

Mx1/2/3 (C-1): sc-166412

BACKGROUND

The Dynamin family of microtubule-associated proteins function as GTPases that are involved in microtubule bundling and endocytosis. In mice, Mx2 (myxovirus resistance protein 2) and Mx1 (myxovirus resistance protein 1) are members of the Dynamin family that are involved in the immune response to viral infections. Localized to the cytoplasm, Mx2 contains one GED domain and is expressed in response to viral infection or treatment by IFN- α /IFN- β . Once expression is induced, Mx2 accumulates in the cytoplasm and inhibits the replication of vesicular stomatitis virus (VSV), thereby conferring resistance to VSV infection. Unlike Mx2, Mx1 is localized to the nucleus where, upon induction by IFN- α /IFN- β , it provides selective resistance to infection by the highly lethal H5N1 influenza virus. In humans, MxA and MxB function in a similar manner to Mx1 and Mx2, conferring resistance to specific target viruses. Mx3 is a rat-specific member of the myxovirus resistance protein family.

CHROMOSOMAL LOCATION

Genetic locus: MX1/MX2 (human) mapping to 21q22.3; Mx1/Mx2 (mouse) mapping to 16 C4.

SOURCE

Mx1/2/3 (C-1) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 47-73 near the N-terminus of Mx1 of human origin.

PRODUCT

Each vial contains 200 μ g IgG $_1$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Mx1/2/3 (C-1) is available conjugated to agarose (sc-166412 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-166412 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166412 PE), fluorescein (sc-166412 FITC), Alexa Fluor® 488 (sc-166412 AF488), Alexa Fluor® 546 (sc-166412 AF546), Alexa Fluor® 594 (sc-166412 AF594) or Alexa Fluor® 647 (sc-166412 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166412 AF680) or Alexa Fluor® 790 (sc-166412 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-166412 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

Mx1/2/3 (C-1) is recommended for detection of Mx1 and Mx2 of human and mouse origin, and Mx1, Mx2 and Mx3 of rat origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

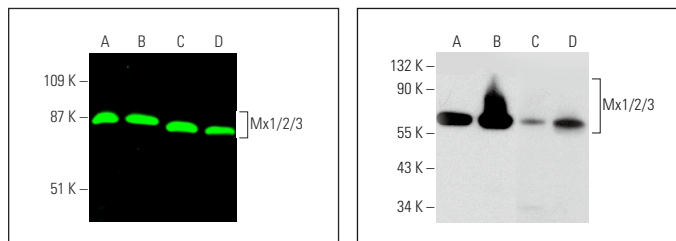
Mx1/2/3 (C-1) is also recommended for detection of Mx1 and Mx2 in additional species, including equine and bovine.

Molecular Weight of Mx1/Mx2/Mx3: 72/73/75 kDa.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



Mx1/2/3 (C-1): sc-166412. Near-infrared western blot analysis of Mx1/2/3 expression in HEK293T (A), U-937 (B), LNCaP (C) and Hep G2 (D) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgG κ BP-CFL 680: sc-516180.

Mx1/2/3 (C-1): sc-166412. Western blot analysis of Mx1/2/3 expression in Jurkat (A), U-937 (B) and human PBL (C) whole cell lysates and human spleen tissue extract (D).

SELECT PRODUCT CITATIONS

- Biesold, S.E., et al. 2011. Type I interferon reaction to viral infection in interferon-competent, immortalized cell lines from the African fruit bat *Eidolon helvum*. PLoS ONE 6: e28131.
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- Wang, Y., et al. 2019. Early pregnancy induces expression of Stat1, OAS1 and CXCL10 in ovine spleen. Animals 9: 882.
- Zhang, L., et al. 2020. Relative abundance of interferon-stimulated genes Stat1, OAS1, CXCL10 and Mx1 in ovine lymph nodes during early pregnancy. Anim. Reprod. Sci. 214: 106285.
- Kuriyama, Y., et al. 2021. Coordination of retrotransposons and type I interferon with distinct interferon pathways in dermatomyositis, systemic lupus erythematosus and autoimmune blistering disease. Sci. Rep. 11: 23146.
- Han, X., et al. 2022. Selection of early pregnancy specific proteins and development a rapid immunochromatographic test strip in cows. Theriogenology 187: 127-134.
- Chen, J., et al. 2023. Porcine Mx proteins inhibit pseudorabies virus replication through interfering with early gene synthesis. Vet. Microbiol. 280: 109706.
- Cao, J., et al. 2024. Pregnancy influences expression of interferon-stimulated genes, progesterone receptor and progesterone-induced blocking factor in ovine thyroid. Anim. Biosci. 37: 1377-1386.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

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