Scrambler 3 Jackson, a new spontaneous mouse mutation in the *Dab1* gene.

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Mutation (allele) symbol: *Dab1*$^{scm\text{-}3J}$

Mutation (allele) name: scrambler 3 Jackson

Gene symbol*: Dab1*

Strain of origin: private research strain

Current strain name: B6.Cg-*Dab1*$^{scm\text{-}3J}$/GrsrJ

Stock #006408 (jaxmice.jax.org)

Phenotype categories: neurological/behavioral; abnormal motor capabilities, coordination, movement, balance, physical strength

Origin and Description
This spontaneous mutation arose in a private research colony involving both C57BL6J and CAST/EiJ inbred strains. Mutants were crossed to C57BL/6J establishing the congenic strain B6.Cg-*Dab1*$^{scm\text{-}3J}$/J. Mice homozygous for the scrambler-3 Jackson (*scm-3J*) mutation can be recognized at 14 days of age by smaller body size than littermates and it is severely unstable and unable to right itself, laying on its side continually. Homozygous mice rarely live past 3 weeks of age, and neither the female or male homozygous animals breed. The *scm-3J* colony is maintained by ovarian transplant from a mutant female *scm-3J*, breeding the host to a heterozygous colony male, and then intercrossing the heterozygous offspring. Heterozygous mice, +/*scm-3J*, live a normal life span and are good breeders.

Genetic Analysis
Based on phenotypic similarities, a direct test for allelism was performed by mating a STOCK A/A-*Dab1*^{scm}/J heterozygous female to a male heterozygous carrier of this new mutation. One mating pair was set up that produced 19 progeny, of which 3 pups had the scrambler mutant phenotype, proving allelism.

Pathology
A routine pathological screen of a three-week old *Scm-3J* homozygote animal exhibited pathology with lesions identical to the cerebella abnormalities of the original, scrambler mutation (Sweet et al., 1996). Malformations observed included a lack of cerebellar folia and disorganization of the hippocampal layers.

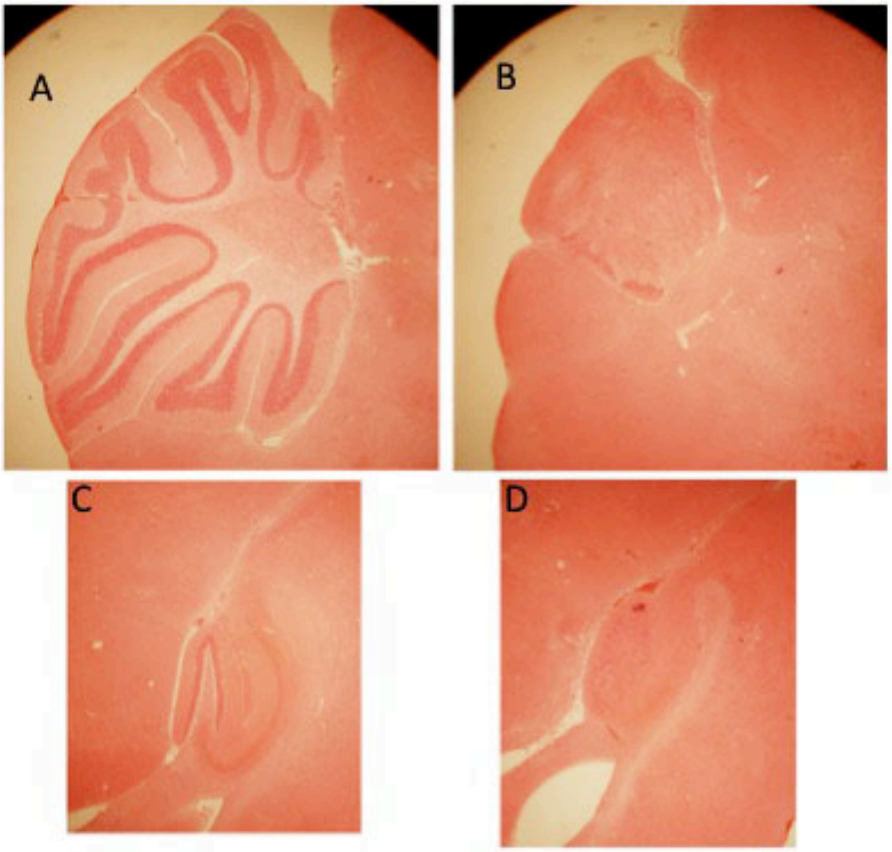

Fig. 1

H&E stained sections from control (A, C) and *Scm-3J* mutant (B, D) mouse brains showing a hypoplastic cerebellum lacking folia (B) and disorganization of the hippocampus (D) in the mutant, similar to the pathology observed in the original scrambler mouse mutation.

Acknowledgements
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References
Sweet, H et al., Scrambler a new mutation of the mouse with abnormalities of neuronal migration. *Mammalian Genome* 1996 Nov 7(11) 798-802