Recombinant Human MHC Class I Polypeptide-Related Sequence B

#R00523

Size: 10 μg/100 μg/500 μg

Stability & Storage

Use a manual defrost freezer and avoid repeated freeze-thaw cycles.

- 12 months from date of receipt, -20 to -70 °C as supplied.
- 1 month, 2 to 8 °C under sterile conditions after reconstitution.
- 3 months, -20 to -70 °C under sterile conditions after reconstitution.

Warning: This product is intended for scientific research only. It is not to be used for medical or diagnostic procedures in humans or animals, nor as a food, cosmetic, or household product.

Background

MIC-B (MHC class I chain-related gene B) is a single-pass type I member protein. It is widely expressed in many, but not all, epithelial tumors of lung, breast, kidney, ovary, prostate and colon. In addition to this, it is produced by hepatocellular carcinomas, which is only in tumor cells but not in surrounding non-cancerous tissue and can be induced by bacterial and viral infections. MIC-B shares 85% amino acid identity with MIC-A and they are distantly related to the MHC class I proteins. Because they possess three extracellular Ig-like domains, but unlike classical MHC class I molecules, they do not form a heterodimer with beta2 microglobulin, but bind as a monomer to a KLRK1/NKG2D that is an activating receptor expressed on NK cells, NKT cells, γδ T cells, and CD8+ αβ T cells. Recognition of MIC-B by NKG2D results in the activation of cytolytic activity and/or cytokine production by these effector cells. MIC-B recognition plays an important role in tumor surveillance, viral infections, and autoimmune diseases.

AA Sequence

AEPHSLRYNLMVLSQDESVQSGFLAEGHLDGQPFLR
YDRQKRRAKPQGQWAEDVLGAKTWDTETEDLTENG
QDLRRTLTHIKDQKGGLHSLQEIRVCEIHEDSSTRGS
RHFYYDGELFLSQNLETQESTVPQSSRAQTLAMNVT
NFWKEDAMKTKTHYRAMQADCLQKLQRYLKSGVAIR
RTVPPMVNVTCSEVSEGNITVTCRASSFYPRNITLTW
RQDGVSLSHNTQQWGDVLPDGNGTYQTWVATRIRQ
GEEQRFTCYMEHSGNHGTHPVPSGKVLVLQSQRTD

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 ≤ -20 °C. Further dilutions should be made in appropriate buffered solutions.

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Product Specification

Species	Human
Source	Escherichia coli.
Molecular Weight	Approximately 32.8 kDa, a single non-glycosylated polypeptide chain containing 287 amino acids.
Purity	> 95 % by SDS-PAGE and HPLC analyses.
Biological Activity	Fully biologically active when compared to standard. The specific activity is determined by binding MICB antibody in ELISA.
Physical Appearance	Sterile Filtered White lyophilized (freeze-dried) powder.
Formulation	Lyophilized from a 0.2 μm filtered concentrated solution in 20 mM Tris, 150 mM NaCl, pH 8.0.
Endotoxin	Less than 1 EU/μg of rHuMIC-B as determined by LAL method.