

# Rae-1 (C-20): sc-20333

## BACKGROUND

Natural killer (NK) cells attack tumor and infected cells, but the receptors and ligands that stimulate them are poorly understood. Two murine ligands for the lectin-like receptor NKG2-D, H60 and retinoic acid early inducible (Rae-1 $\alpha$ ,  $\beta$ ,  $\gamma$ ,  $\delta$  and  $\epsilon$ ), are distant relatives of major histocompatibility complex class I molecules. These molecules are encoded by Rae-1 and H60 minor histocompatibility antigen genes on mouse chromosome 10 and show weak homology with MHC class I. Expression of the NKG2-D ligands is low or absent on normal adult tissues; however, they are constitutively expressed on some tumors and upregulated by retinoic acid. Ectopic expression of Rae-1 and H60 confers target susceptibility to NK cell attack. NKG2-D binds to H60 with approximately 25-fold higher affinity than to Rae-1. Rae-1 and H60 compete directly for occupancy of NKG2-D; therefore, NKG2-D can be occupied by only one ligand at a time. Additionally, Rae-1 and H60 ligands of the NKG2-D receptor stimulate tumor immunity.

## REFERENCES

1. Diefenbach, A., et al. 2000. Ligands for the murine NKG2-D receptor: expression by tumor cells and activation of NK cells and macrophages. *Nat. Immunol.* 1: 119-126.
2. Cerwenka, A., et al. 2000. Retinoic acid early inducible genes define a ligand family for the activating NKG2-D receptor in mice. *Immunity* 12: 721-727.
3. O'Callaghan, C.A., et al. 2001. Molecular competition for NKG2-D: H60 and Rae-1 compete unequally for NKG2-D with dominance of H60. *Immunity* 15: 201-211.
4. Diefenbach, A., et al. 2001. Rae-1 and H60 ligands of the NKG2-D receptor stimulate tumour immunity. *Nature* 413: 165-171.
5. Carayannopoulos, L.N., et al. 2002. Ligands for murine NKG2-D display heterogeneous binding behavior. *Eur. J. Immunol.* 32: 597-605.

## SOURCE

Rae-1 (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of Rae-1 $\beta$  of mouse origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-20333 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## 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](http://www.scbt.com) or our catalog for detailed protocols and support products.

## APPLICATIONS

Rae-1 (C-20) is recommended for detection of Rae-1 $\alpha$ , Rae-1 $\beta$ , Rae-1 $\gamma$ , Rae-1 $\delta$  and Rae-1 $\epsilon$  of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1–2  $\mu$ g per 100–500  $\mu$ 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).

Molecular Weight of Rae-1 precursor: 32 kDa.

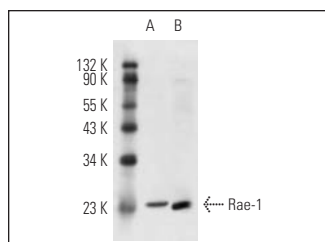
Molecular Weight of mature Rae-1: 25 kDa.

Positive Controls: F9 cell lysate: sc-2245 or mouse embryo tissue extract.

## 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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

## DATA



Rae-1 (C-20): sc-20333. Western blot analysis of mature Rae-1 expression in mouse embryo tissue extract (A) and F9 whole cell lysate (B).

## SELECT PRODUCT CITATIONS

1. Zhang, Z.X., et al. 2008. NK cells induce apoptosis in tubular epithelial cells and contribute to renal ischemia-reperfusion injury. *J. Immunol.* 181: 7489-7498.

## RESEARCH USE

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