

MICA Protein, Human, Recombinant (His), MICA*00801

General Information

Synonyms:	FLJ36918;MGC111087;DAMA-345G11.2;MHC class I polypeptide-related sequence A;MIC-A;MGC21250;PERB11.1;FLJ60820
Protein Construction:	A DNA sequence encoding the human MICA (NP_001170990.1) (Met1-Gln308) was expressed with a polyhistidine tag at the C-terminus. Predicted N terminal: Glu 24
Species:	Human
Expression Host:	HEK293 Cells
Accession:	Q96QC4
Molecular Weight:	34.3 kDa (predicted)

QC Testing

Biological Activity:	Measured by its binding ability in a functional ELISA. Immobilized MICA _h at 10 µg/mL (100 µL/well) can bind S4-Fc3L3-NKG2D, the EC ₅₀ of S4-Fc3L3-NKG2D is 200-450 ng/mL.
Purity:	≥ 95 % as determined by SDS-PAGE. ≥ 95 % as determined by SEC-HPLC.
Endotoxin:	< 1.0 EU/µg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 µm filter, containing PBS, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

MHC class I chain-related molecules A (MICA) is one of the genes in the HLA class I region, which belongs to the MHC class I family. It is the member of the non-classical class I family that displays the greatest degree of polymorphism. The MICA protein product is expressed on the cell surface, although unlike canonical class I molecules do not seem to associate with beta-2-microglobulin. It is thought that MICA functions as a stress-

induced antigen that is broadly recognized by NK cells, NKT cells, and most of the subtypes of T cells. The Natural killer group 2D (NKG2D), a C-type lectin-like activating immunoreceptor, is a receptor of MICA, which was detected on most gamma-delta T cells, CD8+ alpha-beta T cells, and natural killer (NK) cells. Effector cells from all these subsets could be stimulated by the ligation of NKG2D. Engagement of NKG2D activated cytolytic responses of gamma-delta T cells and NK cells against transfectants and epithelial tumor cells expressing MICA. The MICA system is a novel, avidin-free immunohistochemical detection system that provides a significant increase in sensitivity compared to traditional immunodetection systems.

Reference

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- Bauer S, et al. (1999) Activation of NK cells and T cells by NKG2D, a receptor for stress-inducible MICA. Science. 285 (5428): 727-9.
- Groh V, et al. (1998) Recognition of stress-induced MHC molecules by intestinal epithelial gammadelta T cells. Science. 279: 1737-40.

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