

β -2-Microglobulin (HYB 290-03): sc-58903

BACKGROUND

Major histocompatibility complex (MHC) class 1 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 1 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 1 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 15q21.1 and encodes a 119 amino acid protein. Mutations in the β -2-Microglobulin gene can enhance the progression of malignant melanoma phenotypes.

REFERENCES

- Skjødt, K., et al. 1987. Isolation and characterization of chicken and turkey β -2-Microglobulin. *Mol. Immunol.* 23: 1301-1309.
- Dunon, D., et al. 1990. T cell precursor migration towards β -2-Microglobulin is involved in thymus colonization of chicken embryos. *EMBO J.* 9: 3315-3322.
- Zijlstra, M., et al. 1990. β -2-Microglobulin deficient mice lack CD4-8⁺ cytolytic T cells. *Nature* 344: 742-746.
- 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.
- Pamer, E., et al. 1998. Mechanisms of MHC class I-restricted antigen processing. *Ann. Rev. Immunol.* 16: 323-358.
- 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.

CHROMOSOMAL LOCATION

Genetic locus: B2M (human) mapping to 15q21.1.

SOURCE

β -2-Microglobulin (HYB 290-03) is a mouse monoclonal antibody raised against full length β -2-Microglobulin of human origin.

PRODUCT

Each vial contains 100 μ g IgG₁ in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

β -2-Microglobulin (HYB 290-03) is recommended for detection of β -2-Microglobulin 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for β -2-Microglobulin siRNA (h): sc-29592, β -2-Microglobulin shRNA Plasmid (h): sc-29592-SH and β -2-Microglobulin shRNA (h) Lentiviral Particles: sc-29592-V.

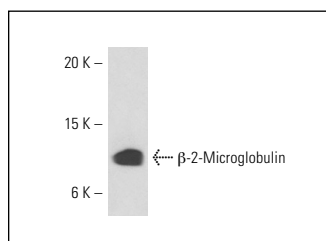
Molecular Weight of β -2-Microglobulin: 12 kDa.

Positive Controls: HL-60 whole cell lysate: sc-2209 or CCRF-CEM cell lysate: sc-2225 or HeLa whole cell lysate: sc-2200.

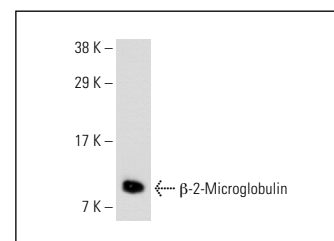
RECOMMENDED SECONDARY REAGENTS

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 Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (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).

DATA



β -2-Microglobulin (HYB 290-03): sc-58903. Western blot analysis of β -2-Microglobulin expression in CCRF-CEM whole cell lysate.



β -2-Microglobulin (HYB 290-03): sc-58903. Western blot analysis of β -2-Microglobulin expression in HL-60 whole cell lysate.

SELECT PRODUCT CITATIONS

- Baldini, C., et al. 2011. Proteomic analysis of saliva: a unique tool to distinguish primary Sjögren's syndrome from secondary Sjögren's syndrome and other sicca syndromes. *Arthritis Res. Ther.* 13: R194.

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.