



β -2-Microglobulin (6F37): sc-69962

Major histocompatibility complex (MHC) class I molecules bind to antigens for presentation on the surface of cells. The proteasome is responsible for producing these antigens from the components of foreign pathogens. MHC class I molecules consist of an α heavy chain that contains three subdomains ($\alpha 1$, $\alpha 2$, $\alpha 3$) and a non-covalent associating light chain, known as β -2-Microglobulin. β -2-Microglobulin associates with the $\alpha 3$ subdomain of the α heavy chain and forms an immunoglobulin domain-like structure that mediates proper folding and expression of MHC class I molecules. The $\alpha 1$ and $\alpha 2$ domains of the α heavy chain form the peptide antigen-binding cleft. Mice that lack β -2-Microglobulin protein show a normal distribution of T cells, yet have no mature CD4-8⁺ T cells and are defective in CD4-8⁺ T cell-mediated cytotoxicity. Interferon- γ can stimulate production of β -2-Microglobulin transcripts. The human β -2-Microglobulin gene maps to chromosome 15q21-q22.2 and encodes a 119 amino acid protein. Mutations in the β -2-Microglobulin gene can enhance the progression of malignant melanoma phenotypes.

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3. Solheim, J.C., et al. 1995. Conformational changes induced in the MHC class I molecule by peptide and β -2-Microglobulin. *Immunol. Res.* 14: 200-217.
4. Pamer, E., et al. 1998. Mechanisms of MHC class I-restricted antigen processing. *Annu. Rev. Immunol.* 16: 323-358.
5. Tsuyuki, Y., et al. 1998. IFN- γ induces coordinate expression of MHC class I-mediated antigen presentation machinery molecules in adult mouse Schwann cells. *Neuroreport* 9: 2071-2075.
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7. Drbal, K., et al. 2001. A proteolytically truncated form of free CD18, the common chain of leukocyte integrins, as a novel marker of activated myeloid cells. *Blood* 98: 1561-1566.
8. Online Mendelian Inheritance in Man, OMIMTM. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 109700. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
9. LocusLink Report (LocusID: 567). <http://www.ncbi.nlm.nih.gov/LocusLink/>

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.

SOURCE

β -2-Microglobulin (6F37) is a mouse monoclonal antibody raised against full length β -2-Microglobulin of caiman origin.

PRODUCT

Each vial contains 200 μ g IgG₁ in 1.0 mL PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

β -2-Microglobulin (6F37) is recommended for detection of free and MHC class I associated β -2-Microglobulin of caiman 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).

Molecular Weight of β -2-Microglobulin: 12 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz MarkerTM compatible goat anti-mouse IgG-HRP: sc-2031 (dilution range: 1:2000-1:5000), Cruz MarkerTM 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).

RESEARCH USE

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