SANTA CRUZ BIOTECHNOLOGY, INC.

β-2-Microglobulin (M-20): sc-8361

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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.

CHROMOSOMAL LOCATION

Genetic locus: B2m (mouse) mapping to 2 E5.

SOURCE

β-2-Microglobulin (M-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of β-2-Microglobulin of mouse origin.

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-8361 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

β-2-Microglobulin (M-20) is recommended for detection of β-2-Microglobulin of mouse and rat 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 (m): sc-29593, β-2-Microglobulin shRNA Plasmid (m): sc-29593-SH and β-2-Microglobulin shRNA (m) Lentiviral Particles: sc-29593-V.

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

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, NIH/3T3 + IL-6 cell lysate: sc-24743 or mouse brain extract: sc-2253.

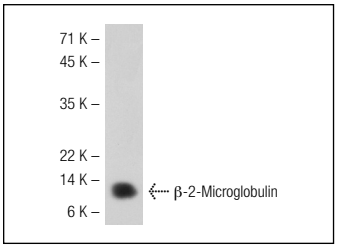
STORAGE

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

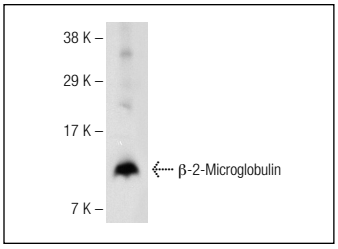
RESEARCH USE

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

DATA



β-2-Microglobulin (M-20): sc-8361. Western blot analysis of β-2-Microglobulin expression in NIH/3T3 whole cell lysate.



β-2-Microglobulin (M-20): sc-8361. Western blot analysis of β-2-Microglobulin expression in mouse brain tissue extract.

SELECT PRODUCT CITATIONS

1. Yamaguchi, H., et al. 2002. Association of MR1 protein, an MHC class I-related molecule, with β-2-Microglobulin. Biochem. Biophys. Res. Commun. 290: 722-729.
2. Kajikawa, M., et al. 2006. MHC class I-like MILL molecules are β-2-Microglobulin-associated, GPI-anchored glycoproteins that do not require TAP for cell surface expression. J. Immunol. 177: 3108-3115.
3. Pellkofer, H., et al. 2004. Modelling paraneoplastic CNS disease: T-cells specific for the onconeuronal antigen PNMA1 mediate autoimmune encephalomyelitis in the rat. Brain 127: 1822-1830.
4. Kajikawa, M. and Baba, T. 2006. MHC class I-like MILL molecules are β2-microglobulin-associated, GPI-anchored glycoproteins that do not require TAP for cell surface expression. J. Immunol. 177: 3108-3115.
5. 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.

PROTOCOLS

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