Overview

Nrf2 KO, NRF2-, Nrf2 Nfe2l2 (NRF2) knockout mice may be useful for studying oxidative stress in the pathogenesis of age-related macular degeneration, diabetes, Parkinson's disease, and other inflammatory degenerative diseases as well as studies of cancer, multiple sclerosis, liver cirrhosis, atherosclerosis, injury and wound healing, and more.

Donating Investigator

Michael L. Freeman, Vanderbilt University

Genetic Overview

Genetic Background | Generation
--- | ---
N10pN1+N1F11 (2019-12-27 00:00:00)

\[ Nfe2l2 \]

Allele Type | Gene Symbol | Gene Name
--- | --- | ---
Targeted (Null/Knockout) | Nfe2l2 | nuclear factor, erythroid derived 2, like 2

Research Applications

Research Tools
Immunology, Inflammation and Autoimmunity Research
Diabetes and Obesity Research
Sensorineural Research
Mouse/Human Gene Homologs
Neurobiology Research
Cancer Research
Cardiovascular Research
In this NRF2 knockout strain, a β-galactosidase (lacZ) reporter followed by a neomycin resistance (neo) cassette replaces exon 5 and part of exon 4 encoding the nuclear factor, erythroid derived 2, like 2 gene (Nfe2l2) gene, abolishing gene function. Homozygotes are viable, fertile, and normal in size. NRF2, a member of the “cap 'n' collar” (CNC) subfamily of the basic region-leucine zipper transcription factors, is a regulator of endogenous antioxidant protection, microglial function, and chronic neuroinflammation. Inactivation of the CNC, DNA binding, and leucine zipper domains in Nrf2-/- mice results in age-related macular degeneration (AMD)-like retinal pathology, spontaneous choroidal neovascularization (CNV), increased sensitivity to toxins, impaired adipogenesis, abnormal mitochondria, and an increase in proinflammatory gene expression in microglia and astrocytes. The donating investigator reports that lacZ failed to generate any detectable β-galactosidase activity.

**Genetics**

* Nfe2l2tm1Ywk

**Disease/Phenotype**

**Disease Terms**
Genotyping Protocols
Standard PCR: Nfe2l2
Genotyping resources and troubleshooting

Dietary Information
New Diet as of March 2015: Lab Diet® 5K0Q (6% fat)

Breeding Considerations
When maintaining a live colony, homozygous mice may be bred together. Our experience has been that homozygous breeders produced small litters.

Additional Breeding and Husbandry Support
Mating System
Homozygote x Homozygote
Appearance
Black or Agouti*
*contact Technical Information Services via Customer Service for details

Citation
When using the Nrf2- mouse strain in a publication, please cite the originating article(s) and include JAX stock #017009 in your Materials and Methods section.

Animal Health Reports
Facility Barrier Level Descriptions

Available Now
Live mice available in varying quantities. Ask Customer Service for details.
## Pricing effective for USA, Canada and Mexico shipping destinations

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<th>AGE</th>
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### Related Products and Services

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**Terms Of Use**

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Phone: 207-288-6470
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### Related Strains

| All | By Allele | By Gene | By Collection |

All Related Strains