

SP (4G7C3): sc-517213

BACKGROUND

Trefoil peptides are protease resistant molecules secreted throughout the gut that play a role in mucosal healing. These peptides contain three intrachain disulfide bonds, forming the trefoil motif, or P-domain. pS2, also designated Md2, BCE1, TFF1 and pNR-2, is a trefoil protein that is highly expressed in normal gastric mucosa. pS2 has also been detected in a number of carcinomas including cancers of the breast, pancreas and stomach. pS2 is not present in normal breast tissue but is inducible by estrogen in MCF7 cells. pS2 is known to form dimers and this dimerization is thought to play a role in its protective and healing properties. The gene encoding pS2 maps to human chromosome 21q22.3.

REFERENCES

- Pichon, M.F., et al. 1993. Clinical significance of the estrogen regulated pS2 protein in mammary tumors. *Crit. Rev. Oncol. Hematol.* 15: 13-21.
- Gott, P., et al. 1996. Human trefoil peptides: genomic structure in 21q22.3 and coordinated expression. *Eur. J. Hum. Genet.* 4: 308-315.
- Thim, L. 1997. Trefoil peptides: from structure to function. *Cell. Mol. Life Sci.* 53: 888-903.
- May, F.E., et al. 1997. Trefoil proteins: their role in normal and malignant cells. *J. Pathol.* 183: 4-7.
- Poulsom, R., et al. 1997. Intestinal trefoil factor (TFF 3) and pS2 (TFF 1), but not spasmodic polypeptide (TFF 2) mRNAs are co-expressed in normal, hyperplastic, and neoplastic human breast epithelium. *J. Pathol.* 183: 30-38.
- Murphy, M.S. 1998. Growth factors and the gastrointestinal tract. *Nutrition* 14: 771-774.
- Ribieras, S., et al. 1998. The pS2/TFF1 trefoil factor, from basic research to clinical applications. *Biochim. Biophys. Acta* 19: F61-F77.
- Marchbank, T., et al. 1998. Dimerization of human pS2 (TFF1) plays a key role in its protective/healing effects. *J. Pathol.* 185: 153-158.
- Giamarchi, C., et al. 2002. Two antiestrogens affect differently chromatin remodeling of trefoil factor 1 (pS2) gene and the fate of estrogen receptor in MCF7 cells. *Biochim. Biophys. Acta* 1578: 12-20.

CHROMOSOMAL LOCATION

Genetic locus: TFF2 (human) mapping to 21q22.3.

SOURCE

SP (4G7C3) is a mouse monoclonal antibody raised against a recombinant protein corresponding to amino acids 20-125 of SP of human origin.

PRODUCT

Each vial contains 100 µg IgG₁ in 1.0 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

RESEARCH USE

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

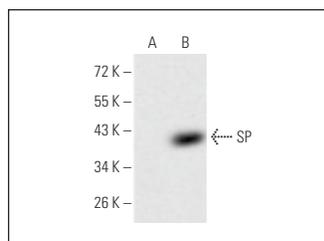
APPLICATIONS

SP (4G7C3) is recommended for detection of SP of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500), flow cytometry (1 µg per 1 x 10⁶ cells) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

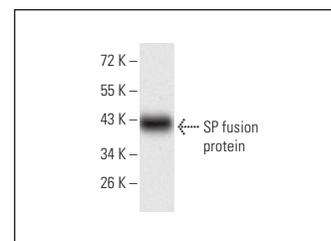
Suitable for use as control antibody for SP siRNA (h): sc-91462, SP shRNA Plasmid (h): sc-91462-SH and SP shRNA (h) Lentiviral Particles: sc-91462-V.

Positive Controls: human SP (20-125)-hlgGfC transfected HEK293 whole cell lysate.

DATA



SP (4G7C3): sc-517213. Western blot analysis of SP expression in non-transfected (A) and human SP (20-125)-hlgGfC transfected (B) HEK293 whole cell lysates.



SP (4G7C3): sc-517213. Western blot analysis of human recombinant SP (20-125) fusion protein.

SELECT PRODUCT CITATIONS

- Schirinzi, T., et al. 2022. Substance P and Prokineticin-2 are overexpressed in olfactory neurons and play differential roles in persons with persistent post-COVID-19 olfactory dysfunction. *Brain Behav. Immun.* 108: 302-308.
- Rosso, P., et al. 2023. Involvement of substance P (SP) and its related NK1 receptor in primary Sjögren's syndrome (pSS) pathogenesis. *Cells* 12: 1347.

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 for detailed protocols and support products.