Recombinant Human Protocadherin γ C3

Catalog Number: 8364-CA

DESCRIPTION

Source	Chinese Hamster Ovary cell line, CHO-derived Ser30-Tyr693, with a C-terminal 6-His tag Accession # Q9UN70
N-terminal Sequence Analysis	Ser30
Predicted Molecular Mass	73 kDa

SPECIFICATIONS

SDS-PAGE	83-123 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 typicallu 0.025-0.125 µg/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE with silver staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 400 µg/mL in sterile 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 γ C3 is a member of the γ subgroup of clustered protocadherins (1). Like other γ protocadherins, mature Protocadherin γ C3 contains six extracellular cadherin domains, a transmembrane region, and a cytoplasmic domain (2, 3). Within the ECD, human Protocadherin γ C3 shares 91% and 92% amino acid sequence identity with mouse and rat Protocadherin γ C3, respectively. It plays an important role in cell adhesion and cell recognition through CA^{2+} -dependent homophilic interaction (4). MMP-mediated shedding of γ protocadherins and release of their cytoplasmic domain by the γ-secretase complex results in translocation of the intracellular domain into the nucleus and transcriptional activation of target genes (5-7). Protocadherin γ C3 is cleaved within its ectodomain by ADAM10 in fibroblasts and neuronal cells (8). Deletion of the entire protocadherin γ gene cluster is embryonic lethal in mice (9). Protocadherin γ C3 is most notably expressed in the nervous system (10). Conditional deletion of the protocadherin γ gene cluster in mice affects development of retinal ganglion cells and spinal cord interneurons, resulting in decreased synapses and increased neuronal apoptosis (9, 11-14). The C-type protocadherin γ isoforms specifically may be responsible for the increased apoptosis observed in mice lacking the entire protocadherin γ gene cluster (15). Cortical neuron-specific deletion of the protocadherin γ gene cluster results in dendritic arborization defects (16). The protocadherin γ subfamily may also be involved in cerebrospinal fluid production and the maturation and differentiation of postnatally born olfactory granule cells (17, 18).

References:

1. Yagi, T. (2008) Dev. Growth Differ. **50**:S131.
2. Sano, K. *et al.* (1993) EMBO J. **12**:2249.
3. Kohmura, N. *et al.* (1998) Neuron **20**:1137.
4. Obata, S. *et al.* (1995) J. Cell Sci. **108**:3765.
5. Hambsch, B. *et al.* (2005) J. Biol. Chem. **280**:15888.
6. Haas, I.G. *et al.* (2005) J. Biol. Chem. **280**:9313.
7. Bonn, S. *et al.* (2007) Mol. Cell. Biol. **27**:4121.
8. Reiss, K. *et al.* (2006) J. Biol. Chem. **281**:21735.
9. Wang, X. *et al.* (2002) Neuron **36**:843.
10. Phillips, G.R. *et al.* (2003) J. Neurosci. **23**:5096.
11. Weiner, J.A. *et al.* (2005) Proc. Natl. Acad. Sci. USA **102**:8.
12. Lefebvre, J.L. *et al.* (2008) Development **135**:4141.
13. Prasad, T. *et al.* (2008) Development **135**:4153.
14. Lin, C. *et al.* (2010) J. Biol. Chem. **285**:41675.
15. Chen, W.V. *et al.* (2012) Neuron **75**:402.
16. Garrett, A.M. *et al.* (2012) Neuron **74**:269.
17. Lobas, M.A. *et al.* (2012) J. Neurochem. **120**:913.
18. Ledderose, J. *et al.* (2013) Sci. Rep. **3**:1514.

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