

MICB (9847-1): sc-80527

BACKGROUND

MICB (MHC class I polypeptide-related sequence B) is a heavily glycosylated transmembrane protein expressed on the surface of cells in response to infection. It is distantly related to, but functionally distinct from MHC class I molecules. MICB is a stress induced ligand for the NKG2-D type II receptor found on natural killer (NK) cells, CD8+ $\alpha\beta$ T cells and $\gamma\delta$ T cells. It activates the cytolytic response and is required for stimulating the host defense against virus-infected cells and tumor cells. MICB shares 91% identity with MICA. These proteins are stably expressed without conventional class I peptide ligands or association with β -2-Microglobulin. MICA and MICB are predominantly expressed in epithelial cells, endothelial cells and fibroblasts and play a central role in the signaling of cellular distress to evoke immune responses in the intestinal epithelium.

REFERENCES

1. Bahram, S., et al. 1994. A second lineage of mammalian major histocompatibility complex class I genes. *Proc. Natl. Acad. Sci. USA* 91: 6259-6263.
2. Steinle, A., et al. 1998. Diversification, expression, and $\gamma\delta$ T cell recognition of evolutionarily distant members of the MIC family of major histocompatibility complex class I-related molecules. *Proc. Natl. Acad. Sci. USA* 95: 12510-12515.
3. Groh, V., et al. 1998. Recognition of stress-induced MHC molecules by intestinal epithelial $\gamma\delta$ T cells. *Science* 279: 1737-1740.
4. Groh, V., et al. 1999. Broad tumor-associated expression and recognition by tumor-derived $\gamma\delta$ T cells of MICA and MICB. *Proc. Natl. Acad. Sci. USA* 96: 6879-6884.
5. Zou, Y. and Stastny, P. 2002. Alternatively spliced forms of MICA and MICB lacking exon 3 in a human cell line and evidence of presence of similar RNA in human peripheral blood mononuclear cells. *Immunogenetics* 54: 671-674.
6. Wu, J., et al. 2003. Intracellular retention of the MHC class I-related chain B ligand of NKG2-D by the human cytomegalovirus UL16 glycoprotein. *J. Immunol.* 170: 4196-4200.
7. Tosh, K., et al. 2006. Variation in MICA and MICB genes and enhanced susceptibility to paucibacillary leprosy in south India. *Hum. Mol. Genet.* 15: 2880-2887.
8. Rodriguez-Rodero, S., et al. 2006. MHC class I chain-related gene B promoter polymorphisms and celiac disease. *Hum. Immunol.* 67: 208-214.
9. Stern-Ginossar, N., et al. 2007. Host immune system gene targeting by a viral miRNA. *Science* 317: 376-381.

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 for detailed protocols and support products.

CHROMOSOMAL LOCATION

Genetic locus: MICB (human) mapping to 6p21.33.

SOURCE

MICB (9847-1) is a mouse monoclonal antibody raised against the extracellular domain of recombinant MICB of human origin.

PRODUCT

Each vial contains 100 μ g IgG_{2b} in 1.0 ml of PBS with < 0.1% sodium azide and protein stabilizer.

APPLICATIONS

MICB (9847-1) is recommended for detection of MICB of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and flow cytometry (1 μ g per 1×10^6 cells).

Suitable for use as control antibody for MICB siRNA (h): sc-42925, MICB shRNA Plasmid (h): sc-42925-SH and MICB shRNA (h) Lentiviral Particles: sc-42925-V.

Molecular Weight of glycosylated MICB: 70-80 kDa.

SELECT PRODUCT CITATIONS

1. Bedel, R., et al. 2011. Novel role for STAT3 in transcriptional regulation of NK immune cell targeting receptor MICA on cancer cells. *Cancer Res.* 71: 1615-1626.
2. Min, D., et al. 2013. Downregulation of miR-302c and miR-520c by 1,25(OH)₂D₃ treatment enhances the susceptibility of tumour cells to natural killer cell-mediated cytotoxicity. *Br. J. Cancer* 109: 723-730.
3. Duan, X., et al. 2013. ADAM15 is involved in MICB shedding and mediates the effects of gemcitabine on MICB shedding in PANC-1 pancreatic cancer cells. *Mol. Med. Rep.* 7: 991-997.
4. Luo, D., et al. 2019. MG132 selectively upregulates MICB through the DNA damage response pathway in A549 cells. *Mol. Med. Rep.* 19: 213-220.

RESEARCH USE

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



See **MICA/B (F-6): sc-137242** for MICA/B antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor[®] 488, 546, 594, 647, 680 and 790.