Also Known As: HSA LR20b

HSA LR20b transgenic mice express a human skeletal actin gene with a 220 CTG repeat expansion and exhibit some of the characteristics of myotonic dystrophy (DM). This strain may be useful for studying muscular dystrophy.

Donating Investigator
Charles Thornton, University of Rochester Medical Center

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GENETIC OVERVIEW

**Genetic Background**

?+pN1F3
(2020-11-03 00:00:00)

**Tg(HSA*LR)20bCath**

**Allele Type**

Transgenic (Inserted expressed sequence, Humanized sequence)

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RESEARCH APPLICATIONS

**Neurobiology Research**

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BASE PRICE
The HSA LR20b transgenic mice express a human skeletal actin gene (designated HSA) or ACTA1, containing a CTG repeat expansion of approximately 220 repeats. The transgene is expressed predominantly in skeletal muscle. Minor expression may occur in non-muscle cells, but has not been systematically examined. Myotonic dystrophy (DM) is the result of an expansion of a CTG repeat in the 3’ untranslated region of the DMPK gene. HSA LR20b mice express an expanded CUG repeat in the human skeletal actin transgene mRNA, rather than the DMPK gene. HSA LR20b homozygous mice exhibit electromyographic myotonia as early as 4 weeks of age. Muscle histopathology is consistent with some of the characteristics of myotonic dystrophy (DM) including increases in central nuclei and ring fibers, and variability in fiber size in the absence of muscle fiber necrosis. However, these mice exhibit muscle weakness and degeneration that is less severe than myotonic dystrophy patients. This strain may be useful for studying muscular dystrophy.

**Development**

**Control Suggestions**

**Selected References**

**Genetics**

**Tg(HSA*LR)20bCath**

**Disease/Phenotype**

**Disease Terms**

**Research Areas By Phenotype**

**Mammalian Phenotype Terms by Genotype**

**References**
Genotyping Protocols
Standard PCR: Tg(HSA*LR)20bCath
QPCR: Tg(HSA*LR)20bCath
Genotyping resources and troubleshooting

Breeding Considerations
When maintaining a live colony, these mice are bred by homozygous matings. Size of repeats should be monitored in breeders at every generation.

Additional Breeding and Husbandry Support
Mating System
Homozygote x Homozygote

Citation
When using the HSA LR20b mouse strain in a publication, please cite the originating article(s) and include JAX stock #032031 in your Materials and Methods section.

Animal Health Reports
Facility Barrier Level Descriptions

 AX18 (Maximum)

Table: Pricing & Availability

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