Data Sheet (Cat.No.TMPY-05476)

TargetMol

MICA Protein, Cynomolgus, Recombinant (His)

General Information

Synonyms: MHC class I polypeptide-related sequence A

Protein Construction: A DNA sequence encoding the cynomolgus MICA (AAO24115.1) (Glu1-Pro288) was expressed with a polyhistidine tag at the C-terminus. Predicted N terminal: Glu 1

Species: Cynomolgus

Expression Host: HEK293 Cells

Accession: A9UJR3

Molecular Weight: 34.3 kDa (predicted)

QC Testing

Biological Activity: Immobilized Recombinant Cynomolgus MICA Protein (His Tag) (Cat#TMPY-05476) at 5 μg/mL (100 μL/well) can bind Recombinant Human NKG2D/CD314/KLRK1 Protein (Fc Tag) (Cat#TMPY-00467), the EC50 is 1.1 μg/mL (Routinely tested).

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:

Reconstituted with sterile deionized water to 0.25 mg/mL. Reconstitution conditions may vary depending on the lot.

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

Choy MK, et al. (2010) MICA polymorphism: biology and importance in immunity and disease. Trends Mol Med. 16 (3): 97-106.

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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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