

## Cerberus 1/CER1 Protein, Human, Recombinant (HEK293, His)

### General Information

Synonyms:	DAN Domain Family Member 4;Cerberus;Cerberus-Related Protein;CER1;DAND4
Protein Construction:	Thr18-Ala267
Species:	Human
Expression Host:	HEK293 Cells
Accession:	O95813
Molecular Weight:	35-42 KDa (reducing condition)
AA Sequence:	Thr18-Ala267

### QC Testing

Biological Activity:	Activity has not been tested. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	Greater than 95% as determined by reducing SDS-PAGE. (QC verified)
Endotoxin:	< 0.1 ng/μg (1 EU/μg) as determined by LAL test.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing 20 mM NaAc-HAC, pH 4.5

### Preparation and Storage

#### Reconstitution:

Reconstitute the lyophilized protein in distilled water. The product concentration should not be less than 100 μg/ml. Before opening, centrifuge the tube to collect powder at the bottom. After adding the reconstitution buffer, avoid vortexing or pipetting for mixing.

#### Stability & Storage:

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

Cerberus 1 is a secreted glycoprotein that forms disulfide-linked homodimers. It is a cytokine member of the DAN domain family of BMP antagonists that includes DAN (DAND1), Gremlin/Drm (DAND2), PRDC (Protein Related to Dan and Cerberus, DAND3), and COCO/Dante (DAND5). DAN family members contain a cysteine knot domain that is homologous to that found in other TGF-beta superfamily ligands. At the onset of gastrulation, Cerberus 1 is transiently expressed in anterior endodermal structures in response to Nodal and Shh. Cerberus 1 binds BMP-4

and Nodal and inhibits their activities. The inhibitory functions of Cerberus favor mesodermal development in the anterior region of the gastrula and suppresses posterior mesodermal differentiation. In chick and Xenopus, Cerberus 1 also regulates, but is not required for embryonic left-right polarization, neurulation, and head and heart induction.

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