele of *Grid2*.

### Pathology

ABR tests showed that *ho-15J/ho-15J* mice have normal hearing. Ocular morphology is normal except for the retinal degeneration of the C3H background. Our routine screen of other tissues from mutants at 41 weeks of age showed no lesions.

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