Recombinant Human Protocadherin α4

Catalog Number: 6509-CA

DESCRIPTION

Source	Chinese Hamster Ovary cell line, CHO-derived Met1-Asn697, with a C-terminal 6-His tag Accession # NP_113688
N-terminal Sequence Analysis	No results obtained: Gln30 predicted
Predicted Molecular Mass	73.0 kDa

SPECIFICATIONS

SDS-PAGE	80-100 kDa, reducing conditions
Activity	Measured by the ability of the immobilized protein to support the adhesion of BCE C/D-1b bovine corneal endothelial cells. The ED_{50} for this effect is 0.025-0.1 µg/mL. **Optimal dilutions should be determined by each laboratory for each application.**
Endotoxin Level	<1.0 EU per 1 µg of the protein by the LAL method.
Purity	>90%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 200 µg/mL in PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 3 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Protocadherin α4 (PCDHA4), also called CNR1 (cadherin-related neuronal receptor 1) in mouse, is a 110 - 120 kDa type I transmembrane glycoprotein in the protocadherin family of more than 70 calcium-dependent adhesion/recognition molecules (1 - 4). It is one of 14 isoforms encoded by a tandemly arranged gene cluster of protocadherin α genes, and is thus termed a clustered protocadherin. Isoforms show monoallelic and combinatorial expression in the synaptic membrane of differentiating neurons that is thought to contribute to neural pathway recognition and sorting (5 - 7). All isoforms have a similar, but non-identical extracellular region with 6 cadherin repeats, and a constant region at the C-terminus within the cytoplasmic domain indicating that all mediates similar intracellular signaling (4). Splice variants lacking the cytoplasmic constant region are common in clustered protocadherins; for PCDHA4 such a variant (798 aa versus the full-length 947 aa) has been described (4, 8). Protocadherins are widely expressed in neurons, localized to axons and synaptic junctions (5, 9). Crystal structures indicate that PCDHA4 and other clustered cadherins are not likely to participate in the homophilic adhesions that are typical of cadherins, but participate in heterophilic interactions with γ-protocadherins *in cis* that are needed for surface expression of α-protocadherin molecules (10, 11). Within the extracellular domain, human PCDHA4 shares 84% and 83% aa sequence identity with mouse and rat PCDHA4, respectively. An RGD motif in the first cadherin repeat of mouse PCDHA is thought to mediate β1 integrin adhesion, but is not present in human PCDHA4 (8, 10, 12). α- and γ-protocadherin molecules can be cleaved by matrix metalloproteinases and presenilin to generate a soluble extracellular domain and an intracellular portion that may be involved in signaling (1, 2).

References:

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