

Resource Summary Report

Generated by [dkNET](#) on Sep 7, 2026

NOD.Cg-Ifng^{tm1Ts} H2^{h4} CD40lg^{tm1Imx}/HbmMmmh

RRID:MMRRC_037631-MU

Type: Organism

Proper Citation

RRID:MMRRC_037631-MU

Organism Information

URL: https://www.mmrrc.org/catalog/sds.php?mmrrc_id=37631

Proper Citation: RRID:MMRRC_037631-MU

Description: Mus musculus with name NOD.Cg-Ifng^{tm1Ts} H2^{h4} CD40lg^{tm1Imx}/HbmMmmh from MMRRC.

Species: Mus musculus

Notes: Research areas: Immunology and Inflammation; Mutation Type: Targeted Mutation ; Collection: Mullen

Phenotype: increased leukocyte cell number [MP:0000218]| increased monocyte cell number [MP:0000220]| extramedullary hematopoiesis [MP:0000240]| increased granulocyte number [MP:0000322]| abnormal spleen morphology [MP:0000689]| enlarged spleen [MP:0000691]| abnormal lymph node size [MP:0000701]| enlarged lymph nodes [MP:0000702]| increased body weight [MP:0001260]| decreased body weight [MP:0001262]| increased metastatic potential [MP:0001272]| abnormal response to new environment [MP:0001413]| altered susceptibility to infection [MP:0001793]| abnormal humoral immune response [MP:0001800]| decreased IgG level [MP:0001805]| decreased IgM level [MP:0001806]| decreased IgA level [MP:0001807]| abnormal inflammatory response [MP:0001845]| increased inflammatory response [MP:0001846]| brain inflammation [MP:0001847]| kidney inflammation [MP:0001859]| liver inflammation [MP:0001860]| lung inflammation [MP:0001861]| stomach inflammation [MP:0001873]| decreased inflammatory response [MP:0001876]| abnormal lactation [MP:0001882]| mammary gland alveolar hyperplasia [MP:0001884]| decreased litter size [MP:0001935]| abnormal lung volume [MP:0001942]| increased airway responsiveness [MP:0001952]| emphysema [MP:0001958]| increased B cell derived lymphoma incidence [MP:0002023]| increased T cell derived lymphoma incidence [MP:0002024]| increased lung adenocarcinoma incidence [MP:0002027]| increased sarcoma incidence [MP:0002032]| increased carcinoma incidence [MP:0002038]| increased pituitary adenoma incidence [MP:0002041]| decreased tumor incidence [MP:0002052]| premature death [MP:0002083]

