Overview

Also Known As: CAST

Both CAST/EiJ and CASA/RkJ (Stock No. 000735) were derived from wild mice trapped in Thailand. Wild-derived mice are genetically distinct from common laboratory mice for a number of complex phenotypic characteristics and are valuable tools for...
Both CAST/EiJ and CASA/RkJ (Stock No. 000735) were derived from wild mice trapped in Thailand. CAST is often combined with the common laboratory strains to generate F1 hybrids with high levels of heterozygosity for use in genetic mapping. Unlike the wild-derived strain SPRET, male F1 mice from a CAST cross are fertile.

Like CASA, CAST is resistant to flavivirus infection. The flavivirus family includes pathogens responsible for dengue, yellow fever and several forms of encephalitis. Most common laboratory mice are sensitive to flavivirus infection. Resistance/sensitivity is conferred through the oligoA synthase Oas1b locus. In a comparison of multiple strains, CASA and CAST exhibit reduced numbers of retinal ganglion cells as compared to common laboratory strains and other wild-derived strains. In a 2015 study comparing CAST/Ei and the other Collaborative Cross inbred strains (A/J, C3H/HeJ, C57BL/6J, DBA/2J, 129S1/SvImJ, NOD/LtJ, NZO/HILtJ, and WSB/EiJ), dorsal root ganglion neurons from CAST/Ei mice demonstrate a significantly improved ability to regenerate axons in an inhibitory environment as determined by an increase in number of neurons with neurites and longer axonal process per neuron under both naive and pre-injured conditions. In addition, as compared to neurons from C57BL/6 mice, CAST/Ei neurons exhibit more extensive axonal regeneration in the spinal cord and optic nerve following injury and show greater sprouting following ischemic stroke.

Wild-derived mice are genetically distinct from common laboratory mice for a number of complex phenotypic characteristics and are valuable tools for genetic mapping, evolution and systematics research.

In 2019-2020, researchers at The Jackson Laboratory discovered this inbred strain contains the Trem2<sup>S148E</sup> allele - a naturally occurring variant at position 48351151-48351152 on Chr 17 (rs108080490 and rs107649577; Ensembl GRCm38.p6). This TC to GA transition results in a serine to glutamic acid substitution at amino acid 148 (S148E).
Genotyping Protocols
Genotyping resources and troubleshooting
Wild-derived inbred mouse strains are maintained through sibling (sister x brother) matings; no genotyping required.

Breeding Considerations
This strain is a challenging breeder.

Additional Breeding and Husbandry Support
Mating System
Sibling x Sibling
Appearance
agouti

Related Genotype: A/A

Citations
When using the CAST mouse strain in a publication, please include JAX stock #000928 in your Materials and Methods section.

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### Domestic

Pricing effective for USA, Canada and Mexico shipping destinations

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Related Strains

- All
- By Allele
- By Gene
- By Collection

All Related Strains