SANTA CRUZ BIOTECHNOLOGY, INC.

β-2-Microglobulin (I-19): sc-8360

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 a heavy chain that contains three subdomains (α1, α2, α3), and a non-covalent associating light chain, known as β-2-Microglobulin. β-2-Microglobulin associates with the α3 subdomain of the a heavy chain and forms an immunoglobulin domain-like structure that mediates proper folding and expression of MHC class 1 molecules. The α1 and α2 domains of the a 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

1. Skjødt, K., et al. 1987. Isolation and characterization of chicken and turkey β-2-Microglobulin. Mol. Immunol. 23: 1301-1309.
2. 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.
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.

CHROMOSOMAL LOCATION

Genetic locus: B2M (human) mapping to 15q21-q22.2; B2m (mouse) mapping to 2 F1-F3.

SOURCE

β-2-Microglobulin (I-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of β-2-Microglobulin 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.

PROTOCOLS

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

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-8360 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

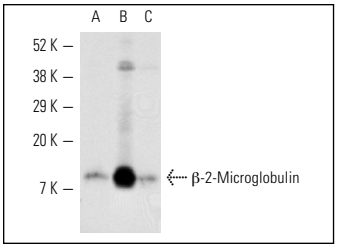
β-2-Microglobulin (I-19) is recommended for detection of β-2-Microglobulin of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for β-2-Microglobulin siRNA (h): sc-29592, β-2-Microglobulin siRNA (m): sc-29593, β-2-Microglobulin shRNA Plasmid (h): sc-29592-SH, β-2-Microglobulin shRNA Plasmid (m): sc-29593-SH, β-2-Microglobulin shRNA (h) Lentiviral Particles: sc-29592-V and β-2-Microglobulin shRNA (m) Lentiviral Particles: sc-29593-V.

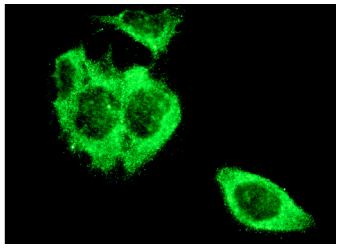
Molecular Weight of β-2-Microglobulin: 12 kDa.

Positive Controls: IB4 whole cell lysate, NIH/3T3 whole cell lysate: sc-2210 or NIH/3T3 + IL-6 cell lysate: sc-24743.

DATA



β-2-Microglobulin (I-19): sc-8360. Western blot analysis of β-2-Microglobulin expression in IB4 (**A**), HeLa (**B**) and U-937 (**C**) whole cell lysates.



β-2-Microglobulin (I-19): sc-8360. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic staining.

RESEARCH USE

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