SANTA CRUZ BIOTECHNOLOGY, INC.

Qa-1 (M-12): sc-26169

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The Power to Question

BACKGROUND

Major histocompatibility complex (MHC) molecules, which include human leukocyte antigens (HLAs), are cell-surface receptors that bind foreign peptides and present them to cytotoxic T lymphocytes (CTLs). MHC class I molecules consist of two polypeptide chains, an α or heavy chain, and a non-covalently associated protein, β2-microglobulin. Antigens that bind to MHC class I molecules are typically 8-10 residues in length, and are stabilized in a peptide binding groove. Qa-1, a murine MHC class Ib molecule, presents the Qa-1 determinant modifier (Qdm) peptide to the CD94/NKG2A receptor on natural killer (NK) cells. This interaction participates in protecting self cells by inhibiting NK cytotoxicity, and may be mediated by CD8, since the Qa-1 protein preferentially binds to $CD8^+$, but not $CD4^+$, T cells. The gene encoding murine Qa-1 maps to chromosome 17.

REFERENCES

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2. Soloski, M.J., et al. 1981. Biochemical analysis of an MHC-linked hematopoietic cell surface antigen, Qa-2. J. Supramol. Struct. Cell. Biochem. 16: 167-177.
3. Wolf, P.R., et al. 1995. The class Ib molecule Qa-1 forms heterodimers with H-2Ld and a novel 50 kDa glycoprotein encoded centromeric to I-E beta. J. Exp. Med. 181: 657-668.
4. Janeway, C.A., et al. 1997. Immunobiology: the immune system in health and disease. New York: Garland Publishing.
5. Kraft, J.R., et al. 2000. Analysis of Qa-1b peptide binding specificity and the capacity of CD94/NKG2A to discriminate between Qa-1-peptide complexes. J. Exp. Med. 192: 613-624.
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7. Toyama-Sorimachi, N., et al. 2001. Mouse CD94 participates in Qa-1-mediated self recognition by NK cells and delivers inhibitory signals independent of Ly-49. J. Immunol. 166: 3771-3779.
8. Lohwasser, S., et al. 2001. The non-classical MHC class I molecule Qa-1b inhibits classical MHC class I-restricted cytotoxicity of cytotoxic T lymphocytes. Int. Immunol. 13: 321-327.

CHROMOSOMAL LOCATION

Genetic locus: H2-T23 (mouse) mapping to 17 B1.

SOURCE

Qa-1 (M-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of Qa-1 of mouse origin.

STORAGE

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

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-26169 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Qa-1 (M-12) is recommended for detection of Qa-1 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 Qa-1 siRNA (m): sc-42923, Qa-1 shRNA Plasmid (m): sc-42923-SH and Qa-1 shRNA (m) Lentiviral Particles: sc-42923-V.

Molecular Weight of Qa-1: 44 kDa.

Positive Controls: mouse thymus extract: sc-2406.

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.

RESEARCH USE

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

PROTOCOLS

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