Data Sheet (Cat.No.TMPY-03234)

TargetMol

CD42c Protein, Rat, Recombinant (hFc)

General Information

Synonyms:	glycoprotein Ib (platelet), β polypeptide;glycoprotein Ib (platelet), beta polypeptide
Protein Construction:	A DNA sequence encoding the rat GP1BB (Q9JJM7) (Met1-Cys147) was expressed, fused with the Fc region of human IgG1 at the C-terminus. Predicted N terminal: Pro 27
Species:	Rat
Expression Host:	HEK293 Cells
Accession:	Q9JJM7
Molecular Weight:	40.1 kDa (predicted); 63 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

Platelet glycoprotein Ib (GPIb) complex is best known as a major platelet receptor for von Willebrand factor essential for platelet adhesion under high shear conditions found in arteries and thrombosis. The GPIb complex is composed of GPIb alpha (Platelet glycoprotein Ib alpha chain) covalently attached to GPIb beta (Platelet glycoprotein Ib beta chain) and non-covalently complexed with GPIX and GPV. GPIb-beta, also known as GP1BB, CD42b-beta, and CD42c, is a single-pass type I membrane protein expressed in the heart and brain, which is a

critical component of the von Willebrand factor (vWF) receptor. The cysteine knot region of GPIb beta in the N terminus is critical for the conformation of GPIb beta that interacts with GPIX. The precursor of GP1BB is synthesized from a 1.0 kb mRNA expressed in platelets and megakaryocytes. GPIb is a heterodimeric transmembrane protein consisting of a disulfide-linked 140 kD alpha chain and 22 kD beta chain. GPIb alpha chain provides the vWF binding site, and GPIb beta chain contributes to surface expression of the receptor and participates in transmembrane signaling through phosphorylation of its intracellular domain. GP1BB is part of the GPIb-V-IX system that constitutes the receptor for von Willebrand factor (vWF) and mediates platelet adhesion in the arterial circulation. Defects in GP1BB are a cause of Bernard-Soulier syndrome (BSS), also known as giant platelet disease (GPD). BSS patients have unusually large platelets and have a clinical bleeding tendency.

Reference

Kenny D,et al.(2002) The cysteine knot of platelet glycoprotein Ib beta (GPIb beta) is critical for the interaction of GPIb beta with GPIX. Blood. 99(12): 4428-33.

Tang J,et al.(2004) Mutation in the leucine-rich repeat C-flanking region of platelet glycoprotein Ib beta impairs assembly of von Willebrand factor receptor. Thromb Haemost. 92(1): 75-88.

Vanhoorelbeke K,et al.(2007) Inhibition of platelet glycoprotein Ib and its antithrombotic potential. Curr Pharm Des. 13(26): 2684-97.

Clemetson KJ,et al.(2008) Platelet GPIb complex as a target for anti-thrombotic drug development. Thromb Haemost. 99(3): 473-9.