

DAP12 (A-4): sc-166084

BACKGROUND

Natural killer (NK) cells are regulated by stimulatory and inhibitory signals from a variety of receptors. Three main receptor families are responsible for NK cells recognition of MHC I molecules, including Ly-49, CD94/NKG2 and KIR (killer-cell inhibitory receptor). DAP12 is a phosphoprotein that is involved in the activation of NK cells. This protein interacts with membrane glycoproteins of the KIR family, resulting in cellular activation. DAP12 also binds to CD94/NKG2C, an activating NK cell receptor belonging to the C-type lectin superfamily. Additional proteins that bind to DAP12 include Ly-49D and Ly-49H, which associate with DAP12 in the plasma membrane. Phosphorylated DAP12 binds to ZAP-70 and Syk, suggesting that the activation pathway may be similar to that of the T and B cell antigen receptors.

REFERENCES

1. Lanier, L.L. 1998. NK cell receptors. *Annu. Rev. Immunol.* 16: 359-393.
2. Lanier, L.L., et al. 1998. Association of DAP12 with activating CD94/NKG2C NK cell receptors. *Immunity* 8: 693-701.
3. Smith, K.M., et al. 1998. Ly-49D and Ly-49H associate with mouse DAP12 and from activating receptors. *J. Immunol.* 161: 7-10.
4. Lanier, L.L., et al. 1998. Immunoreceptor DAP12 bearing a tyrosine-based activation motif is involved in activating NK cells. *Nature* 391: 703-707.

CHROMOSOMAL LOCATION

Genetic locus: TYROBP (human) mapping to 19q13.12; Tyrobp (mouse) mapping to 7 B1.

SOURCE

DAP12 (A-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 76-112 at the C-terminus of DAP12 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

DAP12 (A-4) is available conjugated to agarose (sc-166084 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-166084 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166084 PE), fluorescein (sc-166084 FITC), Alexa Fluor® 488 (sc-166084 AF488), Alexa Fluor® 546 (sc-166084 AF546), Alexa Fluor® 594 (sc-166084 AF594) or Alexa Fluor® 647 (sc-166084 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166084 AF680) or Alexa Fluor® 790 (sc-166084 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-166084 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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STORAGE

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

APPLICATIONS

DAP12 (A-4) is recommended for detection of DAP12 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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).

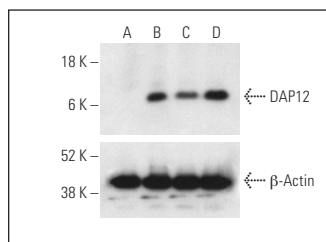
DAP12 (A-4) is also recommended for detection of DAP12 in additional species, including canine.

Suitable for use as control antibody for DAP12 siRNA (h): sc-35172, DAP12 siRNA (m): sc-42854, DAP12 shRNA Plasmid (h): sc-35172-SH, DAP12 shRNA Plasmid (m): sc-42854-SH, DAP12 shRNA (h) Lentiviral Particles: sc-35172-V and DAP12 shRNA (m) Lentiviral Particles: sc-42854-V.

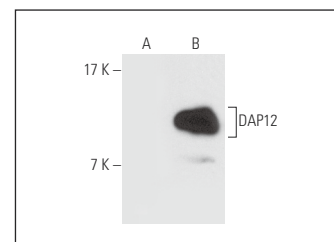
Molecular Weight of DAP12: 12 kDa.

Positive Controls: J774.A1 cell lysate: sc-3802, DAP12 (h2): 293T Lysate: sc-174294 or U-937 cell lysate: sc-2239.

DATA



DAP12 (A-4): sc-166084. Western blot analysis of DAP12 expression in untreated (A), PMA treated (B), Cholecalciferol treated (C) and PGE2 treated (D) THP-1 whole cell lysates. Detection reagent used: m-IgG_{2a} BP-HRP: sc-542731. GAPDH (0411): sc-47724 used as loading control. Detection reagent used: m-IgG₁ BP-HRP: sc-525408.



DAP12 (A-4): sc-166084. Western blot analysis of DAP12 expression in non-transfected: sc-117752 (A) and human DAP12 transfected: sc-174294 (B) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Lemoine, L., et al. 2020. Microbially competent 3D skin: a test system that reveals insight into host-microbe interactions and their potential toxicological impact. *Arch. Toxicol.* 94: 3487-3502.
2. Abdel-Rafei, M.K. and Thabet, N.M. 2020. Modulatory effect of methylsulfonylmethane against BPA/γ-radiation induced neurodegenerative alterations in rats: influence of TREM-2/DAP-12/Syk pathway. *Life Sci.* 260: 118410.
3. Zhang, L., et al. 2022. Identification of key differential genes in intimal hyperplasia induced by left carotid artery ligation. *PeerJ* 10: e13436.
4. Zheng, J.Y., et al. 2023. Huang-Lian-Jie-Du decoction alleviates depressive-like behaviors in dextran sulfate sodium-induced colitis mice via Trem2/Dap12 pathway. *J. Ethnopharmacol.* 315: 116658.

RESEARCH USE

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