

DESCRIPTION

Source Mouse myeloma cell line, NS0-derived
Gly26-Gly549, with a C-terminal 6-His tag
Accession # NP_780709

N-terminal Sequence Analysis Gly26

Predicted Molecular Mass 59.1 kDa

SPECIFICATIONS

SDS-PAGE 61-65 kDa, reducing conditions

Activity Measured by its binding ability in a functional ELISA.
Immobilized rmGlypican 5 at 5 µg/mL (100 µL/well) can bind rhFGF-basic with a linear range of 0.16-10 ng/mL.

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

Purity >95%, by SDS-PAGE under reducing conditions and visualized by silver stain.

Formulation Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution Reconstitute at 100 µg/mL in sterile PBS.

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

The glypicans (*glypiated proteoglycans*) are a small multigene family of GPI-linked proteoglycans that likely play a key role in embryonic morphogenesis (1 - 4). There are six known mammalian glypicans. They all share a common-sized protein core of 60 - 70 kDa, an N-terminus which likely forms a compact globular domain, 14 conserved cysteines that form multiple intrachain disulfide bonds, and a number of C-terminal N- and O-linked carbohydrate attachment sites. Based on exon organization and the location of O-linked glycosylation sites, at least two subfamilies of glypicans are known, with one subfamily containing glypicans-1, 2, 4, and 6, and another subfamily containing glypicans-3 and 5 (3, 5). Mouse glypican-5 (GPC-5) is synthesized as a 572 amino acid (aa) preproprecursor that contains a 24 aa signal sequence and, based on human GPC-5, a 532 aa mature segment plus a 16 aa C-terminal prosegment (6, 7). There are four potential N-linked, and four potential O-linked sites for glycosylation or glycanation. GPC-5 is believed to contain 6 - 7 kDa of glycosylation and at least 55 kDa of proteoglycan. This is based on an assumption of the presence of the least one heparan sulfate chain of 36 kDa and one chondroitin sulfate chain of 17 kDa (8, 9). When added to the core molecular weight of 59 kDa, it may be approximately 120 kDa in the native state. The actual size of neither mouse nor human GPC-5 has been reported, and the suggestion of a chondroitin sulfate modification is based on the expression of human GPC-5 in COS-7 cells (8). Mouse to human, there is 88% aa identity over the mature region. Cells known to express GPC-5 are principally embryonic in nature, and include neurons and mesenchyme (1, 8). As a glypican family member, it may facilitate heparin-binding growth factor signaling and polyamine uptake into expressing cells (10, 11).

References:

1. Song, H.H. and J. Filmus (2002) *Biochim. Biophys. Acta* **1573**:241.
2. Filmus, J. (2001) *Glycobiology* **11**:19R.
3. De Cat, B. and G. David (2001) *Semin. Cell Dev. Biol.* **12**:117.
4. Filmus, J. and S.B. Selleck (2001) *J. Clin. Invest.* **108**:497.
5. Veugelers, M. *et al.* (1999) *J. Biol. Chem.* **274**:26968.
6. GenBank Accession # Q8CAL5.
7. Veugelers, M. *et al.* (1997) *Genomics* **40**:24.
8. Saunders, S. *et al.* (1997) *Dev. Biol.* **19**:78.
9. Rapraeger, A. *et al.* (1985) *J. Biol. Chem.* **260**:11046.
10. Fransson, L-A. *et al.* (2004) *Cell Mol. Life Sci.* **61**:1016.
11. Fransson, L-A. (2003) *Int. J. Biochem. Cell Biol.* **35**:125.