

CD39 Protein, Human, Recombinant (His)

General Information

Synonyms:	SPG64;CD39;ectonucleoside triphosphate diphosphohydrolase 1;NTPDase-1;ATPDase
Protein Construction:	A DNA sequence encoding the human ENTPD1 (NP_001767.3) (Thr38-Val478) was expressed with a polyhistidine tag at the C-terminus. Predicted N terminal: Thr 38
Species:	Human
Expression Host:	Baculovirus Insect Cells
Accession:	P49961-1
Molecular Weight:	51.8 kDa (predicted); 56.7 kDa (reducing condition, due to glycosylation)

QC Testing

Biological Activity:	Measured by its ability to hydrolyze the 5'-phosphate groups from the substrate adenosine-5'-triphosphate (ATP). The specific activity is >5000 pmol/min/μg.
Purity:	≥ 90 % as determined by SDS-PAGE. ≥ 90 % as determined by SEC-HPLC.
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Supplied as sterile 20 mM Tris, 300 mM NaCl, 10% Glycerol, pH 8.0.

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 the product under sterile conditions at -20°C to -80°C. Samples are stable for up to 12 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

Proteins are shipped with blue ice.

Protein Background

CD39, also known as ENTPD1, belongs to the GDA1/CD39 NTPase family. It is expressed primarily on activated lymphoid cells and can also be detected in endothelial tissues. The vascular isoform and the placental isoform II are present in both placenta and umbilical vein, whereas placental isoform I is present in placenta only. CD39 can hydrolyze both nucleoside triphosphates and diphosphates. It is the dominant ecto nucleotidase of vascular and placental trophoblastic tissues and appears to modulate the functional expression of type 2 purinergic (P2) G protein coupled receptors (GPCRs). CD39 transgenic mice exhibit impaired platelet aggregation, prolonged bleeding times, and resistance to systemic thromboembolism. There is a correlation between ATP hydrolysis and triglycerides in patients with chronic heart disease, suggesting a relationship between ATP diphosphohydrolase

and thrombogenesis. In the nervous system, CD39 could hydrolyze ATP and other nucleotides to regulate purinergic neurotransmission.

Reference

- Kunzli BM, et al. (2011) Variable impact of CD39 in experimental murine colitis. *Dig Dis Sci.* 2011 56 (5): 1393-403.
- Clayton A, et al. (2011) Cancer exosomes express CD39 and CD73, which suppress T cells through adenosine production. *J Immunol.* 187 (2): 676-83.
- Loza MJ, et al. (2011) T-cell specific defect in expression of the NTPDase CD39 as a biomarker for lupus. *Cell Immunol.* 271 (1): 110-7.

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