

## Technical Data Sheet

## Purified NA/LE Mouse Anti-Human MIC A/B

## Product Information

<b>Material Number:</b>	<b>562202</b>
<b>Alternate Name:</b>	MHC class I polypeptide-related sequence A/B; PERB11.1/ PERB11.2
<b>Size:</b>	0.5 mg
<b>Concentration:</b>	1.0 mg/ml
<b>Clone:</b>	6D4
<b>Immunogen:</b>	MICA transfected cells
<b>Isotype:</b>	Mouse IgG2a, $\kappa$
<b>Reactivity:</b>	QC Testing: Human
<b>Storage Buffer:</b>	No azide/low endotoxin: Aqueous buffered solution containing no preservative, 0.2 $\mu$ m sterile filtered. Endotoxin level is $\leq 0.01$ EU/ $\mu$ g ( $\leq 0.001$ ng/ $\mu$ g) of protein as determined by the LAL assay.

## Description

The 6D4 monoclonal antibody specifically binds to the human MHC class I polypeptide-related sequence A (MICA, *aka* PERB11.1) and B (MICB, *aka* PERB11.2) proteins. These ~70 kDa transmembrane glycoproteins are homologs of the major histocompatibility complex class I molecules although they lack association with  $\beta 2$  microglobulin. The MHC class I-related MICA and MICB chains are expressed by some gut epithelial cells in vivo. MICA and MICB expression by other epithelial cells and cell types, including fibroblasts and endothelial cells, is induced by stress, eg, stress caused by bacterial and viral infections, autoimmunity or cellular transformation. Epithelial cell expression of MICA and MICB has also been detected in transplanted kidneys and pancreas that show histological signs of rejection and or cellular injury. This suggests their potential role in transplant immunopathology. MICA and MICB are ligands for NKG2D (CD314), an activating receptor expressed by natural killer (NK) cells,  $\gamma\delta$  T cells, CD8+ and some CD4+  $\alpha\beta$  T cells. The 6D4 antibody reportedly blocks NKG2D-positive NK cell- and T cell-mediated cytotoxicity against MICA/B-positive target cells.

## Preparation and Storage

Store undiluted at 4°C.

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.

This preparation contains no preservatives, thus it should be handled under aseptic conditions.

## Application Notes

## Application

Flow cytometry	Routinely Tested
Blocking	Reported
Immunohistochemistry	Reported

## Suggested Companion Products

Catalog Number	Name	Size	Clone
554645	Purified NA/LE Mouse IgG2a, $\kappa$ Isotype Control	0.5 mg	G155-178
555988	FITC Goat Anti-Mouse IgG/IgM	0.5 mg	Polyclonal
554656	Stain Buffer (FBS)	500 ml	(none)

## Product Notices

- Since applications vary, each investigator should titrate the reagent to obtain optimal results.
- Please refer to [www.bdbiosciences.com/pharmingen/protocols](http://www.bdbiosciences.com/pharmingen/protocols) for technical protocols.

## References

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(5428):727-729. (Clone-specific: Blocking)

Das H, Groh V, Kuijl C, et al. MICA engagement by human Vgamma2Vdelta2 T cells enhances their antigen-dependent effector function. *Immunity*. 2001; 15(1):83-93. (Clone-specific: Blocking, Flow cytometry)

Groh V, Bahram S, Bauer S, Herman A, Beauchamp M, Spies T. Cell stress-regulated human major histocompatibility complex class I gene expressed in gastrointestinal epithelium. *Proc Natl Acad Sci U S A*. 1996; 93(22):12445-12450. (Biology)

Groh V, Bruhl A, El-Gabalawy H, Nelson JL, Spies T. Stimulation of T cell autoreactivity by anomalous expression of NKG2D and its MIC ligands in rheumatoid arthritis. *Proc Natl Acad Sci U S A*. 2003; 100(16):9452-9457. (Clone-specific: Blocking, Flow cytometry, Immunohistochemistry)

Groh V, Rhinehart R, Randolph-Habecker J, Topp MS, Riddell SR, Spies T. Costimulation of CD8 $\alpha$  T cells by NKG2D via engagement by MIC induced on virus-infected cells. *Nat Immunol*. 2001; 2(3):255-260. (Clone-specific: Blocking, Flow cytometry, Immunofluorescence, Immunohistochemistry)

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Groh V, Rhinehart R, Secrist H, Bauer S, Grabstein KH, Spies T. Broad tumor-associated expression and recognition by tumor-derived gamma delta T cells of MICA and MICB. *Proc Natl Acad Sci U S A*. 1999; 96(12):6879-6884. (Clone-specific: Blocking, Flow cytometry, Immunohistochemistry)  
Groh V, Steinle A, Bauer S, Spies T. Recognition of stress-induced MHC molecules by intestinal epithelial gammadelta T cells. *Science*. 1998; 279(5357):1737-1740. (Immunogen: Blocking, Flow cytometry)  
Hankey KG, Drachenberg CB, Papadimitriou JC, et al. MIC expression in renal and pancreatic allografts. *Transplantation*. 2002; 73(2):304-306. (Clone-specific: Immunohistochemistry)

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