

# GP2 (Q-13): sc-160391

## 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  $\beta$ , isoform  $\alpha$  and isoform 2.

## REFERENCES

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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 LZF, 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.
9. Hase, K., et al. 2009. Uptake through glycoprotein 2 of FimH<sup>+</sup> bacteria by M cells initiates mucosal immune response. *Nature* 462: 226-230.

## STORAGE

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

## RESEARCH USE

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

## CHROMOSOMAL LOCATION

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

## SOURCE

GP2 (Q-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of GP2 of human origin.

## PRODUCT

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

Blocking peptide available for competition studies, sc-160391 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

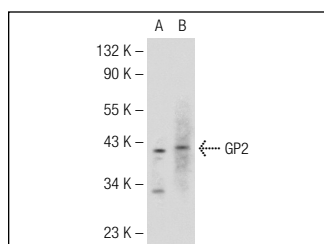
GP2 (Q-13) is recommended for detection of GP2 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) 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.

Positive Controls: mouse liver extract: sc-2256 or KNRK whole cell lysate: sc-2214.

## DATA



GP2 (Q-13): sc-160391. Western blot analysis of GP2 expression in KNRK whole cell lysate (A) and mouse liver tissue extract (B).

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.