

**DESCRIPTION**

<b>Source</b>	Chinese Hamster Ovary cell line, CHO-derived human Glypican 3 protein			
	Human Glypican-3 (Gln25-His559) Accession # P51654.1	IEGRMD	Human IgG1 (Pro100-Lys330)	Avi-tag
	N-terminus		C-terminus	
<b>N-terminal Sequence Analysis</b>	Gln25			
<b>Structure / Form</b>	Disulfide linked homodimer Biotinylated via Avi-tag			
<b>Predicted Molecular Mass</b>	89 kDa			

**SPECIFICATIONS**

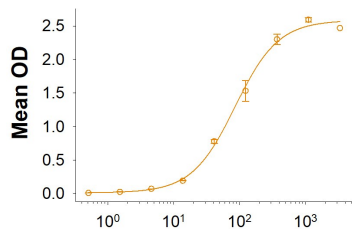
<b>SDS-PAGE</b>	>190 kDa, under non-reducing conditions.
<b>Activity</b>	Measured by its binding ability in a functional ELISA. Biotinylated Recombinant Human Glypican 3 Fc Chimera Avi-tag (Catalog # AV111078) binds to Recombinant Human FGF basic/FGF2/bFGF (Catalog # 233-FB/CF) with an ED <sub>50</sub> of 60.0-720 ng/mL.
<b>Endotoxin Level</b>	<0.10 EU per 1 µg of the protein by the LAL method.
<b>Purity</b>	>90%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

**PREPARATION AND STORAGE**

<b>Reconstitution</b>	Reconstitute at 250 µg/mL in water.
<b>Shipping</b>	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> <li>• 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>• 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>• 3 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

**DATA**

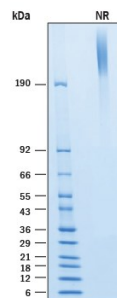
**Binding Activity**



**Biotinylated Recombinant Human Glypican 3 Avi-tag (ng/mL)**

**Biotinylated Recombinant Human Glypican 3 Fc Chimera Avi-tag Protein Binding Activity.** In a functional ELISA, Biotinylated Recombinant Human Glypican 3 Fc Chimera Avi-tag Protein (Catalog # AV111078) binds to Recombinant Human FGF basic/FGF2/bFGF (Catalog # 233-FB/CF) with an ED<sub>50</sub> of 60.0-720 ng/mL.

**SDS-PAGE**



**Biotinylated Recombinant Human Glypican 3 Fc Chimera Avi-tag Protein SDS-PAGE.** 2 µg/lane of Biotinylated Recombinant Human Glypican 3 Fc Chimera Avi-tag Protein (Catalog # AV111078) was resolved with SDS-PAGE under non-reducing (NR) condition and visualized by Coomassie® Blue staining, showing bands at >190 kDa.

**BACKGROUND**

Glypican 3 (GPC3), also known as OCI5 and MXR7, is a member of the heparan sulfate proteoglycan (HSPG) family (1). In mammals, six glypican family members have been identified, all sharing a structurally common extracellular domain (ECD) with 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. The ECD of GPC3 can be cleaved by furin to produce two subunits that are linked by disulfide bonds: a 40 kDa N-terminal alpha subunit that can be secreted into the blood and a 30 kDa membrane-bound C-terminal beta subunit containing two HS glycan chains (1-3). Within ECD, human GPC3 shares 96% amino acid sequence identity with both mouse and rat GPC3. Several isoforms of GPC3 due to alternative splicing have been reported (1). GPC3 is widely expressed on the membrane of various embryonic cells, but not on those in adult liver, and is involved in the regulation of growth and development of the body (4). GPC3 is over-expressed in hepatocellular carcinomas and binding of GPC3 to CD81 promotes development of carcinomas by activation of Hippo pathways in hepatocytes (5). GPC3 is an important biomarker present in the serum of hepatocellular carcinoma patients, which distinguishes benign from cancerous nodules (6). Loss-of-function mutations in GPC3 are associated with Simpson-Golabi-Behmel (SGB) syndrome, a condition characterized by tissue overgrowth (dysmorphogenesis) (7). Our Avi-tag Biotinylated Recombinant Glypican 3 features biotinylation at a single site contained within the Avi-tag, a unique 15 amino acid peptide. Protein orientation will be uniform when bound to streptavidin-coated surface due to the precise control of biotinylation and the rest of the protein is unchanged so there is no interference in the protein's bioactivity.

**References:**

1. Ho, M. and Kim, H. (2012) *Eur. J. Cancer*. **47**:333.
2. Haruyama, Y. and Kataoka, H. (2016) *World J. Gastroenterol*. **22**:275.
3. Shimizu, Y. *et al.* (2019) *Front Oncol*. **9**:248.
4. Gonzales, A.D. *et al.* (1998) *J. Cell Biol.* **141**:1407.
5. Xue, Y. *et al.* (2018) *Am J Pathol*. **188**(6):1469.
6. Ge, S. *et al.* (2018) *Filmus, Int J Clin Exp Pathol*. **11**(12):5774.
7. Pilia, G. *et al.* (1996) *Nature Genet*.**12**:241.