

# Qa-1 (6A8.6F10): sc-23889

## 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  $\alpha$  or heavy chain, and a non-covalently associated protein,  $\beta$ -2-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<sup>+</sup>, but not CD4<sup>+</sup>, T cells. The gene encoding murine Qa-1 maps to chromosome 17 B1.

## CHROMOSOMAL LOCATION

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

## SOURCE

Qa-1 (6A8.6F10) is a mouse monoclonal antibody raised against amino acids 161-179 of Qa-1b of mouse origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available azide-free for blocking of CTL function, sc-23889 L, 200  $\mu$ g/0.1 ml.

Qa-1 (6A8.6F10) is available conjugated to agarose (sc-23889 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-23889 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-23889 PE), fluorescein (sc-23889 FITC), Alexa Fluor<sup>®</sup> 488 (sc-23889 AF488), Alexa Fluor<sup>®</sup> 546 (sc-23889 AF546), Alexa Fluor<sup>®</sup> 594 (sc-23889 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-23889 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-23889 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-23889 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

## STORAGE

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

## APPLICATIONS

Qa-1 (6A8.6F10) is recommended for detection of non classical MHC Class I (Class Ib) molecule Qa-1 of mouse 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)] and flow cytometry (1  $\mu$ g per 1 x 10<sup>6</sup> cells).

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.

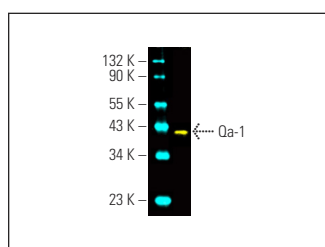
Molecular Weight of Qa-1: 44 kDa.

Positive Controls: mouse thymus extract: sc-2406, WEHI-3 cell lysate: sc-3815 or MM-142 cell lysate: sc-2246.

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> 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



Qa-1 (6A8.6F10) Alexa Fluor<sup>®</sup> 488: sc-23889 AF488. Direct fluorescent western blot analysis of Qa-1 expression in MM-142 whole cell lysate. Blocked with UltraCruz<sup>®</sup> Blocking Reagent: sc-516214. Cruz Marker<sup>™</sup> Molecular Weight Standards detected with Cruz Marker<sup>™</sup> MW Tag-Alexa Fluor<sup>®</sup> 647: sc-516791.

## SELECT PRODUCT CITATIONS

- Liang, S., et al. 2006. Human ILT2 receptor associates with murine MHC class I molecules *in vivo* and impairs T cell function. *Eur. J. Immunol.* 36: 2457-2471.
- Wang, X., et al. 2012. Activated mouse CD4<sup>+</sup>Foxp3<sup>-</sup> T cells facilitate melanoma metastasis via Qa-1-dependent suppression of NK-cell cytotoxicity. *Cell Res.* 22: 1696-1706.
- Long, X., et al. 2017. Memory CD4<sup>+</sup> T cells are suppressed by CD8<sup>+</sup> regulatory T cells *in vitro* and *in vivo*. *Am. J. Transl. Res.* 9: 63-78.
- Li, Z., et al. 2020. Brain transforms natural killer cells that exacerbate brain edema after intracerebral hemorrhage. *J. Exp. Med.* 217: e20200213.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

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