



GP2 (S-16): sc-160392

BACKGROUND

GP2 (glycoprotein 2), also known as ZAP75, is a 537 amino acid secreted protein that is expressed in pancreatic secretory (zymogen) granules, and is cleaved then released into the pancreatic duct along with exocrine secretions. GP2 interacts with syncollin and to type 1 fimbria of bacteria, a bacterial adhesin that is commonly expressed by members of the Enterobacteriaceae family. Containing an EGF-like domain and a ZP domain, GP2 is also expressed on the apical plasma membrane of specialized microfold (M) cells among enterocytes and serves as a transcytotic receptor for mucosal antigens. M cells are considered a promising target for oral vaccination against various infectious diseases, and the GP2-dependent transcytotic pathway may provide a new target for the development of M cell-targeted mucosal vaccines. GP2 exists as four alternatively spliced isoforms that are designated isoform 1, isoform β , isoform α and isoform 2.

REFERENCES

1. Fukuoka, S., et al. 1991. A single gene encodes membrane-bound and free forms of GP-2, the major glycoprotein in pancreatic secretory (zymogen) granule membranes. *Proc. Natl. Acad. Sci. USA* 88: 2898-2902.
2. Fukuoka, S., et al. 1992. GP-2/THP gene family encodes self-binding glycosylphosphatidylinositol-anchored proteins in apical secretory compartments of pancreas and kidney. *Proc. Natl. Acad. Sci. USA* 89: 1189-1193.
3. Wong, S.M. and Lowe, A.W. 1996. Sequence of the cDNA encoding human GP-2, the major membrane protein in the secretory granule of the exocrine pancreas. *Gene* 171: 311-312.
4. Fukuoka, S.I., et al. 1997. Assignment of pancreatic zymogen granule membrane protein GP2 (GP2) to human chromosome band 9q21.11 to q21.2 by *in situ* hybridization. *Cytogenet. Cell Genet.* 79: 231-232.
5. Chen, H. and Schifferli, D.M. 2000. Mucosal and systemic immune responses to chimeric fimbriae expressed by *Salmonella enterica* serovar typhimurium vaccine strains. *Infect. Immun.* 68: 3129-3139.
6. Yang, H., et al. 2004. Identification and characterization of D8C, a novel domain present in liver-specific LZP, uromodulin and glycoprotein 2, mutated in familial juvenile hyperuricaemic nephropathy. *FEBS Lett.* 578: 236-238.
7. Man, A.L., et al. 2004. Improving M cell mediated transport across mucosal barriers: do certain bacteria hold the keys? *Immunology* 113: 15-22.
8. Yu, S. and Lowe, A.W. 2009. The pancreatic zymogen granule membrane protein, GP2, binds *Escherichia coli* Type 1 fimbriae. *BMC Gastroenterol.* 9: 58.
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STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.

CHROMOSOMAL LOCATION

Genetic locus: GP2 (human) mapping to 16p12.3.

SOURCE

GP2 (S-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of GP2 of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-160392 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

GP2 (S-16) is recommended for detection of GP2 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with other GP family members .

Suitable for use as control antibody for GP2 siRNA (h): sc-93477, GP2 shRNA Plasmid (h): sc-93477-SH and GP2 shRNA (h) Lentiviral Particles: sc-93477-V.

Molecular Weight of GP2: 59 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RESEARCH USE

For research use only, not for use in diagnostic procedures.