Data Sheet (Cat.No.TMPY-06719)

TargetMol

GPRC5D Protein, Human, Recombinant (His & FLAG)

General Information

Synonyms:	GPRC5D
Protein Construction:	A DNA sequence encoding the human GPRC5D (Q9NZD1) (Met1-Ser268) was expressed, with a Flag tag at the N-terminus and a polyhistidine tag at the C-terminus.Nanodisc is a versatile tool for studying membrane proteins. Using styrene-maleic acid (SMA) copolymer, membrane proteins can be extracted directly from prokaryotic and eukaryotic expression systems in the absence of detergents to preserve the protein structure and function better. Compared to membrane scaffold proteins (MSPs) nanodiscs, SMA nanodiscs also have the advantage of preserving proteins' nature by maintaining native lipids surrounded without introducing any heterologous proteins, which allows studies of protein structure and functions in a native-like environment. Predicted N terminal: Met
Species:	Human
Expression Host:	HEK293 Cells
Accession:	Q9NZD1
Molecular Weight:	32.83 kDa (predicted)

QC Testing

Biological Activity:	1. Immobilized Human GPRC5D Protein at 5 μg/mL (100 μL/well) can bind Anti-Human GPRC5D Antibody, Human IgG1, the EC50 is 20.6ng/mL (QC tested). 2.Loaded Anti-GPRC5D Antibody on Protein A Biosensor, can bind GPRC5D Protein with an affinity constant of 0.782 nM as determined in BLI assay (Sartorius Octet Red96e) (Routinely tested). 3.Captured Anti-GPRC5D antibody on anti-Human IgG Fc via CM5 Chip can bind GPRC5D protein with an affinity constant of 9.609nM as determined in a SPR assay (Routinely tested).
Purity:	≥ 75 % as determined by SDS-PAGE.
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Supplied as solution in 10 mM HEPES, 50 mM NaCl, pH7.5 with glycerol as protectant.

Preparation and Storage

Stability & Storage:

It is recommended to store the product under sterile conditions at -70°C or lower. Samples are stable for up to 3 months at -80°C. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

Proteins are shipped with blue ice.

Protein Background

Orphan G-protein-coupled receptor family C group 5 member D (GPRC5D) has seven transmembrane segments forming the core of the receptor, as well as an intracellular C-tail and an extracellular N-terminal domain. GPRC5D is highly and selectively expressed on the surface of CD138+ multiple myeloma (MM) cells, whereas in normal tissues, a much lower expression is limited to plasma cells and certain hard keratinizing tissues. This makes GPRC5D a promising marker for monitoring tumor load and a target antigen for MM-specific T cell-engaging therapies such as bispecific antibodies and CAR-T cells.

Reference

Eric L. Smith, et al. GPRC5D is a target for the immunotherapy of multiple myeloma with rationally designed CAR T cells. Sci. Transl. Med. 2019.

Christie, et al. Preclinical activity and determinants of response of the GPRC5DxCD3 bispecific antibody talquetamab in multiple myeloma. Blood Adv 2021.

Tatsushi Kodama, et al. Anti-GPRC5D/CD3 Bispecific T-Cell-Redirecting Antibody for the Treatment of Multiple Myeloma. Mol Cancer Ther 1 September 2019.