



LD Biopharma, Inc.
7384 Trade Street, Suite B
San Diego, CA 92121
Tel: 858-876-8266
<http://www.ldbiopharma.com>

- PRODUCT DATA SHEET -

Name of Product: Recombinant Human GPC1 Protein
Catalog Number: HRP-1813
Manufacturer: LD Biopharma, Inc. USA

Introduction

GPC1 (Glypican-1) is cell surface proteoglycan that bears heparan sulfate. It binds, via the heparan sulfate side chains, alpha-4 (V) collagen and participates in Schwann cell myelination. It may act as a catalyst in increasing the rate of conversion of prion protein PRPN(C) to PRNP(Sc) via associating (via the heparan sulfate side chains) with both forms of PRPN, targeting them to lipid rafts and facilitating their interaction. PRC1 is required for proper skeletal muscle differentiation by sequestering FGF2 in lipid rafts preventing its binding to receptors (FGFRs) and inhibiting the FGF-mediated signaling.

Full-length mature human GPC1 cDNA (24-530aa) was constructed with codon optimization using gene synthesis technology and expressed with a small T7-His-TEV cleavage site Tag (29aa) fusion at its N-terminal in *E.coli* as inclusion bodies. The final product was refolded using our unique “temperature shift inclusion body refolding” technology and chromatographically purified.

Gene Symbol: GPC1
Accession Number: NP_002072.2
Species: Human
Size: 50 µg / Vial
Composition: 1.0 mg/ml, sterile-filtered, in 20 mM pH 8.0 Tris-HCl Buffer, with proprietary formulation of NaCl, KCl, EDTA, Sucrose & others.
Storage: In liquid. Keep at -80°C for long term storage. Product is stable at 4 °C for at least two weeks.

Key References

Sonia A, et al., *Glypican 1 identifies cancer exosomes and detects early pancreatic cancer*. Nature: doi:10.1038/nature14581 (2015)

Qiao D, et al., *Glypican 1 stimulates S phase entry and DNA replication in human glioma cells and normal astrocytes*. Mol. Cell.



LD Biopharma, Inc.
7384 Trade Street, Suite B
San Diego, CA 92121
Tel: 858-876-8266
<http://www.ldbiopharma.com>

Biol. 33 (22), 4408-4421 (2013)

Dwivedi PP, et al., *Regulation of bone morphogenetic protein signalling and cranial osteogenesis by Gpc1 and Gpc3*. Bone 55 (2), 367-376 (2013)

Svensson G, et al., *Crystal structure of N-glycosylated human glypican-1 core protein: structure of two loops evolutionarily conserved in vertebrate glypican-1*. J. Biol. Chem. 287 (17), 14040-14051 (2012)

Applications

- May be used for study GPC1 mediated neuronal / cancer cell differentiation regulatory in vitro using recombinant GPC1 protein either as soluble factor or as coating matrix protein.
- May be used for mapping GPC1 protein-protein interaction.
- High purified native GPC1 protein, which may be used for specific antibody production.
- Potential biomarker for early diagnostic application (Exosome) for detection of pancreatic cancer.

Quality Control:

1. Purity: > 93 % by SDS-PAGE.

Recombinant Human GPC1 Protein Sequence. (59.3 kD)

MASMTGGQQMGRGHHHHHENLYFQGGEFDPASKSRSCGEVRQIYGAKGFSLSDVPQAEISGEH
LRICPQGYTCCTSEMEENLANRSHAELETALRDSSRVLQAMLATQLRSFDDHFQHLLNDSERTL
QATFPGAFGELYTQNARAFRDLYSELRLYYRGANLHLEETLAEFWARLLERLQKQLHPQLLLPD
DYLDCLGKQAEALRPFGEAPRELRLRATRAVFAARSFVQGLGVASDVVRKVAQVPLGPECSRAV
MKLVYCAHCLGVPGARPCPDYCRNVLKGCCLANQADLDAEWRNLLDSMVLITDKFWGTSGVESVI
GSVHTWLAEAINALQDNRDRTLAKVIQCGGNPKVNPQGPPEEKRRRGKLAPRERPPSGTLEKL
VSEAKAQLRDVQDFWISLPGTLCSEKMALSTASDDRCWNGMARGRYLPEVMGDGLANQINNPEV
EVDITKPDMTIRQQIMQLKIMTNRLRSAYNGNDVDFQDASDDGSGSGSGDGLDDLCRKRKSRK
SSSRTPPLTHALPGLSEQEGQKTS