SANTA CRUZ BIOTECHNOLOGY, INC.

SC (SPM217): sc-56595

BACKGROUND

Polymeric IgA and IgM is produced and secreted by B cells in the lamina propria, which is beneath the mucosal lining of polarized epithelial cells. Polymeric immunoglobulin receptors, also designated pIgRs, are expressed on the basolateral surface of glandular epithelia and mediate transcellular transport of secretory immunoglobulin polymers across the epithelium. pIgR associates with secreted dimeric IgA and IgM molecules. During transcellular transport of these Ig polymers, pIgR undergoes proteolytic cleavage to generate a fragment called secretory component (SC), polymeric immunoglobulin receptor or poly-IG receptor. When immunoglobulin polymers associate with SC, they become resistant to enzymatic degradation during the transcytosis process. SC and the pIgR are crucial for proper mucosal immunity where they represent a molecular chaperone for polymeric Igs to remain intact and enter into body fluids. The human SC (pIgR) gene maps to chromosome 1q32.1 and encodes a 764 amino acid protein. The receptor contains five units with homology to the variable (V) units of immunoglobulins and a transmembrane region that shares homology to certain immunoglobulin variable regions.

REFERENCES

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2. Nagura, H., et al. 1981. Secretory component in immmunoglobulin deficiency: and immunoelectron microscopic study of intestinal epithelium. Scand. J. Immunol. 12: 359-363.
3. Hood, L., et al. 1985. T cell antigen receptors and the immunoglobulin supergene family. Cell 40: 225-229.
4. Aroeti, B., et al. 1992. Polymeric immunoglobulin receptor. Int. Rev. Cytol. 137: 157-168.
5. Krajci, P., et al. 1992. Molecular cloning and exon-intron mapping of the gene encoding human transmembrane secretory component (the poly-Ig receptor). Eur. J. Immunol. 22: 2309-2315.
6. De Groot, N., et al. 2000. Increased immunoglobulin A levels in milk by overexpressing the murine polymeric immunoglobulin receptor gene in the mammary gland epithelial cells of transgenic mice. Immunology 101: 218-224.
7. van der Feltz, M.J., et al. 2001. Lymphocyte homing and Ig secretion in the murine mammary gland. Scand. J. Immunol. 54: 292-300.
8. Johansen, F.E., et al. 2001. The J chain is essential for polymeric Ig receptor-mediated epithelial transport of IgA. J. Immunol. 167: 5185-5192.
9. de Araújo, A.N. and Giugliano, L.G. 2002. Lactoferrin and free secretory component of human milk inhibit the adhesion of enteropathogenic *Escherichia coli* to HeLa cells. BMC Microbiol. 1: 25.

CHROMOSOMAL LOCATION

Genetic locus: PIGR (human) mapping to 1q32.1.

SOURCE

SC (SPM217) is a mouse monoclonal antibody raised against full length native SC of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

SC (SPM217) is recommended for detection of free SC and SC bound in secretory IgA 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) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for SC siRNA (h): sc-42964, SC shRNA Plasmid (h): sc-42964-SH and SC shRNA (h) Lentiviral Particles: sc-42964-V.

Molecular Weight of SC: 80 kDa.

Positive Controls: PC-3 cell lysate: sc-2220, IMR-32 cell lysate: sc-2409 or DU 145 cell lysate: sc-2268.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

SELECT PRODUCT CITATIONS

1. Muinelo-Romay, L., et al. 2011. Identification of α(1,6)fucosylated proteins differentially expressed in human colorectal cancer. BMC Cancer 11: 508.
2. Gianluigi, C., et al. 2020. Proteomic characterization of the mucosal pellicle formed *in vitro* on a cellular model of oral epithelium. J. Proteomics 222: 103797.

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.

PROTOCOLS

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