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MICA Antibody
Catalog # ASC10552

Specification

MICA Antibody - Product Information

Application	**WB, IHC-P, IF, E**
Primary Accession	Q29983
Other Accession	NP_000238, 4557751
Reactivity	**Human, Mouse**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**IgG**
Calculated MW	**Predicted: 42 kDa** **Observed: 46 kDa KDa**
Application Notes	**MICA antibody can be used for detection of MICA by Western blot at 0.5 - 2 µg/mL. Antibody can also be used for immunohistochemistry starting at 10 µg/mL. For immunofluorescence start at 20 µg/mL.**

MICA Antibody - Additional Information

Gene ID	**4276**

Target/Specificity
MICA;

Reconstitution & Storage
MICA antibody can be stored at 4℃ for three months and -20℃, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.

Precautions
MICA Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

MICA Antibody - Protein Information

Name MICA {ECO:0000312|EMBL:CAI41907.1}

Function
Widely expressed membrane-bound protein which acts as a ligand to stimulate an activating receptor KLRK1/NKG2D, expressed on the surface of essentially all human natural killer (NK), gammadelta T and CD8 alphabeta T-cells (PubMed:11491531, PubMed:11777960). Up-regulated in stressed conditions, such as viral and bacterial infections or DNA damage response, serves as signal of cellular stress, and engagement of KLRK1/NKG2D by MICA triggers NK-cells

resulting in a range of immune effector functions, such as cytotoxicity and cytokine production (PubMed:10426993).

Cellular Location
Cell membrane; Single-pass type I membrane protein. Cytoplasm Note=Expressed on the cell surface in gastric epithelium, endothelial cells and fibroblasts and in the cytoplasm in keratinocytes and monocytes. Infection with human adenovirus 5 suppresses cell surface expression due to the adenoviral E3-19K protein which causes retention in the endoplasmic reticulum.

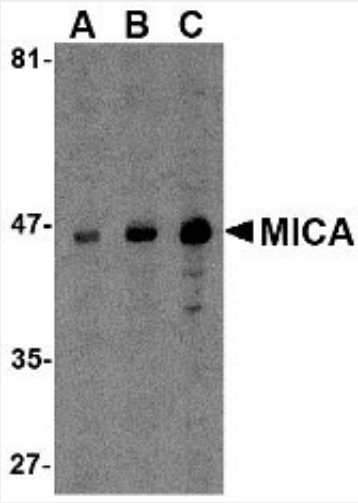
Tissue Location
Widely expressed with the exception of the central nervous system where it is absent. Expressed predominantly in gastric epithelium and also in monocytes, keratinocytes, endothelial cells, fibroblasts and in the outer layer of Hassal's corpuscles within the medulla of normal thymus. In skin, expressed mainly in the keratin layers, basal cells, ducts and follicles. Also expressed in many, but not all, epithelial tumors of lung, breast, kidney, ovary, prostate and colon. In thyomas, overexpressed in cortical and medullar epithelial cells. Tumors expressing MICA display increased levels of gamma delta T-cells.

MICA Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

MICA Antibody - Images



Western blot analysis of MICA in A-20 cell lysate with MICA antibody at (A) 0.5, (B) 1 and (C) 2 µg/mL.

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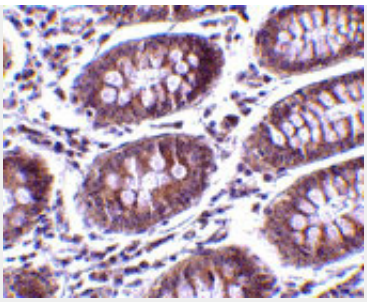
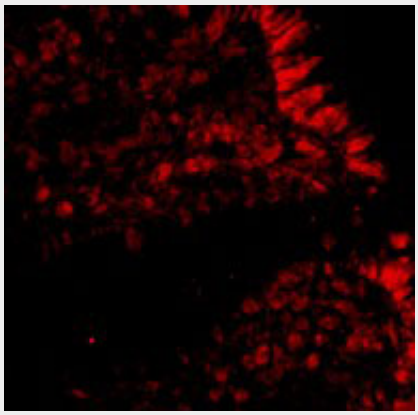


Immunohistochemistry of MICA in human colon tissue with MICA antibody at 10 µg/mL.



Immunofluorescence of MICA in Human Colon tissue with MICA antibody at 20 µg/mL.

MICA Antibody - Background

MICA Antibody: Major histocompatibility complex (MHC) class I proteins are ubiquitously expressed and mediate the recognition of intracellular antigens by cytotoxic T cells. A related family, termed the MHC class I chain-related (MIC) proteins are recognized by NKG2D, a receptor on NK and T cells, and promote anti-tumor activity. MICA, a member of the MIC family, is widely expressed on many tumors, and it is the MICA/NKG2D interaction that is thought to stimulate the anti-tumor reactivity by T lymphocytes. Both MICA and MICB mRNA are widely expressed in normal tissues, with MICA being present in virtually every tissue except the nervous system, suggesting that MIC protein expression may only be one component of the anti-tumor activity of the immune system.

MICA Antibody - References

Rudolph MG, Stanfield RL and Wilson IA. How TCRs bind MHCs, peptides, and coreceptors. Annu. Rev. Immunol. 2006; 24:419-66.
Bahram S, Bresnahan M, Geraghty DE, et al. A second lineage of mammalian major histocompatibility complex I genes. Proc. Natl. Acad. Sci. USA 1994; 91:6259-63.
Bauer S, Groh V, Wu J, et al. Activation of NK cells and T cells by NKG2D, a receptor for stress-inducible MICA. Science 1999; 285:727-9.
Maccalli C, Pende D, Castelli C, et al. NKG2D engagement of colorectal cancer-specific T cells strengthens TCR-mediated antigen stimulation and elicits TCR independent anti-tumor activity. Eur. J. Immunol. 2003; 33:2033-43.