

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Glypican 4 in direct ELISAs.
Source	Monoclonal Mouse IgG ₁ Clone # 961609
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Chinese hamster ovary cell line CHO-derived recombinant human Glypican 4 Met1-Ser529 Accession # O75487
Conjugate	Alexa Fluor 488 Excitation Wavelength: 488 nm Emission Wavelength: 515-545 nm
Formulation	Supplied 0.2 mg/mL in a saline solution containing BSA and 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.

	Recommended Concentration	Sample
Flow Cytometry	0.25-1 µg/10 ⁶ cells	TF-1 Human Erythroleukemic Cell Line, and BG01V Human Embryonic Stem Cell

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. <ul style="list-style-type: none"> 12 months from date of receipt, 2 to 8 °C as supplied.

BACKGROUND

Glypican 4, also known as K-Glypican, is an approximately 220 kDa GPI-anchored heparan sulfate proteoglycan with a 60 kDa protein core (1, 2). It is expressed in brain, kidney, adrenal gland, and fat tissue (1, 3) and binds to basic FGF (2). Mature human Glypican 4 shares 97% and 96% amino acid (aa) sequence identity with mouse and rat Glypican 4, respectively. An alternative splice isoform lacks the N-terminal 70 aa including the signal peptide. In the developing brain, Glypican 4 is found in lateral ventricles surrounding the telencephalon, the dentate gyrus, proliferating neuroepithelial cells, and neural precursors (1, 2). It inhibits the dopaminergic differentiation of neurons (4). A 30 kDa cleaved form of Glypican 4 binds in cis to PTP sigma and contributes to excitatory synapse development and function (5). Glypican 4 is differentially expressed between adipose tissue depots (3). A soluble form can be released by adipocytes and circulates at elevated levels in obese patients with insulin resistance (3, 6). This form binds and enhances signaling through the Insulin R, and it also supports adipocyte differentiation (3). In zebrafish, Glypican 4 is required for cartilage formation and cardiomyocyte differentiation (7, 8).

References:

1. Watanabe, K. *et al.* (1995) *J. Cell Biol.* **130**:1207.
2. Hagihara, K. *et al.* (2000) *Dev. Dyn.* **219**:353.
3. Ussar, S. *et al.* (2012) *Diabetes* **61**:2289.
4. Fico, A. *et al.* (2014) *J. Neurosci.* **34**:8318.
5. Ko, J.S. *et al.* (2015) *Proc. Natl. Acad. Sci. USA* **112**:1874.
6. Zhu, H.J. *et al.* (2014) *J. Endocrinol. Metab.* **99**:E2697.
7. Sisson, B.E. *et al.* (2015) *Mech. Dev.* **138**:279.
8. Strate, I. *et al.* (2015) *Development* **142**:1767.

PRODUCT SPECIFIC NOTICES

This product is provided under an agreement between Life Technologies Corporation and R&D Systems, Inc, and the manufacture, use, sale or import of this product is subject to one or more US patents and corresponding non-US equivalents, owned by Life Technologies Corporation and its affiliates. The purchase of this product conveys to the buyer the non-transferable right to use the purchased amount of the product and components of the product only in research conducted by the buyer (whether the buyer is an academic or for-profit entity). The sale of this product is expressly conditioned on the buyer not using the product or its components (1) in manufacturing; (2) to provide a service, information, or data to an unaffiliated third party for payment; (3) for therapeutic, diagnostic or prophylactic purposes; (4) to resell, sell, or otherwise transfer this product or its components to any third party, or for any other commercial purpose. Life Technologies Corporation will not assert a claim against the buyer of the infringement of the above patents based on the manufacture, use or sale of a commercial product developed in research by the buyer in which this product or its components was employed, provided that neither this product nor any of its components was used in the manufacture of such product. For information on purchasing a license to this product for purposes other than research, contact Life Technologies Corporation, Cell Analysis Business Unit, Business Development, 29851 Willow Creek Road, Eugene, OR 97402, Tel: (541) 465-8300. Fax: (541) 335-0354.