



# $\beta$ -2-Microglobulin (HYB 003-01): sc-58902

## BACKGROUND

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  $\alpha$  heavy chain that contains three subdomains ( $\alpha 1$ ,  $\alpha 2$ ,  $\alpha 3$ ), and a non-covalent associating light chain, known as  $\beta$ -2-Microglobulin.  $\beta$ -2-Microglobulin associates with the  $\alpha 3$  subdomain of the  $\alpha$  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  $\alpha$  heavy chain form the peptide antigen-binding cleft. Mice that lack  $\beta$ -2-Microglobulin protein show a normal distribution of T cells, yet have no mature CD4-8<sup>+</sup> T cells and are defective in CD4-8<sup>+</sup> T cell-mediated cytotoxicity. Interferon- $\gamma$  can stimulate production of  $\beta$ -2-Microglobulin transcripts. The human  $\beta$ -2-Microglobulin gene maps to chromosome 15q21-q22.2 and encodes a 119 amino acid protein. Mutations in the  $\beta$ -2-Microglobulin gene can enhance the progression of malignant melanoma phenotypes.

## REFERENCES

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## SOURCE

$\beta$ -2-Microglobulin (HYB 003-01) is a mouse monoclonal antibody raised against full length  $\beta$ -2-Microglobulin of caiman origin.

## RESEARCH USE

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

## PRODUCT

Each vial contains 100  $\mu$ g IgG<sub>1</sub> in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

$\beta$ -2-Microglobulin (HYB 003-01) is recommended for detection of free and MHC class I associated  $\beta$ -2-Microglobulin of caiman origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1–2  $\mu$ g per 100–500  $\mu$ g of total protein (1 ml of cell lysate)], flow cytometry (1  $\mu$ g per 1 x 10<sup>6</sup> cells) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Molecular Weight of  $\beta$ -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 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).

## 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](http://www.scbt.com) or our catalog for detailed protocols and support products.