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## Product Data Sheet

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Product Name: MICB Human  
 Cat. No.: GP23925  
 Batch No.: 1

### Product Data

Purity	>98%	Source	Escherichia Coli.
Physical Appearance	solid	Shipping Condition	Shipped at Room temp.
Synonyms	MHC class I polypeptide-related sequence B; MIC-B; MICB; PERB11.2.		
Solubility	It is recommended to reconstitute the lyophilized MICB in sterile 18MΩ-cm H <sub>2</sub> O not less than 100μg/ml, which can then be further diluted to other aqueous solutions.		
Formulation	Lyophilized from a concentrated (1mg/ml) solution containing no additives.		

### Introduction

MICB (MHC class I chain-related gene B) is a transmembrane glycoprotein that functions as a ligand for human NKG2D type II receptor. A closely related protein, MICA, shares 85% amino acid identity with MICB. These 2 proteins are distantly related to the MHC class I proteins. MICA and MICB (MICA/B) possess three extracellular immunoglobulin-like domains, but have no capacity to bind peptide or interact with β<sub>2</sub>-microglobulin. The genes encoding MICA/B are found within the major histocompatibility complex on human chromosome 6. The MICB locus is polymorphic with more than 15 recognized human alleles. MICA/B are minimally expressed on normal cells, but are frequently expressed on epithelial tumors and can be induced by bacterial and viral infections. MICA/B are ligands for NKG2D, an activating receptor expressed on NK cells, NKT cells, γδ T cells, and CD8+ γδ T cells. Recognition of MICA/B by NKG2D results in the activation of cytolytic activity and/or cytokine production by these effector cells. MICA/B recognition is involved in tumor surveillance, viral infections, and autoimmune diseases. The release of soluble forms of MICA/B from tumors down-regulates NKG2D surface expression on effector cells resulting in the impairment of anti-tumor immune response.

### Biological Activity

Measured by its ability to bind MICB antibody in ELISA.

**Caution: Product has not been fully validated for medical applications. For research use only.**

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### Stability

Lyophilized MICB although stable at room temperature for 3 weeks, should be stored desiccated below  $-18^{\circ}\text{C}$ . Upon reconstitution MICB should be stored at  $4^{\circ}\text{C}$  between 2-7 days and for future use below  $-18^{\circ}\text{C}$ . For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Please prevent freeze-thaw cycles.

### Background

MICB Human Recombinant produced in E.Coli is a single, non-glycosylated polypeptide chain containing 326 amino acids and having a molecular mass of 37kDa. The sequence contains the extracellular domain of the mature human MICB (amino acid residues Ala23 - Tyr312). The MICB is purified by proprietary chromatographic techniques.

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