SANTA CRUZ BIOTECHNOLOGY, INC.

MICA (2C10): sc-23870

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

MICA and MICB are stress-induced antigens that are related to major histocompatibility complex (MHC) class I molecules. MICA and MICB are frequently expressed in epithelial tumors. These highly glycosylated cell surface proteins are stably expressed without conventional class I peptide ligands or association with β-2-microglobulin. The expression is induced on proliferating or heat shock-stressed epithelial cells. MICA and MICB are broadly recognized by intestinal epithelial Vδ1 γδ T cells expressing variable TCRs, suggesting that these antigens may 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. Bahram, S., et al. 1996. Nucleotide sequence of the human MHC class I MICA gene. Immunogenetics 44: 80-81.

CHROMOSOMAL LOCATION

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

SOURCE

MICA (2C10) is a mouse monoclonal antibody raised against C1R cells expressing MICA mRNA after stable transfection with MICA cDNA in RSV.5neo.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

MICA (2C10) is available conjugated to agarose (sc-23870 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-23870 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-23870 PE), fluorescein (sc-23870 FITC), Alexa Fluor® 488 (sc-23870 AF488), Alexa Fluor® 546 (sc-23870 AF546), Alexa Fluor® 594 (sc-23870 AF594) or Alexa Fluor® 647 (sc-23870 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-23870 AF680) or Alexa Fluor® 790 (sc-23870 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

MICA (2C10) is recommended for detection of MICA of 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)] and flow cytometry (1 µg per 1 x 10^6 cells).

Suitable for use as control antibody for MICA siRNA (h): sc-42924, MICA shRNA Plasmid (h): sc-42924-SH and MICA shRNA (h) Lentiviral Particles: sc-42924-V.

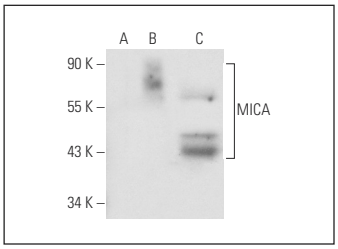
Molecular Weight of MICA: 62 kDa.

Positive Controls: MICA (h2): 293T Lysate: sc-113460, HeLa whole cell lysate: sc-2200 or MCF7 whole cell lysate: sc-2206.

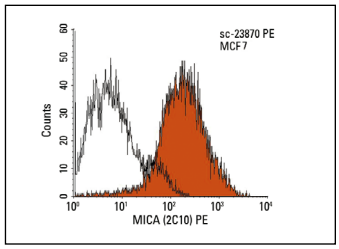
STORAGE

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

DATA



MICA (2C10): sc-23870. Western blot analysis of MICA expression in non-transfected 293T: sc-117752 (**A**), human MICA transfected 293T: sc-113460 (**B**) and MCF7 (**C**) whole cell lysates.



MICA (2C10) PE: sc-23870 PE. FCM analysis of MCF-7 cells. Black line histogram represents the isotype control, normal mouse IgG.

SELECT PRODUCT CITATIONS

1. Thomas, M., et al. 2008. Down-regulation of NKG2D and NKp80 ligands by Kaposi's sarcoma-associated herpesvirus K5 protects against NK cell cytotoxicity. Proc. Natl. Acad. Sci. USA 105: 1656-1661.
2. Bernal, M., et al. 2009. Changes in activatory and inhibitory natural killer (NK) receptors may induce progression to multiple myeloma: implications for tumor evasion of T and NK cells. Hum. Immunol. 70: 854-857.
3. Kohga, K., et al. 2010. Expression of CD133 confers malignant potential by regulating metalloproteinases in human hepatocellular carcinoma. J. Hepatol. 52: 872-879.
4. 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.
5. Lin, D., et al. 2012. NFκB regulates MICA gene transcription in endothelial cell through a genetically inhibitable control site. J. Biol. Chem. 287: 4299-4310.
6. Tsunematsu, H., et al. 2012. Fibroblast growth factor-2 enhances NK sensitivity of hepatocellular carcinoma cells. Int. J. Cancer 130: 356-364.
7. 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.
8. Zhang, X., et al. 2015. The clinical and biological significance of MICA in clear cell renal cell carcinoma patients. Tumour Biol. 37: 2153-2159.
9. Moncayo, G., et al. 2016. MICA expression is regulated by cell adhesion and contact in a FAK/Src-dependent manner. Front. Immunol. 7: 687.
10. McCarthy, M.T., et al. 2018. Purine nucleotide metabolism regulates expression of the human immune ligand MICA. J. Biol. Chem. 293: 3913-3924.

RESEARCH USE

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