



# $\beta$ -2-Microglobulin (3H2718): sc-69963

## 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  $\alpha$  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 1 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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- Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 109700. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- LocusLink Report (LocusID: 567). <http://www.ncbi.nlm.nih.gov/LocusLink/>

## 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.

## CHROMOSOMAL LOCATION

Genetic locus: B2m (rat) mapping to 3q35.

## SOURCE

$\beta$ -2-Microglobulin (3H2718) is a mouse monoclonal antibody raised against microglial cells of rat origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>1</sub> in 1.0 mL PBS with < 0.1% sodium azide and 0.1% gelatin.

Available as PE conjugate for flow cytometry, sc-69963 PE, 100 tests.

Available as fluorescein conjugate for flow cytometry, sc-69963 FITC, 100 tests.

## APPLICATIONS

$\beta$ -2-Microglobulin (3H2718) is recommended for detection of  $\beta$ -2-Microglobulin of rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1  $\mu$ g per 1 x 10<sup>6</sup> cells).

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) Immunofluorescence: use goat anti-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## RESEARCH USE

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