SANTA CRUZ BIOTECHNOLOGY, INC.

β-2-Microglobulin (FL-119): sc-15366

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 (human) mapping to 15q21.1; B2m (mouse) mapping to 2 E5.

SOURCE

β-2-Microglobulin (FL-119) is a rabbit polyclonal antibody raised against amino acids 1-119 representing full length β-2-Microglobulin of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

β-2-Microglobulin (FL-119) 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), immunohistochemistry (including paraffin-embedded sections) (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: NIH/3T3 whole cell lysate: sc-2210, HL-60 whole cell lysate: sc-2209 or mouse brain extract: sc-2253.

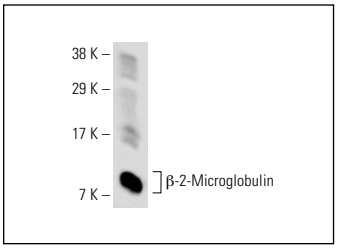
RESEARCH USE

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

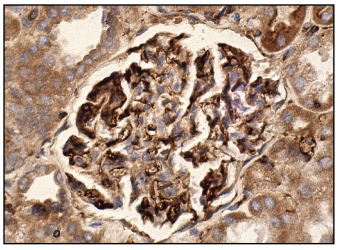
STORAGE

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

DATA



β-2-Microglobulin (FL-119): sc-15366. Western blot analysis of β-2-Microglobulin expression in HL-60 whole cell lysate.



β-2-Microglobulin (FL-119): sc-15366. Imunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing membrane staining of glomerular cells and cytoplasmic staining of cells in tubules.

SELECT PRODUCT CITATIONS

1. Setterblad, N., et al. 2004. B cell lipid rafts regulate both peptide-dependent and peptide-independent APC-T cell interaction. J. Immunol. 173: 1876-1886.
2. Wani, M.A., et al. 2006. Familial hypercatabolic hypoproteinemia caused by deficiency of the neonatal Fc receptor, FcRn, due to a mutant β-2-microglobulin gene. Proc. Natl. Acad. Sci. USA 103: 5084-5089.
3. Nomura, T., et al. 2006. β-2-Microglobulin promotes the growth of human renal cell carcinoma through the activation of the protein kinase A, cyclic AMP-responsive element-binding protein, and vascular endothelial growth factor axis. Clin. Cancer Res. 12: 7294-7305.
4. Kageyama, K., et al. 2006. G protein-coupled receptor kinase 2 involvement in desensitization of corticotropin-releasing factor (CRF) receptor type 1 by CRF in murine corticotrophs. Endocrinology 147: 441-450.
5. Nomura, T., et al. 2007. Targeting β-2-Microglobulin mediated signaling as a novel therapeutic approach for human renal cell carcinoma. J. Urol. 178: 292-300.
6. Huang, W.C., et al. 2008. β-2-Microglobulin signaling blockade inhibited androgen receptor axis and caused apoptosis in human prostate cancer cells. Clin. Cancer Res. 14: 5341-5347.
7. Hofman-Bang, J., et al. 2010. Increased parathyroid expression of klotho in uremic rats. Kidney Int. 78: 1119-1127.