B6.129S6-Hfe<sup>tm2Nca</sup>/J

Stock No: 017784 | Hfe-

- Congenic, Targeted Mutation

PLACE ORDER

Live mice available in varying quantities. Ask Customer Service for details.

Overview

Also Known As: Hfe-
These mice carry a targeted mutation of Hfe, hemochromatosis, exhibit iron loading, and have applications in studies of hereditary hemochromatosis, iron homeostasis and innate immune response.

Donating Investigator
Nancy C. Andrews, Duke University School of Medicine
### Details

#### Detailed Description

Hfe, hemochromatosis, is involved in regulation of intestinal iron absorption. Mice that are homozygous for this targeted mutation are viable, fertile, normal in size and recapitulate human hereditary hemochromatosis. Hereditary hemochromatosis is a genetic disorder of iron hyperabsorption that results in hyperferremia and iron loading in tissues. By 4 weeks of age, homozygotes on the 129S6/SvEvTac background display elevated blood iron levels and up to 2.2-fold higher hepatic nonheme iron than controls. At 10 weeks of age, homozygotes on the 129S6/SvEvTac background have up to 3.3-fold higher hepatic nonheme iron than controls. Iron loading is less severe in homozygotes on the C57BL/6J background. Heterozygotes exhibit some iron loading. Macrophages isolated from homozygotes have impaired TLR4/TRAM/TRIF pathway signalling, with reduced production of TNF-alpha and IL-6. When challenged with Salmonella typhimurium induced enterocolitis, homozygotes exhibit a less severe inflammatory response. Expression of Hamp (hepcidin antimicrobial peptide) is reduced in homozygotes. The Donating Investigator notes that the level of iron loading in mutant animals varies based on the iron content of the diet, breeding strategy, and other factors.

#### Development

#### Control Suggestions
Genotyping Protocols
Separated PCR: Hfe\textsuperscript{tm2Nca}
Separated MCA: Hfe\textsuperscript{tm2Nca}
Genotyping resources and troubleshooting

Dietary Information
LabDiet\textsuperscript{®} 5K52 formulation (6% fat)

Breeding Considerations
When maintaining a live colony, these mice can be bred as homozygotes.

Additional Breeding and Husbandry Support

Mating System
Homozygote x Homozygote

Citation
When using the Hfe\textsuperscript{tm2Nca} strain in a publication, please cite the originating article(s) and include JAX stock #017784 in your Materials and Methods section.

Animal Health Reports
Facility Barrier Level Descriptions

F6829 (Standard)

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