Data Sheet (Cat.No.TMPY-03402)

TargetMol

Osteoactivin/GPNMB Protein, Human, Recombinant (hFc)

General Information

Synonyms:	glycoprotein (transmembrane) nmb;NMB;HGFIN;Osteoactivin
Protein Construction:	A DNA sequence encoding the human GPNMB (Q14956-2) (Met1-Pro474) was expressed with the Fc region of human IgG1 at the C-terminus. Predicted N terminal: Ala 22
Species:	Human
Expression Host:	HEK293 Cells
Accession:	Q14956-2
Molecular Weight:	77.8 kDa (predicted); 114 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:	> 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

GPNMB belongs to the PMEL / NMB family, also known as Osteoactivin and Hematopoietic growth factor-inducible neurokinin 1 (HGFIN), is a transmembrane glycoprotein that is expressed in numerous cells, including osteoclasts, macrophages, dendritic cells, and tumor cells. It is suggested to influence osteoblast maturation, cell adhesion, and migration. GPNMB protein acts as a downstream mediator of BMP-2 effects on osteoblast differentiation and function. GPNMB participates in bone mineralization and functions as a negative regulator of inflammation in

macrophages. Osteoactivin is expressed at high levels in normal and inflammatory liver macrophages suggesting a significant role in acute liver injury. The early-phase upregulation of Osteoactivin expression in the tubular epithelium in response to renal injury might play a role in triggering renal interstitial fibrosis via activation of matrix metalloproteinase expression and collagen remodeling in rats. Osteoactivin is a protein that is expressed in aggressive human breast cancers and is capable of promoting breast cancer metastasis to bone.

Reference

Pahl MV. et al., 2010, Clin J Am Soc Nephrol. 5(1): 56-61.
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Haralanova-Ilieva B. et al., 2005, J Hepatol. 242(4): 565-72.
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