

DESCRIPTION

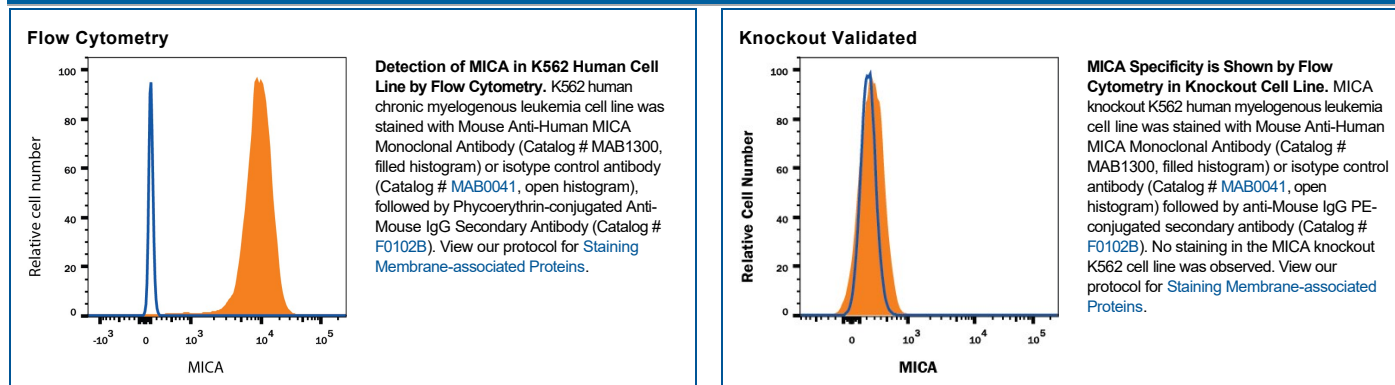
Species Reactivity	Human
Specificity	Detects human MICA in direct ELISAs and Western blots. In direct ELISAs, no cross-reactivity with recombinant human MICB is observed.
Source	Monoclonal Mouse IgG _{2B} Clone # 159227
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	BaF3 mouse pro-B cell line transfected with human MICA
Endotoxin Level	<0.10 EU per 1 µg of the antibody by the LAL method.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 µm filtered solution in PBS.

APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. [General Protocols](#) are available in the Technical Information section on our website.

	Recommended Concentration	Sample
Knockout Validated	0.25 µg/10 ⁶ cells	See Below
Western Blot	1 µg/mL	Recombinant Human MICA Fc Chimera (Catalog # 1300-MA)
Flow Cytometry	0.25 µg/10 ⁶ cells	See Below
CytoF-ready	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	
Blockade of Receptor-ligand Interaction	In a functional ELISA, 0.02-0.06 µg/mL of this antibody will block 50% of the binding of 50 ng/mL of Recombinant Human MICA Fc Chimera (Catalog # 1300-MA) to immobilized Recombinant Human NKG2D Fc Chimera (Catalog # 1299-NK) coated at 2 µg/mL (100 µL/well). At 0.4 µg/mL, this antibody will block >90% of the binding.	

DATA



PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> 12 months from date of receipt, -20 to -70 °C as supplied. 1 month, 2 to 8 °C under sterile conditions after reconstitution. 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

MICA (MHC class I chain-related gene A) is a transmembrane glycoprotein that functions as a ligand for human NKG2D. A closely related protein, MICB, shares 85% amino acid identity with MICA. These proteins are distantly related to the MHC class I proteins. They possess three extracellular Ig-like domains, but they have no capacity to bind peptide or interact with β 2-microglobulin. The genes encoding these proteins are found within the Major Histocompatibility Complex on human chromosome 6. The MICA locus is highly polymorphic with more than 50 recognized human alleles. MICA is absent from most cells but is frequently expressed in epithelial tumors and can be induced by bacterial and viral infections. MICA is a ligand for human NKG2D, an activating receptor expressed on NK cells, NKT cells, $\gamma\delta$ T cells, and CD8⁺ $\alpha\beta$ T cells. Recognition of MICA by NKG2D results in the activation of cytolytic activity and/or cytokine production by these effector cells. MICA recognition is involved in tumor surveillance, viral infections, and autoimmune diseases.

References:

1. Groh, V. *et al.* (2001) *Nature Immunol.* **2**:255.
2. Stephens, H. (2001) *Trends Immunol.* **22**:378.
3. Bauer, S. *et al.* (1999) *Science* **285**:727.
4. Groh, V. *et al.* (2002) *Nature* **419**:734.
5. Steinle, A. *et al.* (2001) *Immunogenetics* **53**:279.
6. Pende, D. *et al.* (2002) *Cancer Res.* **62**:6178.
7. NKG2D and its Ligands (2002) <http://www.RnDSystems.com>