

DESCRIPTION

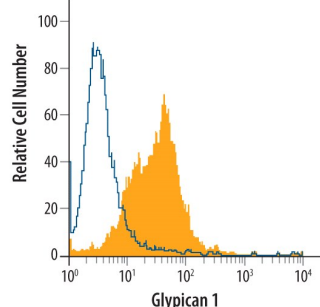
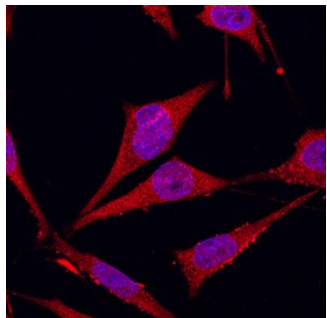
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| Species Reactivity | Human |
| Specificity | Detects human Glypican 1 in direct ELISAs and Western blots. In direct ELISAs and Western blots, approximately 15% cross-reactivity with recombinant mouse Glypican 1 is observed and less than 1% cross-reactivity with recombinant human (rh) Glypican 5 and rhGlypican 6 is observed. |
| Source | Polyclonal Goat IgG |
| Purification | Antigen Affinity-purified |
| Immunogen | Mouse myeloma cell line NS0-derived recombinant human Glypican 1 Asp24-Ser530 Accession # P35052 |
| Formulation | Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 µm filtered solution in PBS. |

APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. *General Protocols* are available in the *Technical Information* section on our website.

| | Recommended Concentration | Sample |
|----------------------------|--|--|
| Western Blot | 0.1 µg/mL | Recombinant Human Glypican 1 (Catalog # 4519-GP) |
| Flow Cytometry | 2.5 µg/10 ⁶ cells | See Below |
| Immunocytochemistry | 5-15 µg/mL | See Below |
| CyTOF-ready | Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation. | |

DATA

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| <p>Flow Cytometry</p>  <p>Detection of Glypican 1 in MDA-MB-231 Human Cell Line by Flow Cytometry. MDA-MB-231 human breast cancer cell line was stained with Goat Anti-Human Glypican 1 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF4519, filled histogram) or isotype control antibody (Catalog # AB-108-C, open histogram), followed by Phycoerythrin-conjugated Anti-Goat IgG Secondary Antibody (Catalog # F0107).</p> | <p>Immunocytochemistry</p>  <p>Glypican 1 in MDA-MB-231 Human Cell Line. Glypican 1 was detected in immersion fixed MDA-MB-231 human breast cancer cell line using Goat Anti-Human Glypican 1 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF4519) at 10 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Goat IgG Secondary Antibody (red; Catalog # NL001) and counterstained with DAPI(blue). Specific staining was localized to cytoplasmic. View our protocol for Fluorescent ICC Staining of Cells on Coverslips.</p> |
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PREPARATION AND STORAGE

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| Reconstitution | Reconstitute at 0.2 mg/mL in sterile PBS. |
| Shipping | The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C |
| Stability & Storage | Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 6 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 play a key role in growth factor signaling (1, 2, 3, 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). Human Glypican 1 (GPC-1) is synthesized as a 558 amino acid (aa) preproprecursor that contains a 23 aa signal sequence, a 507 aa mature segment, and a 28 aa C-terminal prosegment (6, 7). There are two potential N-linked and four potential O-linked sites for glycosylation or glycanation. There are potentially two heparan sulfate (HS) modifications on GPC-1 that could contribute to a native molecular weight of approximately 200 kDa (7, 8, 9). Mature human GPC-1 shares 91% aa identity with mature mouse GPC-1. There are two potential splice variants of human GPC-1. Both show an alternate start site at Met73, while one has an additional 65 aa substitution for the C-terminal 264 amino acids (10, 11). Cells known to express GPC-1 include neurons, smooth and skeletal muscle cells, keratinocytes, osteoblasts, Schwann cells, immature dendritic cells, and tumor, plus tumor-associated vascular endothelial cells (8, 9, 12-15). The function of GPC-1 is complex and varied. As a proteoglycan, it appears to make use of its HS adduct to impact select growth factor activity (16). This is accomplished by having juxtramembrane HS attachment sites, and a flexible, GPI-linkage (17). Data suggests GPC-1 and sulfation enzymes may collaborate to regulate FGF signaling. HS modules that are rich in 2-O- and 6-O- sulfate upregulate FGF-2 activation of FGFR1c (18). Similarly, FGF-1 requires both 2-O- and 6-O-sulfation to bind to FGFR2c and 3c. By contrast, FGF-1 requires no sulfation to bind to FGFR2b, and FGF-8b needs only 6-O-sulfation to activate FGFR3c. Thus, many FGF receptor isoform specific effects may be attributed to an interaction between Glypican family members and the cell sulfation system (19).

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