

Cadherin 12/CDH12 Protein, Human, Recombinant (His)

General Information

Synonyms:	CDHB;cadherin 12, type 2 (N-cadherin 2)
Protein Construction:	A DNA sequence encoding the pro form of human CDH12 (NP_001304156.1) extracellular domain (Met 1-Ala 605) was fused with a polyhistidine tag at the C-terminus. Predicted N terminal: Gln 24
Species:	Human
Expression Host:	HEK293 Cells
Accession:	P55289
Molecular Weight:	66 kDa (predicted); 80-85 kDa (reducing condition, due to glycosylation)

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:	> 80 % 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 50 mM sodium citrate, 50 mM NaCl, 2 mM CaCl ₂ , pH 6.0. 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

Classic Cadherins represent a family of calcium-dependent homophilic cell-cell adhesion molecules. They confer strong adhesiveness to animal cells when they are anchored to the actin cytoskeleton via their cytoplasmic binding partners, catenins. The cadherin/catenin adhesion system plays key roles in the morphogenesis and function of the vertebrate and invertebrate nervous systems. Furthermore, this system is involved in synaptic

plasticity. Recent studies on the role of individual cadherin subtypes at synapses indicate that individual cadherin subtypes play their own unique role to regulate synaptic activities. Type II (atypical) cadherins are defined based on their lack of an HAV cell adhesion recognition sequence specific to type I cadherins. It has been observed that cells containing a specific cadherin subtype tend to cluster together to the exclusion of other types, both in cell culture and during development. Cadherin-12 also known as CDH12, is a type II classical cadherin from the cadherin superfamily of integral membrane proteins that mediate calcium-dependent cell-cell adhesion. Cadherin-12 appears to be expressed specifically in the brain and its temporal pattern of expression would be consistent with a role during a critical period of neuronal development, perhaps specifically during synaptogenesis.

Reference

Tanihara H, et al. (1994) Cloning of five human cadherins clarifies characteristic features of cadherin extracellular domain and provides further evidence for two structurally different types of cadherin. *Cell Adhes Commun.* 2(1): 15-26.

Suzuki SC, et al. (2008) Cadherins in neuronal morphogenesis and function. *Dev Growth Differ.* 50 Suppl 1: S119-30.

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