

A33 (E-8): sc-398702



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 leads 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.
- 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. 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.

CHROMOSOMAL LOCATION

Genetic locus: Gpa33 (mouse) mapping to 1 H2.3.

SOURCE

A33 (E-8) is a mouse monoclonal antibody raised against amino acids 1-319 representing full length A33 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

A33 (E-8) is available conjugated to agarose (sc-398702 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-398702 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398702 PE), fluorescein (sc-398702 FITC), Alexa Fluor® 488 (sc-398702 AF488), Alexa Fluor® 546 (sc-398702 AF546), Alexa Fluor® 594 (sc-398702 AF594) or Alexa Fluor® 647 (sc-398702 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398702 AF680) or Alexa Fluor® 790 (sc-398702 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

A33 (E-8) is recommended for detection of A33 of mouse and rat origin by Western Blotting (starting dilution 1:100, 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for A33 siRNA (m): sc-44822, A33 shRNA Plasmid (m): sc-44822-SH and A33 shRNA (m) Lentiviral Particles: sc-44822-V.

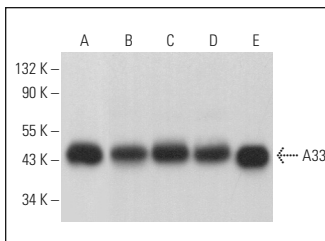
Molecular Weight of A33: 43 kDa.

Positive Controls: mouse small intestine extract: sc-364252, rat ileum tissue extract or rat small intestine extract: sc-364811.

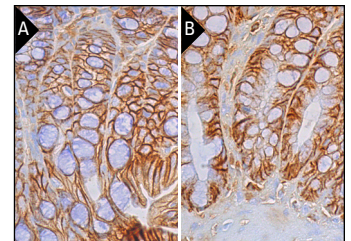
RECOMMENDED SUPPORT REAGENTS

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.

DATA



A33 (E-8): sc-398702. Western blot analysis of A33 expression in mouse small intestine (A), rat ileum (B), rat colon (C), rat small intestine (D) and mouse ileum (E) tissue extracts.



A33 (E-8): sc-398702. Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse colon tissue showing membrane staining of glandular cells and cytoplasmic staining of endothelial cells (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded rat colon tissue showing membrane staining of glandular cells (B).

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.

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