

NKG2-D (5C6): sc-53501

BACKGROUND

The activity of natural killer (NK) cells is regulated by members of multiple receptor families that recognize class I MHC molecules, such as the killer cell inhibitory receptor/leukocyte immunoglobulin-like receptor (KIR/LIR) family and the C-type lectin superfamily. The KIR/LIR family includes p91A (also designated pp130 or PIR-B, for paired immunoglobulin-like receptor-B) and p91B (also designated PIR-A). p91A acts as an inhibitory receptor through interactions with SHP-1, whereas p91B acts as an activating receptor. CD94, NKG2 and Ly-49 are members of the C-type lectin superfamily of type II membrane glycoproteins. CD94 forms heterodimers with NKG2 isoforms on the surface of NK cells, whereas Ly-49 isoforms form homodimers. NKG2-D, expressed on NK cells, $\gamma\delta$ T cells, and CD8⁺ $\alpha\beta$ T cells, is a receptor for the stress inducible protein MICA, an antigen frequently expressed in epithelial tumors.

CHROMOSOMAL LOCATION

Genetic locus: KLRK1 (human) mapping to 12p13.2.

SOURCE

NKG2-D (5C6) is a mouse monoclonal antibody raised against NK cells of human origin.

PRODUCT

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

NKG2-D (5C6) is available conjugated to agarose (sc-53501 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-53501 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53501 PE), fluorescein (sc-53501 FITC), Alexa Fluor[®] 488 (sc-53501 AF488), Alexa Fluor[®] 546 (sc-53501 AF546), Alexa Fluor[®] 594 (sc-53501 AF594) or Alexa Fluor[®] 647 (sc-53501 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-53501 AF680) or Alexa Fluor[®] 790 (sc-53501 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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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

NKG2-D (5C6) is recommended for detection of NKG2-D of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)] and flow cytometry (1 μ g per 1 x 10⁶ cells).

Suitable for use as control antibody for NKG2-D siRNA (h): sc-42948, NKG2-D shRNA Plasmid (h): sc-42948-SH and NKG2-D shRNA (h) Lentiviral Particles: sc-42948-V.

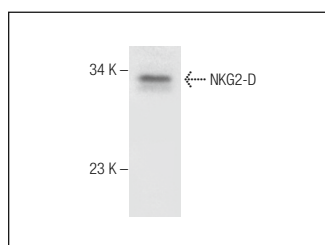
Molecular Weight of NKG2-D: 42 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203.

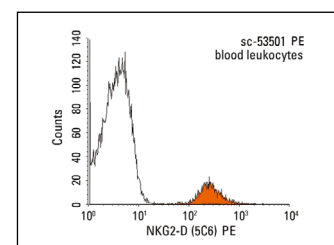
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker[™] Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



NKG2-D (5C6): sc-53501. Western blot analysis of NKG2-D expression in K-562 whole cell lysate.



NKG2-D (5C6): sc-53501. Indirect FCM analysis of TCR α/β ⁺, CD8⁺ human peripheral blood leukocytes stained with NKG2-D (5C6), followed by PE-conjugated goat anti-mouse IgG: sc-3738. Black line histogram represents the isotype control, normal mouse IgG_{2a}: sc-3878.

SELECT PRODUCT CITATIONS

- Lee, M., et al. 2011. Astrocytes are GABAergic cells that modulate microglial activity. *Glia* 59: 152-165.
- Park, Y.P., et al. 2011. Complex regulation of human NKG2D-DAP10 cell surface expression: opposing roles of the γ c cytokines and TGF- β 1. *Blood* 118: 3019-3027.
- Acebes-Huerta, A., et al. 2016. Drug-induced hyperploidy stimulates an antitumor NK cell response mediated by NKG2-D and DNAM-1 receptors. *Oncoimmunology* 5: e1074378.
- Choi, J.W., et al. 2020. Proteome analysis of human natural killer cell derived extracellular vesicles for identification of anticancer effectors. *Molecules* 25: 5216.
- Uddin, M.B., et al. 2022. p53 missense mutant G242A subverts natural killer cells in sheltering mouse breast cancer cells against immune rejection. *Exp. Cell Res.* 417: 113210.
- Su, X., et al. 2023. A novel TrxR1 inhibitor regulates NK and CD8⁺ T cell infiltration and cytotoxicity, enhancing the efficacy of anti-PD-1 immunotherapy against hepatocarcinoma. *J. Immunol.* 210: 681-695.

RESEARCH USE

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

PROTOCOLS

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