

A33 (N-15): sc-33012

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 43 kDa 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 Kruppel-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

- 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
- 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.
- Johnstone, C.N., et al. 2000. Characterization of mouse A33 antigen, a definitive marker for basolateral surfaces of intestinal epithelial cells. *Am. J. Physiol. Gastrointest. Liver Physiol.* 279: G500-G510.
- 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.
- 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.
- Johnstone, C.N., et al. 2002. Analysis of the regulation of the A33 antigen gene reveals intestine-specific mechanisms of gene expression. *J. Biol. Chem.* 277: 34531-34539.
- Mao, Z., et al. 2003. Transcriptional regulation of A33 antigen expression by gut-enriched Kruppel-like factor. *Oncogene* 22: 4434-4443.

CHROMOSOMAL LOCATION

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

SOURCE

A33 (N-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an N-terminal extracellular domain of A33 of human origin.

RESEARCH USE

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

PRODUCT

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

Blocking peptide available for competition studies, sc-33012 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

A33 (N-15) 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 100-500 µg 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).

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.

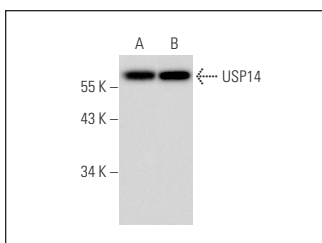
Molecular Weight of A33: 43 kDa.

Positive Controls: COLO 205 whole cell lysate: sc-364177, Caco-2 cell lysate: sc-2262 or WiDR cell lysate: sc-24779.

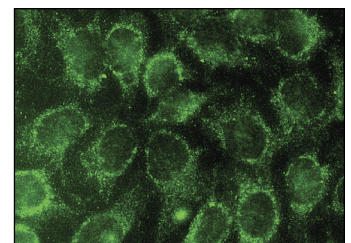
RECOMMENDED SECONDARY REAGENTS

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



USP14 (E-17): sc-69075. Western blot analysis of USP14 expression in U-698-M (A) and Jurkat (B) whole cell lysates.



A33 (N-15): sc-33012. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

STORAGE

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