

DAP12 (A-20): sc-7855

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 natural killer (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 (mouse) mapping to 7 B1.

SOURCE

DAP12 (A-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at a central region of DAP12 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-7855 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

DAP12 (A-20) is recommended for detection of DAP12 of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

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

Molecular Weight of DAP12: 12 kDa.

Positive Controls: J774.A1 cell lysate: sc-3802.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Diefenbach, A., et al. 2002. Selective associations with signaling proteins determine stimulatory versus costimulatory activity of NKG2-D. *Nat. Immunol.* 12: 1142-1148.
2. Roumier, A., et al. 2004. Impaired synaptic function in the microglial KARAP/DAP12 deficient mouse. *J. Neurosci.* 24: 111421-11428.
3. Sessa, G., et al. 2004. Distribution and signaling of TREM-2/DAP12, the receptor system mutated in human polycystic lipomembraneous osteodysplasia with sclerosing leukoencephalopathy dementia. *Eur. J. Neurosci.* 20: 2617-2628.
4. Nitahara, A., et al. 2006. NKG2-D ligation without T cell receptor engagement triggers both cytotoxicity and cytokine production in dendritic epidermal T cells. *J. Invest. Dermatol.* 126: 1052-1058.
5. Koth, L.L., et al. 2010. DAP12 is required for macrophage recruitment to the lung in response to cigarette smoke and chemotaxis toward CCL2. *J. Immunol.* 184: 6522-6528.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.



Try **DAP12 (A-4): sc-166084** or **DAP12 (A-8): sc-166085**, our highly recommended monoclonal alternatives to DAP12 (A-20).