

**DESCRIPTION**

**Source** Mouse myeloma cell line, NS0-derived  
Gln29-Pro338, with a C-terminal 6-His tag  
Accession # P97300

**N-terminal Sequence Analysis** No results obtained: Gln29 predicted

**Predicted Molecular Mass** 36 kDa

**SPECIFICATIONS**

**SDS-PAGE** 40-65 kDa, reducing conditions

**Activity** Measured by its ability to enhance neurite outgrowth of E18-E20 rat embryonic cortical neurons.  
Recombinant Mouse Neuroplastin immobilized at 5-10 µg/mL is able to significantly induce neurite outgrowth.

**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 250 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**

Neuroplastin (Np65), also known as gp65 and SDR1, is a widely expressed and variably glycosylated transmembrane member of the CD147/Basigin protein family (1, 2). The 62-75 kDa mature mouse Neuroplastin consists of a 310 amino acid (aa) extracellular region (ECD) with three immunoglobulin-like domains, a 21 aa transmembrane segment, and a 38 aa cytoplasmic domain (3, 4). Within the ECD, mouse Neuroplastin shares 94% and 98% aa sequence identity with human and rat Neuroplastin, respectively. Alternative splicing of mouse Neuroplastin generates additional isoforms that lack the first Ig-like domain, most of the first two Ig-like domains, and/or carry a 9 aa substitution in the cytoplasmic domain. The isoform lacking the first Ig-like domain is known as Neuroplastin-55. Neuroplastin is expressed on cerebellar Purkinje cells and granule cells, hippocampal pyramidal neurons, and retinal photoreceptors (5 - 9). It serves as a homophilic cell adhesion molecule on neurons and promotes neurite outgrowth (7, 8). The neurite outgrowth function requires its binding to and activation of FGFR1 (7, 10). In the synapse, Neuroplastin binds to multiple subunits of the GABA-A receptor, reduces synaptic expression of GluR1, and contributes to synaptic plasticity (7, 8, 11, 12). Neuroplastin overexpression can enhance tumor growth, VEGF production, and vascularization (13).

**References:**

1. Owczarek, S. and V. Berezin (2012) *Int. J. Biochem. Cell Biol.* **44**:1.
2. Langnaese, K. *et al.* (1998) *FEBS Lett.* **429**:284.
3. Shirozu, M. *et al.* (1996) *Genomics* **37**:273.
4. Langnaese, K. *et al.* (1997) *J. Biol. Chem.* **272**:821.
5. Marzban, H. *et al.* (2003) *J. Comp. Neurol.* **462**:286.
6. Bernstein, H-G. *et al.* (2007) *Brain Res.* **1134**:107.
7. Owczarek, S. *et al.* (2011) *J. Neurochem.* **117**:984.
8. Smalla, K-H. *et al.* (2000) *Proc. Natl. Acad. Sci. USA* **97**:4327.
9. Kreutz, M.R. *et al.* (2001) *Invest. Ophthalmol. Vis. Sci.* **42**:1907.
10. Owczarek, S. *et al.* (2010) *FASEB J.* **24**:1139.
11. Sarto-Jackson, I. *et al.* (2012) *J. Biol. Chem.* **287**:14201.
12. Empson, R.M. *et al.* (2006) *J. Neurochem.* **99**:850.
13. Rodriguez-Pinto, D. *et al.* (2009) *Cancer Immunol. Immunother.* **58**:221.