abnormal spleen size [MP:0002224]| abnormal pulmonary alveolus morphology [MP:0002270]| decreased airway responsiveness [MP:0002335]| abnormal lymph node cortex morphology [MP:0002343]| abnormal lymph node primary follicle morphology [MP:0002345]| abnormal lymph node secondary follicle morphology [MP:0002346]| abnormal spleen red pulp morphology [MP:0002356]| abnormal spleen white pulp morphology [MP:0002357]| abnormal dendritic cell physiology [MP:0002376]| increased susceptibility to bacterial infection [MP:0002412]| increased susceptibility to viral infection [MP:0002418]| abnormal adaptive immunity [MP:0002420]| altered susceptibility to autoimmune disorder [MP:0002425]| abnormal macrophage physiology [MP:0002451]| abnormal dendritic cell antigen presentation [MP:0002455]| abnormal B cell physiology [MP:0002459]| decreased immunoglobulin level [MP:0002460]| increased immunoglobulin level [MP:0002461]| abnormal immunoglobulin level [MP:0002490]| decreased IgE level [MP:0002492]| increased IgE level [MP:0002497]| abnormal type IV hypersensitivity reaction [MP:0002534]| glomerulonephritis [MP:0002743]| decreased vertical activity [MP:0002757]| albuminuria [MP:0002871]| increased circulating alanine transaminase level [MP:0002941]| abnormal cytokine secretion [MP:0003009]| abnormal redox activity [MP:0003186]| small intestinal inflammation [MP:0003306]| abnormal tumor morphology [MP:0003448]| increased fear-related response [MP:0003459]| abnormal pancreatic beta cell physiology [MP:0003562]| increased ovarian carcinoma incidence [MP:0003579]| increased autoantibody level [MP:0003725]| decreased autoantibody level [MP:0003726]| abnormal nitric oxide homeostasis [MP:0003957]| abnormal lung vasculature morphology [MP:0004007]| abnormal maternal decidual layer morphology [MP:0004256]| decreased length of allograft survival [MP:0004752]| decreased anti-nuclear antigen antibody level [MP:0004795]| decreased anti-double stranded DNA antibody level [MP:0004798]| increased susceptibility to experimental autoimmune encephalomyelitis [MP:0004799]| decreased susceptibility to systemic lupus erythematosus [MP:0004802]| decreased susceptibility to autoimmune diabetes [MP:0004804]| abnormal immune tolerance [MP:0005000]| increased eosinophil cell number [MP:0005011]| increased lymphocyte cell number [MP:0005013]| increased T cell number [MP:0005015]| abnormal response to infection [MP:0005025]| decreased susceptibility to parasitic infection [MP:0005026]| increased susceptibility to parasitic infection [MP:0005027]| abnormal MHC II cell surface expression on macrophages [MP:0005040]| impaired natural killer cell mediated cytotoxicity [MP:0005070]| abnormal cytotoxic T cell physiology [MP:0005078]| decreased double-negative T cell number [MP:0005089]| cachexia [MP:0005150]| abnormal response to injury [MP:0005164]| decreased susceptibility to injury [MP:0005166]| abnormal renal glomerulus morphology [MP:0005325]| atherosclerotic lesions [MP:0005338]| decreased susceptibility to autoimmune disorder [MP:0005351]| abnormal Langerhans cell physiology [MP:0005362]| increased susceptibility to fungal infection [MP:0005399]| abnormal skin physiology [MP:0005501]| corneal vascularization [MP:0005542]| decreased circulating creatinine level [MP:0005554]| increased blood urea nitrogen level [MP:0005565]| decreased susceptibility to type IV hypersensitivity reaction [MP:0005616]| increased susceptibility to type IV hypersensitivity reaction [MP:0005617]| abnormal response to transplant [MP:0005671]| abnormal mammary gland growth during pregnancy [MP:0006269]| increased NK T cell number [MP:0008039]| abnormal uterine NK cell morphology [MP:0008054]| increased CD4-positive [MP:0008074]| alpha beta T cell number [MP:0008078]| increased CD8-positive [MP:0008135]| alpha-beta T cell number [MP:0008466]| small Peyer's patches [MP:0008474]| enlarged mesenteric lymph nodes [MP:0008496]| absent spleen germinal center [MP:0008497]| decreased IgG2a level [MP:0008498]| decreased IgG2b level [MP:0008499]| decreased IgG3 level [MP:0008523]| increased IgG1 level [MP:0008567]| absent lymph node germinal center [MP:0008596]|

