Reeler 7 Jackson, a remutation of the *Reln* gene

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Mutation (allele) symbol: *Reln*$^{rl\text{-}7J}$
Mutation (allele) name: reeler 7 Jackson
Gene symbol: *Reln*
Strain of origin: C57BL/6J
Current strain name: C57BL/6J-*Reln*$^{rl\text{-}7J}$/GrsrJ
Stock #007892 (jaxmice.jax.org)
Phenotype categories: neurological

Abstract
We have identified a remutation of the reelin (*Reln*) gene by a direct test for allelism. Both the phenotype and pathology, described below, are the same as the original reeler (*rl)* mutation with the exception of earlier lethality in this new mutation.

Origin and Description
The spontaneous *Reln*$^{rl\text{-}7J}$ remutation was discovered at The Jackson Laboratory in a production colony of C57BL/6J mice by Sheila G. Haupt in 2006 and has been maintained on its original C57BL/6J background by progeny test. Mice homozygous for this recessive remutation of reeler can be recognized by two weeks of age. They have difficulty with locomotion that causes a leaning side-to-side behavior as they walk. Like original reeler homozygotes, *rl-7J* mutants are unable to keep their hindquaters upright and frequently fall over on their sides. To date no homozygotes have lived to adulthood. Heterozygotes for this remutation are normal.

Genetic Analysis
A direct test for allelism was performed by mating a homozygous C3Fe(SWV)-*Mbp*^{shi} *Reln*$^{rl\text{-}5J}$/J female mouse to a heterozygote male carrying the new mutation. This mating produced two offspring out of ten born that were affected with the reeler phenotype, proving the new mutation to be an allele of the *Reln* gene.

Pathology
A routine pathological screen done on one *Reln*$^{rl\text{-}7J}$ mutant mouse showed neuropathology identical to the original reeler mutation (MGD 2007). The *Reln*$^{rl\text{-}7J}$ mouse showed scrambled layering in the cortex, neurons of the hippocampal gyrus are scattered in irregular wavy layers and the cerebellum is small with scrambled Purkinje and granule cells.

Hearing as assessed by auditory brain stem response (ABR) testing of a homozygote male at approximately one month of age showed slightly elevated thresholds. The eyes of a nineteen-week-old male homozygote were examined with an ophthalmoscope and were determined to be normal.

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