# Data Sheet (Cat.No.TMPY-03187)

TargetMol

## ALK-7 Protein, Rhesus, Recombinant (hFc)

### General Information

| | |
|---|---|
| Synonyms: | activin A receptor, type IC |
| Protein Construction: | A DNA sequence encoding the rhesus ACVR1C (NP_001253619.1) (Gly25-Glu113) was expressed with the Fc region of human IgG1 at the C-terminus. Predicted N terminal: Gly 25 |
| Species: | Rhesus |
| Expression Host: | HEK293 Cells |
| Accession: | F7GDQ6 |
| Molecular Weight: | 36.6 kDa (predicted) |

### 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: | > 95 % 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

ALK-7, also known as ALK7 and ACVR1C, belongs to the ALK family. It is a type I receptor for the TGFB family of signaling molecules. TGF-β is the prototype of a protein superfamily which, in humans, contains at least 35 members, including activins, inhibins, bone morphogenetic proteins, growth/differentiation factors, and Müllerian inhibiting substance. ALK-7 is a serine-threonine kinase that can cause the activation of one of the SMAD signal transducers, SMAD2. ALK-7 has a ligand known as Nodal. Nodal stimulates the secretion of TIMP-1 and inhibits

matrix metalloproteinases MMP-2 and MMP-9 activity. The overexpression of Nodal or constitutively active ALK-7 decreases cell migration and invasion, whereas knock-down of Nodal and ALK-7 has the opposite effects.

Reference

Lin YY,et al. (2012) Functional dissection of lysine deacetylases reveals that HDAC1 and p300 regulate AMPK. Nature. 482(7384):251-5.

He C,et al. (2010) A large-scale candidate gene association study of age at menarche and age at natural menopause. Hum Genet. 128(5):515-27.

Watanabe R,et al. (2008) Insulin gene is a target in activin receptor-like kinase 7 signaling pathway in pancreatic beta-cells. Biochem Biophys Res Commun. 377(3):867-72.