decreased interferon-gamma secretion [MP:0008660] increased circulating interleukin-6 level [MP:0008661] increased interleukin-10 secretion [MP:0008663] decreased interleukin-10 secretion [MP:0008681] increased interleukin-12 secretion [MP:0008687] increased interleukin-17 secretion [MP:0008699] increased interleukin-2 secretion [MP:0008702] increased interleukin-4 secretion [MP:0008713] increased interleukin-5 secretion [MP:0008770] abnormal cytokine level [MP:0008828] decreased survivor rate [MP:0008874] abnormal lymph node cell ratio [MP:0009099] decreased physiological sensitivity to xenobiotic [MP:0009246] abnormal uterine NK cell physiology [MP:0009336] pale spleen [MP:0009394] increased splenocyte proliferation [MP:0009419] increased uterine NK cell number [MP:0009643] skeletal muscle fibrosis [MP:0009763] abnormal urine homeostasis [MP:0009766] increased sensitivity to induced morbidity/mortality [MP:0009788] increased sensitivity to xenobiotic induced morbidity/mortality [MP:0009791] increased susceptibility to bacterial infection induced morbidity/mortality [MP:0009828] increased susceptibility to viral infection induced morbidity/mortality [MP:0010210] increased tumor latency [MP:0010308] abnormal circulating cytokine level [MP:0010574] decreased tumor latency [MP:0010639] aorta dilation [MP:0010659] altered tumor pathology [MP:0010740] abdominal aorta aneurysm [MP:0010750] abnormal dendritic cell chemotaxis [MP:0010751] increased susceptibility to parasitic infection induced morbidity/mortality [MP:0010760] decreased susceptibility to parasitic infection induced morbidity/mortality [MP:0010766] abnormal macrophage chemotaxis [MP:0011086] abnormal NK cell physiology [MP:0011320] postnatal lethality [MP:0011427] incomplete penetrance [MP:0012431] abnormal glomerular capillary morphology [MP:0013239] mesangial cell hyperplasia [MP:0013590] increased lymphoma incidence [MP:0030466] decreased bone mineral density [MP:0000063] abnormal thalamus morphology [MP:0000832] abnormal immune system physiology [MP:0001790] decreased IgA level [MP:0001807] abnormal antigen presentation [MP:0001835] neurodegeneration [MP:0002229] abnormal lymph node morphology [MP:0002339] decreased immunoglobulin level [MP:0002460] decreased IgE level [MP:0002492] abnormal blood coagulation [MP:0002551] spongiform encephalopathy [MP:0002654] abnormal immune system organ morphology [MP:0002722] loss of cortex neurons [MP:0003241] abnormal leukocyte adhesion [MP:0003628] abnormal nervous system physiology [MP:0003633] abnormal class switch recombination [MP:0004816] abnormal T cell clonal deletion [MP:0005002] abnormal thrombosis [MP:0005048] increased susceptibility to prion infection [MP:0005364] increased bleeding time [MP:0005606] abnormal vascular endothelial cell morphology [MP:0006055] decreased cerebral infarction size [MP:0006058] lymph node hypoplasia [MP:0008101] absent spleen germinal center [MP:0008474] decreased IgG1 level [MP:0008495] decreased IgG2b level [MP:0008497] absent lymph node germinal center [MP:0008523] microgliosis [MP:0008918] decreased platelet aggregation [MP:0009549] decreased trabecular bone mass [MP:0010873] decreased compact bone mass [MP:0010962] abnormal cytokine secretion [MP:0003009] thyroid inflammation [MP:0003504] insulinitis [MP:0004031] decreased susceptibility to autoimmune diabetes [MP:0004804] periinsulinitis [MP:0005580] decreased physiological sensitivity to xenobiotic [MP:0008874]

Affected Gene: IfngCd40lg

Catalog Number: 037631-MU

Background: Targeted Mutation

Database: Mutant Mouse Resource and Research Center (MMRRC)

Database Abbreviation: MMRRC

Source References: [PMID:23776180](#)

Alternate IDs: MMRRC_37631-MU, MMRRC_037631, MMRRC_37631

Organism Name: NOD.Cg-*Ifng*^{tm1Ts} *H2h4* *CD40lg*^{tm1Imx}/HbmMmmh

Record Creation Time: 20230308T055152+0000

Record Last Update: 20260905T110932+0000

Ratings and Alerts

No rating or validation information has been found for NOD.Cg-*Ifng*^{tm1Ts} *H2h4* *CD40lg*^{tm1Imx}/HbmMmmh.

Warning: Warning. Researchers have noted that this genotype does not sufficiently model human systemic lupus erythematosus.

Data and Source Information

Source: [Integrated Animals](#)

Source Database: Mutant Mouse Resource and Research Center (MMRRC)

Usage and Citation Metrics

We found 6 mentions in open access literature.

Listed below are recent publications. The full list is available at [dkNET](#) .

Ballesteros-Tato A, et al. (2013) CD4+ T helper cells use CD154-CD40 interactions to counteract T reg cell-mediated suppression of CD8+ T cell responses to influenza. The Journal of experimental medicine, 210(8), 1591.

Dibra D, et al. (2013) The cell-to-cell coordination between activated T cells and CpG-stimulated macrophages synergistically induce elevated levels of IL-10 via NF-??B1, STAT3, and CD40/CD154. Cell communication and signaling : CCS, 11, 95.

Sokke Umeshappa C, et al. (2012) CD154 and IL-2 signaling of CD4+ T cells play a critical role in multiple phases of CD8+ CTL responses following adenovirus vaccination. PloS one, 7(10), e47004.

Lapchak PH, et al. (2012) Platelet-associated CD40/CD154 mediates remote tissue damage after mesenteric ischemia/reperfusion injury. PloS one, 7(2), e32260.

Lee BO, et al. (2003) CD40-deficient, influenza-specific CD8 memory T cells develop and function normally in a CD40-sufficient environment. The Journal of experimental medicine, 198(11), 1759.

Green EA, et al. (2000) Neonatal tumor necrosis factor alpha promotes diabetes in nonobese diabetic mice by CD154-independent antigen presentation to CD8(+) T cells. The Journal of experimental medicine, 191(2), 225.