SANTA CRUZ BIOTECHNOLOGY, INC.

A33 (FL-319): sc-50522

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The A33 antigen is a transmembrane protein expressed almost exclusively in intestinal epithelium and in 95% of human colon cancers. Specifically, expression of the A33 protein occurs on the basolateral surfaces of intestinal epithelial cells of all lineages. The A33 antigen comprises an extracellular domain with two immunoglobulin-like domains, a single-span transmembrane domain and a highly acidic cytoplasmic domain. Expression of A33 appears to be regulated by the intestine-specific homeobox transcription factor CDX1 and the gut-enriched Krüppel-like factor (GKLF). GKLF binds to the promoter region of the A33 gene in colon cancer cells, and mutations in the GKLF binding sequence lead to reduced expression of the A33 antigen. The therapeutic potential of administering the humanized monoclonal antibody A33 to colon cancer patients has proved encouraging.

REFERENCES

1. Ritter, G., et al. 1997. Characterization of posttranslational modifications of human A33 antigen, a novel palmitoylated surface glycoprotein of human gastrointestinal epithelium. Biochem. Biophys. Res. Commun. 236: 682-686
2. Heath, J.K., et al. 1997. The human A33 antigen is a transmembrane glycoprotein and a novel member of the immunoglobulin superfamily. Proc. Natl. Acad. Sci. USA 94: 469-474.
3. Abud, H.E., et al. 2000. The murine A33 antigen is expressed at two distinct sites during development, the ICM of the blastocyst and the intestinal epithelium. Mech. Dev. 98: 111-114.
4. Johnstone, C.N., et al. Characterization of mouse A33 antigen, a definitive marker for basolateral surfaces of intestinal epithelial cells. 2000. Am. J. Physiol. Gastrointest. Liver Physiol. 279: G500-G510.
5. Sakamoto, J., et al. 2000. Organ-specific expression of the intestinal epithelium-related antigen A33, a cell surface target for antibody-based imaging and treatment in gastrointestinal cancer. Cancer Chemother. Pharmacol. 46: S27-S32.

CHROMOSOMAL LOCATION

Genetic locus: GPA33 (human) mapping to 1q24.1.

SOURCE

A33 (FL-319) is a rabbit polyclonal antibody raised against amino acids 1-319 representing full length A33 of human origin.

PRODUCT

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

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.

APPLICATIONS

A33 (FL-319) is recommended for detection of glycoprotein A33 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100500 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

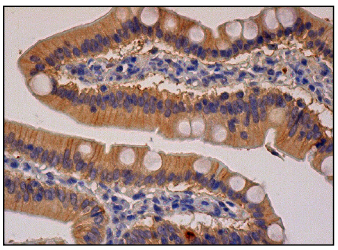
Suitable for use as control antibody for A33 siRNA (h): sc-44821, A33 shRNA Plasmid (h): sc-44821-SH and A33 shRNA (h) Lentiviral Particles: sc-44821-V.

Molecular Weight of A33: 43 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

DATA



A33 (FL-319): sc-50522. Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing cytoplasmic and membrane staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Hwang, W.L., et al. 2011. SNAIL regulates interleukin-8 expression, stem cell-like activity, and tumorigenicity of human colorectal carcinoma cells. Gastroenterology 141: 279-91, 291.e1-5.
2. Carreras-Sangrà, N., et al. 2012. Production and characterization of a colon cancer-specific immunotoxin based on the fungal ribotoxin α-sarcin. Protein. Eng. Des. Sel. 25: 425-435.
3. Tomé-Amat, J., et al. 2012. Production and characterization of scFvA33T1, an immunoRNase targeting colon cancer cells. FEBS J. 279: 3022-3032.