**B6.129X1-Nfe2l2tm1Ywk/J**

Stock No: 017009 | Nrf2^−

- Congenic, Targeted Mutation

**Also Known As: Nrf2 KO, NRF2^−, Nrf^−**

These Nfe2l2tm1Ywk (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

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**GENETIC OVERVIEW**

<table>
<thead>
<tr>
<th>Genetic Background</th>
<th>Generation</th>
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<tbody>
<tr>
<td></td>
<td>N10pN1+N1F6</td>
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<td>(2018-10-23 00:00:00)</td>
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</table>

**Nfe2l2tm1Ywk**

<table>
<thead>
<tr>
<th>Allele Type</th>
<th>Gene Symbol</th>
<th>Gene Name</th>
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<tbody>
<tr>
<td>Targeted (Null/Knockout)</td>
<td>Nfe2l2</td>
<td>nuclear factor, erythroid derived 2, like 2</td>
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**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.
Genotyping Protocols
Standard PCR: Nfe2l2\textsuperscript{tm}1Ywk
High Resolution Melting: Nfe2l2\textsuperscript{tm}1Ywk
Genotyping resources and troubleshooting

Dietary Information
New Diet as of March 2015: Lab Diet\textsuperscript{*} 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 Nfe2l2\textsuperscript{tm}1Ywk mouse strain in a publication, please cite the originating article(s) and include JAX stock #017009 in your Materials and Methods section.

Facility Barrier Level Descriptions
AX12 (Maximum)

Pricing & Availability
0–2 week average lead time for 10 or more mice with age range

Repository Live

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<thead>
<tr>
<th>AGE</th>
<th>SEX</th>
<th>GENOTYPE</th>
<th>PRICE</th>
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<td>Male</td>
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<td>Homozygous for Nfe2l2\textsuperscript{tm}1Ywk</td>
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Phone: 207-288-6470
Email: TechTran@jax.org

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