Recombinant Human Glypican 3
Catalog Number: 2119-GP

DESCRIPTION
Source
Mouse myeloma cell line, NS0-derived
Met1-His559 with a C-terminal 6-His tag
Accession # P51654.1

N-terminal Sequence Analysis
No results obtained: Gln25 predicted, Ser359 & Val483

Structure / Form
Glypican 3 is subject to endoproteolytic processing by proprotein convertases (PC). By amino acid sequencing, three peptides (the first with a blocked N-terminus most likely starts with Gln25, the second peptide starts with Ser359 after a furin cleavage site, and the third peptide starts with Val483) are present in the recombinant GPC3 preparation. Peptides 2 and 3 are detected at a 1:1 ratio. All three peptides remained associated via disulfide bonds.

Predicted Molecular Mass
61.6 kDa

SPECIFICATIONS
SDS-PAGE
60-100 kDa, non-reducing conditions

Activity
Measured by its binding ability in a functional ELISA. When Recombinant Human Glypican 3 is immobilized at 0.5 µg/mL (100 µL/well), the concentration of Recombinant Human FGF basic 146 aa (Catalog # 233-FB) that produces 50% of the optimal binding response is approximately 0.6-3 ng/mL.

Endotoxin Level
<0.10 EU per 1 µg of the protein by the LAL method.

Purity
>97%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.

Formulation
Lyophilized from a 0.2 µm filtered solution in PBS with BSA as a carrier protein. See Certificate of Analysis for details.

PREPARATION AND STORAGE
Reconstitution
Reconstitute at 10 µg/mL in sterile PBS containing at least 0.1% human or bovine serum albumin.

Shipping
The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

Stability & Storage
Use a manual defrost freezer and avoid repeated freeze-thaw cycles.
- 12 months from date of receipt, -20 to -70 °C as supplied.
- 1 month, 2 to 8 °C under sterile conditions after reconstitution.
- 3 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND
Glypicans (GPC) are a family of heparan sulfate proteoglycans that are attached to the cell surface by a glycosylphosphatidylinositol (GPI) anchor. Six members of this family have been identified in mammals (GPC1-GPC6). All glypican core proteins contain an N-terminal signal peptide, a large globular cysteine-rich domain (CRD) with 14 invariant cysteine residues, a stalk-like region containing the heparan sulfate attachment sites, and a C-terminal GPI attachment site. While glypican proteins do not share strong amino acid sequence identity (they range from 17-63%), the conserved cysteine residues in their CRDs suggest similarity in their three-dimensional structure (1, 2).

Mutations in GPC3 cause a rare disorder in humans, Simpson-Golabi-Behmel Syndrome, which is characterized by pre and postnatal overgrowth of multiple tissues and organs and an increased risk for developing embryonic tumors (3). These features are also present in the mouse knock-out of GPC3 indicating that GPC3 regulates cell survival and inhibits cell proliferation during development (4). Glypican 3 has been implicated in regulating many different signaling pathways including: IGF, FGF, BMP and Wnt. An endoproteolytic processing of GPC3 by proprotein convertases is required for the modulation of Wnt signaling (5). Direct interaction with FGF-basic has been observed and is mediated by the heparan sulfate chains (6).

References: