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MIC-B

Catalog # PVGS1113

Product Information

Primary Accession	Q29980
Species	Human
Sequence	Ala23-Gly254 (Gly39Glu)
Purity	> 95% as analyzed by SDS-PAGE > 95% as analyzed by HPLC
Endotoxin Level	
Biological Activity	Fully biologically active when compared to standard. The specific activity is determined by binding MICB antibody in ELISA.
Expression System	E. coli
Theoretical Molecular Weight	32.8 kDa
Formulation	Lyophilized from a 0.2 μm filtered solution in 20 mM Tris, 150 mM NaCl, pH 8.0.
Reconstitution	It is recommended that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Reconstitute the lyophilized powder in sterile distilled water or aqueous buffer containing 0.1 % BSA to a concentration of 0.1-1.0 mg/ml.
Storage & Stability	Upon receiving, this product remains stable for up to 6 months at -70°C or -20°C. Upon reconstitution, the product should be stable for up to 1 week at 4°C or up to 3 months at -20°C. Avoid repeated freeze-thaw cycles.

Additional Information

Gene ID	4277
Other Names	MHC class I polypeptide-related sequence B, MIC-B, MICB {ECO:0000312|EMBL:CAA62823.1}
Target Background	MIC-B (MHC class I chain-related gene B) is a transmembrane glycoprotein that functions as a ligand for human NKG2D. A closely related protein, MIC-A, shares 85% amino acid identity with MIC-B. These 2 proteins are distantly related to the MHC class I proteins. MIC-A and MIC-B (MIC-A/B) possess three extracellular immunoglobulin-like domains, but have no capacity to bind peptide or interact with β2-microglobulin. The genes encoding MIC-A/B are found within the major histocompatibility complex on human chromosome 6. The MIC-B locus is polymorphic with more than 15 recognized human alleles. MIC-A/B are minimally expressed on normal cells, but are frequently expressed on epithelial tumors and can be induced by bacterial and viral

infections. MIC-A/B are ligands for NKG2D, an activating receptor expressed on NK cells, NKT cells, γδT cells, and $CD8^+$ αβ T cells. Recognition of MIC-A/B by NKG2D results in the activation of cytolytic activity and/or cytokine production by these effector cells. MIC-A/B recognition is involved in tumor surveillance, viral infections, and autoimmune diseases. The release of soluble forms of MIC-A/B from tumors down-regulates NKG2D surface expression on effector cells resulting in the impairment of anti-tumor immune response.

Protein Information

Name	MICB {ECO:0000312|EMBL:CAA62823.1}
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.
Cellular Location	Cell membrane {ECO:0000250|UniProtKB:Q29983}; Single-pass type I membrane protein {ECO:0000250|UniProtKB:Q29983} Note=Binding to human cytomegalovirus glycoprotein UL16 causes sequestration in the endoplasmic reticulum {ECO:0000250|UniProtKB:Q29983, ECO:0000269|PubMed:12782710}
Tissue Location	Widely expressed with the exception of the central nervous system where it is absent. Expressed in many, but not all, epithelial tumors of lung, breast, kidney, ovary, prostate and colon In hepatocellular carcinomas, expressed in tumor cells but not in surrounding non-cancerous tissue.