Brachyury-like 5, a new spontaneous mutation resembling brachyury

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Mutation (allele) symbol: *Tl5*

Mutation (allele) name: Brachyury-like 5

Strain of origin: C57BL/6J

Current strain name: C57BL/6J-*Tl5*/GrsrJ

Stock #021221 (jaxmice.jax.org)

Phenotype categories: skeletal

Origin and Description
A dominant mouse mutation that causes variably shortened tail length was discovered in a colony of C57BL/6J mice at the Jackson Laboratory. The tail is usuallly half the normal length, but can be shorter, and tail kinks are found in some mutants, but no corkscrew tails have been found.

Genetic Analysis
A short-tailed mutant was outcrossed to 129S1/SvImJ and some of the offspring were also short-tailed proving this to be a dominant mutation. Crossing the affected F1 hybrids back to C57BL/6J generated an N2 population with affected and unaffected siblings for linkage analysis. Using our standard mapping procedure this mutation was mapped to Chromosome 17 with no recombination found with SNPs rs3694565 at position 5,885,430 or rs3673763 at position 23,968,240 (GRCm38.p1). Once the map position was established, brachyury (*T*), which begins at Chromosome 17 position 8,434,423, was the most likely candidate gene based on known phenotypic characteristics, inheritance patterns, and map location. Due to map location and phenotype similarity, this new mutation has been designated brachyury like 5 (*Tl5*). This mutant, co-isogenic subline is maintained by continuous backcross of heterozygous mice to C57BL/6J.

Pathology:
The eyes of two mutants and two controls were examined by ophthalmoscopy and found to be normal. Hearing, assessed by auditory brainstem response testing (ABR) of two mutant and three control siblings showed normal hearing at 29 days of age.

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