Overview

Description	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 ß2-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, Î³Î´ T cells, and CD8+ ªß 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.
Species	Human
Source	*E. coli*
Biological Activity	Fully biologically active when compared to standard. The specific activity is determined by binding MICB antibody in ELISA.
Sequence	AEPHSLRYNL MVLSQDESVQ SGFLAEGHLD GQPFLRYDRQ KRRAKPQGQW AEDVLGAKTW DTETEDLTEN GQDLRRTLTH IKDQKGGLHS LQEIRVCEIH EDSSTRGSRH FYYDGELFLS QNLETQESTV PQSSRAQTLA MNVTNFWKED AMKTKTHYRA MQADCLQKLQ RYLKSGVAIR RTVPPMVNVT CSEVSEGNIT VTCRASSFYP RNITLTWRQD GVSLSHNTQQ WG

Properties

Measured Molecular Weight	Approximately 32.8 kDa, a single non-glycosylated polypeptide chain containing 287 amino acids.
Purity	> 95 % by SDS-PAGE and HPLC analyses.
Formulation	Lyophilized from a 0.2 µm filtered concentrated solution in 20 mM Tris, 150 mM NaCl, pH 8.0.
Reconstitution	We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Reconstitute in sterile distilled water or aqueous buffer containing 0.1 % BSA to a concentration of 0.1-1.0 mg/ml. Stock solutions should be apportioned into working aliquots and stored at d -20 °C. Further dilutions should be made in appropriate buffered solutions.
Endotoxin Level	Less than 1 EU/µg of rHuMIC-B as determined by LAL method.
Physical Appearance	Sterile Filtered White lyophilized (freeze-dried) powder.
Usage	This material is for research, laboratory or further evaluation purposes. NOT FOR HUMAN USE.
Storage	This lyophilized preparation is stable at 2-8 °C, but should be kept at -20 °C for long term storage, preferably desiccated. Upon reconstitution, the preparation is stable for up to one week at 2-8 °C. For maximal stability, apportion the reconstituted preparation into working aliquots and store at -20 °C to -70 °C. **Avoid repeated freeze/thaw cycles.**

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