

DESCRIPTION

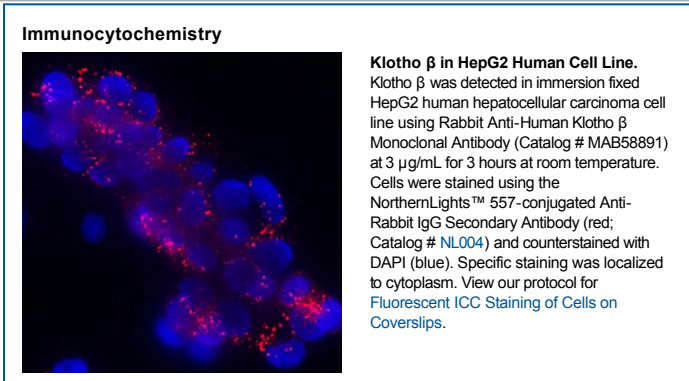
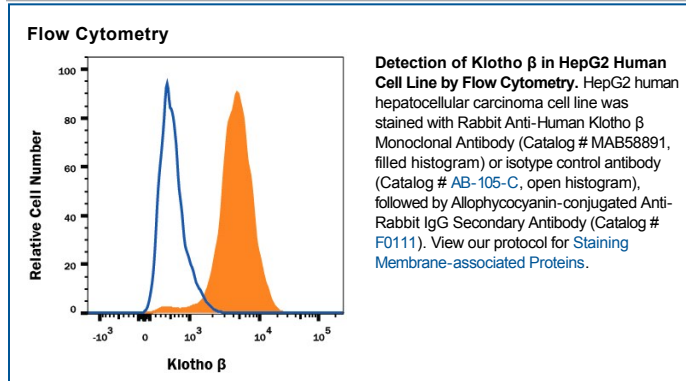
Species Reactivity	Human
Specificity	Detects human Klotho β in direct ELISAs.
Source	Recombinant Monoclonal Rabbit IgG Clone # 1025C
Purification	Protein A or G purified from cell culture supernatant
Immunogen	Mouse myeloma cell line, NS0-derived recombinant human Klotho β with a C-terminal 10 His tag. Phe53-Leu997 Accession # Q86Z14
Formulation	Lyophilized from a 0.2 μ m filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 μ m 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
Flow Cytometry	0.25 μ g/10 ⁶ cells	See Below
Immunocytochemistry	3-25 μ g/mL	See Below

DATA



PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 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

Klotho β , a divergent structural member of the glycosidase I superfamily, is expressed primarily in the liver and pancreas, with lower expression in adipose tissue (1, 2). Like Klotho, Klotho β facilitates binding between FGF19 subfamily members and their receptors via formation of a ternary complex (3). The Klotho β mediated interaction of human FGF19 (mouse FGF15) with FGF Receptor 4 in the liver negatively regulates bile acid synthesis by controlling the secretion of two key bile acid synthase genes, cholesterol 7- α hydroxylase (Cyp7a1) and sterol 12- α hydroxylase (Cyp8b1) (2-5). Klotho β is also a cofactor for the interaction of FGF21 with FGF Receptor 1c in adipocytes, which allows FGF21 to stimulate GLUT1 expression, upregulating adipocyte insulin-dependent glucose uptake (2-4, 6). The 1043 amino acid (aa) type I transmembrane protein is composed of a 51 aa signal sequence, a 943 aa extracellular domain (ECD) containing two glycosidase-like regions, a 21 aa transmembrane domain, and 28 aa intracellular tail. Since Klotho-related proteins lack critical active site Glu residues present in β -glycosidases, it was initially unclear whether they were functional enzymes (1, 7). However, glucuronidase activity has since been demonstrated for Klotho, indicating that physiologically relevant enzymatic activity for Klotho β is also possible (8). The extracellular domain shares 79%, 87%, 87% and 67% identity with mouse, equine, canine and rat Klotho β , respectively. The low identity with rat reflects aa discordance within rodent ECD.

References:

1. Mian, I. S. (1998) *Blood Cells Mol. Dis.* **24**:83.
2. Kurosu, H. and M. Kuro-o (2009) *Mol. Cell. Endocrinol.* **299**:72.
3. Ito, S. *et al.* (2005) *J. Clin. Invest.* **115**:2202.
4. Kurosu, H. *et al.* (2007) *J. Biol. Chem.* **282**:26687.
5. Lin, B. C. *et al.* (2007) *J. Biol. Chem.* **282**:27277.
6. Ogawa, Y. *et al.* (2007) *Proc. Natl. Acad. Sci USA* **104**:7432.
7. Chang, Q. *et al.* (2005) *Science* **310**:490.
8. Goetz, R. *et al.* (2007) *Mol. Cell. Biol.* **27**:3417.