Data Sheet (Cat.No.TMPY-02679)

TargetMol

Cripto Protein, Rat, Recombinant (hFc)

General Information

Synonyms:	teratocarcinoma-derived growth factor 1
Protein Construction:	A DNA sequence encoding the rat TDGF1 (XP_001056317.2) (Met 1-Cys 143) was fused with the Fc region of human IgG1 at the C-terminus. Predicted N terminal: Phe 17
Species:	Rat
Expression Host:	HEK293 Cells
Accession:	XP_001056317.2
Molecular Weight:	41 kDa (predicted); 45 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:	> 90 % 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

Cripto/TDGF1 is a member of the epidermal growth factor (EGF)- Cripto, Frl-1, and Cryptic (CFC) family. EGF-CFC family member proteins share a variant EGF-like motif, a conserved cysteine-rich domain, and a C-terminal hydrophobic region. Before gastrulation, Cripto is asymmetrically expressed in a proximal-distal gradient in the epiblast, and subsequently is expressed in the primitive streak and newly formed embryonic mesoderm. These proteins play key roles in intercellular signaling pathways during vertebrate embryogenesis. Mutations in

Cripto/TDGF1 can cause autosomal visceral heterotaxy. Cripto/TDGF1 is involved in left-right asymmetric morphogenesis during organ development. Cripto signalling is essential for the conversion of a proximal-distal asymmetry into an orthogonal anterior-posterior axis. The mechanism of inhibitory effects of the Cripto includes both cancer cell apoptosis, activation of c-Jun-NH(2)-terminal kinase and p38 kinase signaling pathways and blocking of Akt phosphorylation. Thus, Cripto is a unique target, and Immunohistochemistry to Cripto could be of therapeutic value for human cancers.

Reference

Calvanese L, et al. (2006) Solution structure of mouse Cripto CFC domain and its inactive variant Trp107Ala. J Med Chem. 49 (24): 7054-62.

Lonardo E, et al. (2010) A small synthetic cripto blocking Peptide improves neural induction, dopaminergic differentiation, and functional integration of mouse embryonic stem cells in a rat model of Parkinson's disease. Stem Cells. 28 (8): 1326-37.

Chambery A, et al. (2009) Qualitative and quantitative proteomic profiling of cripto(-/-) embryonic stem cells by means of accurate mass LC-MS analysis. J Proteome Res. 8 (2): 1047-58.

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