

## DATASHEET

Version 20181206

# MIC-B, Human

**Cat. No.:** Z02801-1

**Size:** 1.0 mg

**Synonyms:** (NULL)

### Description:

MIC-B (MHC class I chain-related gene B) is a trans-membrane 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  $\beta$ 2-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,  $\gamma\delta$  T cells, and CD8+  $\beta$ 223 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.

### Amino Acid Sequence:

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00001 AEPHSLRYNL MVLSDQESVQ SGFLAEGHLD GQPFRLYDRQ
00041 KRRAPQGGW AEDVLGAKTW DTETEDLTEN GQDLRLTLTH
00081 IKDQKGLHS LQEIRVCEIH EDSSTRGSRH FYYDGELFLS
00121 QNLETQESTV PQSSRAQTLA MNVTNFWKED AMTKTHYRA
00161 MQADCLQLQ RYLKSGVAIR RTVPPMVNVT CSEVSEGNIT
00201 VTCRASSFYP RNITLTWRQD GVSLSHNTQQ WG
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**Source:** *E. coli*

**Species:** Human

**Biological Activity:** Fully biologically active when compared to standard. The specific activity is determined by binding MICB antibody in ELISA.

**Molecular Weight:** Approximately 32.8 kDa, a single non-glycosylated polypeptide chain containing 287 amino acids.

**Formulation:** Lyophilized from a 0.2  $\mu$ m filtered concentrated solution in 20 mM Tris, 150 mM NaCl, pH 8.0.

**Appearance:** Sterile Filtered White lyophilized (freeze-dried) powder.

**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  $\leq -20$  °C. Further dilutions should be made in appropriate buffered solutions.

**Purity:** > 95 % by SDS-PAGE and HPLC analyses.

**Endotoxin Level:** Less than 1 EU/ $\mu$ g of rHuMIC-B as determined by LAL method.

**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.