

B6(Cg)-Ncf1^{m1J}/J

Stock No: **004742**

 Coisogenic, Spontaneous Mutation

Live colonies will be removed soon

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mice homozygous for *Ncf1^{m1J}* spontaneous mutation fail to produce superoxide upon stimulation *in vitro* with *N*-formyl-methionyl-leucyl-phenylalanine (fMLP) or phorbol 12-myristate 13-acetate (PMA).

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GENETIC OVERVIEW

Genetic Background

Generation

N3+N3F5

(2020-04-09 00:00:00)

Ncf1^{m1J}

Alele Type

Gene Symbol

Gene Name

Spontaneous

Ncf1

neutrophil cytosolic factor 1

VIEW GENETICS

RESEARCH APPLICATIONS

Mouse/Human Gene Homologs

Research Tools

Hematological Research

Immunology, Inflammation and Autoimmunity Research

VIEW ALL RESEARCH APPLICATIONS

BASE PRICE

Starting at:

\$236.78 Domestic price for female 4-week

\$2,854.50 Domestic price Cryo Recovery

V I E W P R I C E L I S T

Details

Detailed Description

Peritoneal neutrophils and macrophages, bone marrow cells and neutrophils isolated from bone marrow of mice homozygous for *Ncf1*^{m1J} fail to produce superoxide upon stimulation *in vitro* with *N*-formyl-methionyl-leucyl-phenylalanine (fMLP) or phorbol 12-myristate 13-acetate (PMA), as determined by kinetic spectrophotometric analysis of cytochrome c reduction. Western blot analysis detected no full-length NCF1/p47^{phox} protein in cells from these mice; a faint band of slightly smaller molecular size than the wild type NCF1 protein was observed on probing with antibodies to NCF1. To exclude the possibility that the NCF1 protein is produced in cells of mutant mice but is degraded rapidly by endogenous proteases, bone marrow cells were isolated and samples prepared for western blot analysis in the presence of diisopropyl fluorophosphate (DFP); no difference was observed upon analysis of freshly prepared cell lysates made with and without DFP, indicating that NCF1 protein is not expressed in mutant cells (Huang *et al.* 2000).

Analysis for other NADPH oxidases involved in neutrophil superoxide production revealed that NCF2/p67^{phox} was present at wild type levels and CYBB/gp91^{phox} and CYBA/p22^{phox} were expressed at higher than wild type levels. Other neutrophil products were assayed and found not to differ in bone marrow cells of C57BL/6J vs. mutant mice: GR-1, a granulocyte marker present on approximately 40% of marrow cells by fluorescence activated cell sorting (FACS) analysis; NCF4/p40^{phox} and RAC1/RAC2 proteins, analyzed by western blot analysis; and expression of mRNAs encoding the granule proteins myeloperoxidase, elastase, cathepsin, lysozyme, lactoferrin and gelatinase as detected by reverse transcriptase - polymerase chain reaction (RT-PCR) (Huang *et al.* 2000).

The response of *Ncf1*^{m1J}/*Ncf1*^{m1J} mice to infectious or irritant (inflammatory stimulus) challenge has not been investigated (Huang *et al.* 2000). However, mice homozygous for the targeted mutation *Ncf1*^{tm1Shl} (Stock No. 027331) - which disrupts the gene near the point of the *Ncf1*^{m1J} mutation and, like the latter, results in failure of phagocytes to generate a superoxide burst following PMA stimulation *in vitro* - developed spontaneous infections with a variety of microorganisms including *Staphylococcus xylosum*, *Lactobacillus*, a hyaline septate mold and the fungus *Paecilomyces*, despite being maintained under specific pathogen free conditions. Ten-fold more *Staphylococcus aureus* bacteria survived intracellularly following *in vitro* uptake by phagocytes in blood from these mice than from control littermates, demonstrating a defect in the intracellular bactericidal activity of the mutant mice. Following intraperitoneal injection of the sterile irritant thioglycolate, twice as many leukocytes were recruited to the peritoneal cavities of *Ncf1*^{tm1Shl} homozygous mice than of littermate controls; proportions of neutrophils in mutant and control exudates were similar (Jackson *et al.*, *J Exp Med* 182:751-758 1995).

Development

Control Suggestions

Selected References

Genetics

– Disease/Phenotype

+ Disease Terms

+ Research Areas By Phenotype

+ Mammalian Phenotype Terms by Genotype

+ References

– Technical Support

C O N T A C T T E C H N I C A L S U P P O R T

Genotyping Protocols

Restriction Enzyme Digest:[Ncf1](#)

Pyrosequencing:[Ncf1](#)

[Genotyping resources and troubleshooting](#)

Dietary Information

LabDiet® 5K52 formulation (6% fat)

Mating System

Homozygote x Homozygote

Citation

When using the B6(Cg)-*Ncf1^{m1J}*/J mouse strain in a publication, please [cite the originating article\(s\)](#) and include JAX stock #004742 in your Materials and Methods section.

Animal Health Reports

[Facility Barrier Level Descriptions](#)

 [AX10 \(Standard\)](#)

– Pricing & Availability



Live colonies will be removed soon

Available

Domestic Internatio

Pricing effective for USA, Canada and Mexico shipping destinations

Live Mouse			
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	Male	Homozygous for Ncf1 ^{m1J}	\$236.78
5 weeks	Female	Homozygous for Ncf1 ^{m1J}	\$236.78
	Male	Homozygous for Ncf1 ^{m1J}	\$236.78
6 weeks	Female	Homozygous for Ncf1 ^{m1J}	\$236.78
	Male	Homozygous for Ncf1 ^{m1J}	\$236.78
7 weeks	Female	Homozygous for Ncf1 ^{m1J}	\$236.78
	Male	Homozygous for Ncf1 ^{m1J}	\$236.78
8 weeks	Female	Homozygous for Ncf1 ^{m1J}	\$236.78
	Male	Homozygous for Ncf1 ^{m1J}	\$236.78
9 weeks	Female	Homozygous for Ncf1 ^{m1J}	\$236.78
	Male	Homozygous for Ncf1 ^{m1J}	\$236.78
10 weeks	Female	Homozygous for Ncf1 ^{m1J}	\$236.78
	Male	Homozygous for Ncf1 ^{m1J}	\$236.78
11 weeks	Female	Homozygous for Ncf1 ^{m1J}	\$236.78
	Male	Homozygous for Ncf1 ^{m1J}	\$236.78
12 weeks	Female	Homozygous for Ncf1 ^{m1J}	\$236.78
	Male	Homozygous for Ncf1 ^{m1J}	\$236.78

Cryorecovery - Domestic Pricing

SERVICE/PRODUCT	DESCRIPTION	PRICE
Cryo Recovery	Heterozygous for Ncf1<m1J>	\$2,854.50

Related Products and Services

Frozen Mouse Embryo	B6(Cg)-Ncf1<m1J>/J	\$2595.00
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