

B6N.129X1(B6J)-*Msra*^{tm1Jmo}/RlevMmjax
MMRRC Stock No: **50602-JAX** | *Msra*^{-/-}

 Congenic, Targeted Mutation

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Donating Investigator

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Geumsoo Kim, LB/NHLBI/NIH

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GENETIC OVERVIEW

Genetic Background

Generation

N10+pN1
(2019-11-06 00:00:00)

Msra^{tm1Jmo}

Allele Type

Targeted (Null/Knockout)

Gene Symbol

Msra

Gene Name

methionine sulfoxide reductase A

VIEW GENETICS

RESEARCH APPLICATIONS

Metabolism Research

VIEW ALL RESEARCH APPLICATIONS

Details

Detailed Description

The *Msra* (methionine sulfoxide reductase A) gene encodes an enzyme involved in the reduction of methionine sulfoxide to methionine and functions as a regulator of antioxidant defense by scavenging intracellular reactive oxygen species (ROS). *Msra* knock-out mice contain a neomycin cassette inserted into exon 2 (containing active site of the protein). Mice that are homozygous for the targeted mutation are viable and fertile with no overt phenotype. Mice exhibit enhanced sensitivity to oxidative stress (100% oxygen) including higher tissue levels of oxidized protein (carbonyl derivative) in liver, kidney and lung (and to a lesser extent in brain) and a decreased ability to up-regulate expression of thioredoxin reductase in the brain and liver. These mice may be useful for studying oxidative stress.

Development

Control Suggestions

Selected References

Genetics

Msra^{tm1Jmo}

Disease/Phenotype

Disease Terms

Research Areas By Phenotype

Mammalian Phenotype Terms by Genotype

References

Technical Support

Genotyping Protocols

Standard PCR:[Laragen](#)

QPCR:[Generic Neo Quantitative PCR-QPCR- 1.2](#)

QPCR:[Generic Neo Quantitative PCR-QPCR- 1.2](#)

Standard PCR:[Generic Neo](#)

Probe:[Generic Neo](#)

Standard PCR:[Msra-alternate6](#)

[Genotyping resources and troubleshooting](#)

Breeding Considerations

When maintaining a live colony, these mice are bred by homozygous sibling matings.

[Additional Breeding and Husbandry Support](#)

Mating System

Homozygote x Homozygote

Citation

When using the *MsrA*⁻ mouse strain in a publication, please [cite the originating article\(s\)](#) and include MMRRC stock #50602 in your Materials and Methods section.

Animal Health Reports

[Facility Barrier Level Descriptions](#)

 [AX18 \(Maximum\)](#)

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