

## Contactin 3 Protein, Rat, Recombinant (hFc)

### General Information

Synonyms:	contactin 3 (plasmacytoma associated)
Protein Construction:	A DNA sequence encoding the rat CNTN3 (NP_062202.1)(Met1-Gly1001) was expressed with the Fc region of human IgG1 at the C-terminus. Predicted N terminal: Glu 20
Species:	Rat
Expression Host:	HEK293 Cells
Accession:	Q62682
Molecular Weight:	134.8 kDa (predicted); 135 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:	> 85 % 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

Contactins are a subgroup of molecules belonging to the immunoglobulin superfamily that are expressed exclusively in the nervous system. The subgroup consists of six members: Contactin-1, Contactin-2 (TAG-1), Contactin-3 (BIG-1), BIG-2, Contactin-5 (NB-2) and NB-3. Since their identification in the late 1980s, Contactin-1 and Contactin-2 have been studied extensively. Axonal expression and the neurite extension activity of Contactin-1 and Contactin-2 attracted researchers to study the function of these molecules in axon guidance during

development. Contactin-1 and Contactin-2 have come to be known as the principal molecules in the function and maintenance of myelinated neurons. In contrast, the function of the other four members of this subgroup remained unknown until recently. Contactin-3, also known as CNTN3 (BIG-1 in rat and PANG in mouse), is a GPI-linked glycoprotein that is expressed on cerebellar Purkinje cells, amygdaloid and thalamic neurons and olfactory granule cells. In the brain, Contactin-3 is expressed in frontal lobe, occipital lobe, cerebellum and amygdala. Contactin-3 contains 4 fibronectin type-III domains and 6 Ig-like C2-type (immunoglobulin-like) domains. Human Contactin-3 shares 92% aa identity with mouse Contactin-3. The exact function of Contactin-3 is unclear. Contactin-3 may mediate cell-cell interaction and may promote neurite outgrowth.

### Reference

- Yoshihara Y, et al. (1994) BIG-1: a new TAG-1/F3-related member of the immunoglobulin superfamily with neurite outgrowth-promoting activity. *Neuron* 13(2):415-26.
- Yoshihara Y, et al. (1995) Overlapping and differential expression of BIG-2, BIG-1, TAG-1, and F3: four members of an axon-associated cell adhesion molecule subgroup of the immunoglobulin superfamily. *Journal of neurobiology* 28(1):51-69.
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- Shimoda Y, et al. (2009) Contactins: Emerging key roles in the development and function of the nervous system. *Cell adhesion & migration* 3(1):64-70.

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