

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Glycan 1 in direct ELISAs.
Source	Monoclonal Mouse IgG ₁ Clone # 1019765
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human Glycan 1 Asp24-Ser530 Accession # P35052
Conjugate	Alexa Fluor 647 Excitation Wavelength: 650 nm Emission Wavelength: 668 nm
Formulation	Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide

*Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

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.

Immunocytochemistry	Optimal dilution of this antibody should be experimentally determined.
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PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied

BACKGROUND

The Glycans (*glycated 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 Glycans. 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 Glycans are known, with one subfamily containing Glycans 1, 2, 4 and 6, and another subfamily containing Glycans 3 and 5 (3, 5). Human Glycan 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 glycation. 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 juxtamembrane 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 Glycan family members and the cell sulfation system (19).

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