

## CANT1 Protein, Human, Recombinant (His)

### General Information

Synonyms:	SCAN1;SCAN-1;DBQD;SHAPY;calcium activated nucleotidase 1
Protein Construction:	A DNA sequence encoding the human CANT1 (Q8WVQ1-1) extracellular domain (Gly 80-Ile 401) was fused with polyhistidine tag at the N-terminus. Predicted N terminal: His
Species:	Human
Expression Host:	HEK293 Cells
Accession:	Q8WVQ1-1
Molecular Weight:	38 kDa (predicted); 40 kDa (reducing conditions)

### QC Testing

Biological Activity:	Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 88 % as determined by SDS-PAGE
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

CANT1 (calcium activated nucleotidase 1) belongs to the apyrase family. Apyrase is a calcium-activated plasma membrane-bound enzyme (magnesium can also activate it) (EC 3.6.1.5) that catalyses the hydrolysis of ATP to yield AMP and inorganic phosphate. Two isoenzymes are found in commercial preparations from *S. tuberosum*. One with a higher ratio of substrate selectivity for ATP: ADP and another with no selectivity. It can also act on ADP and other nucleoside triphosphates and diphosphates with the general reaction being  $NTP \rightarrow NDP + Pi \rightarrow NMP + Pi$ .

2Pi. The salivary apyrases of blood-feeding arthropods are nucleotide hydrolysing enzymes are implicated in the inhibition of host platelet aggregation through the hydrolysis of extracellular adenosine diphosphate. CANT1 functions as a calcium-dependent nucleotidase with a preference for UDP. Defects in CANT1 are the cause of desbuquois dysplasia.

### Reference

Failer BU, et al. (2002) Cloning, expression, and functional characterization of a Ca(2+)-dependent endoplasmic reticulum nucleoside diphosphatase. *J Biol Chem.* 277(40):36978-86.

Smith TM, et al. (2002) Cloning, expression, and characterization of a soluble calcium-activated nucleotidase, a human enzyme belonging to a new family of extracellular nucleotidases. *Arch Biochem Biophys.* 406(1):105-15.

Strausberg RL, et al. (2003) Generation and initial analysis of more than 15,000 full-length human and mouse cDNA sequences. *Proc Natl Acad Sci.* 99(26):16899-903.

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