

# GRAIL (M-17): sc-101967

## BACKGROUND

GRAIL, also known as RING finger protein 128, is a 428 amino acid type I transmembrane protein localized to the intracytoplasmic membrane. GRAIL contains a protease-associated (PA) domain and a RING finger domain, which binds to E2 ubiquitin-conjugating enzymes. When under anergic conditions, GRAIL functions as an E3 ubiquitin-protein ligase that inhibits IL-2, IL-4 and various other cytokines. GRAIL is also thought to be involved in the patterning of the dorsal ectoderm during development. Expressed in an asymmetric perinuclear punctate manner, GRAIL colocalizes with Rab 7, GRP 78 and Syntaxin 5. GRAIL is expressed as two isoforms produced by alternative splicing.

## REFERENCES

1. Online Mendelian Inheritance in Man, OMIM™. 2003. Johns Hopkins University, Baltimore, MD. MIM Number: 300439. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
2. Anandasabapathy, N., et al. 2003. GRAIL: an E3 ubiquitin ligase that inhibits cytokine gene transcription is expressed in anergic CD4<sup>+</sup> T cells. *Immunity* 18: 535-547.
3. Soares, L., et al. 2004. Two isoforms of otubain 1 regulate T cell anergy via GRAIL. *Nat. Immunol.* 5: 45-54.
4. Su, L., et al. 2006. A novel E3 ubiquitin ligase substrate screen identifies Rho guanine dissociation inhibitor as a substrate of gene related to anergy in lymphocytes. *J. Immunol.* 177: 7559-7566.
5. MacKenzie, D.A., et al. 2007. GRAIL is up-regulated in CD4<sup>+</sup> CD25<sup>+</sup> T regulatory cells and is sufficient for conversion of T cells to a regulatory phenotype. *J. Biol. Chem.* 282: 9696-9702.
6. Kostianovsky, A.M., et al. 2007. Up-regulation of gene related to anergy in lymphocytes is associated with Notch-mediated human T cell suppression. *J. Immunol.* 178: 6158-6163.
7. Egawa, S., et al. 2008. Upregulation of GRAIL is associated with remission of ulcerative colitis. *Am. J. Physiol. Gastrointest. Liver Physiol.* 295: G163-G169.

## CHROMOSOMAL LOCATION

Genetic locus: RNF128 (human) mapping to Xq22.3.

## SOURCE

GRAIL (M-17) is a purified rabbit polyclonal antibody raised against GRAIL of human origin.

## PRODUCT

Each vial contains 100 µg IgG in 1.0 ml PBS with < 0.1% sodium azide, 0.1% gelatin and < 0.02% sucrose.

## STORAGE

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

## APPLICATIONS

GRAIL (M-17) is recommended for detection of GRAIL 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for GRAIL siRNA (h): sc-90884, GRAIL shRNA Plasmid (h): sc-90884-SH and GRAIL shRNA (h) Lentiviral Particles: sc-90884-V.

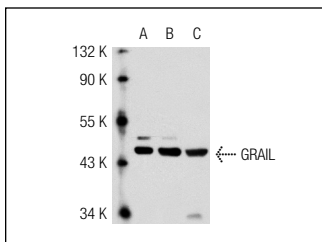
Molecular Weight of GRAIL: 46 kDa.

Positive Controls: GRAIL (h): 293T lysate: sc-116724, HeLa whole cell lysate: sc-2200 or Hep G2 cell lysate: sc-2227.

## 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).

## DATA



GRAIL (M-17): sc-101967. Western blot analysis of GRAIL expression in non-transfected 293T: sc-117752 (A), human GRAIL transfected 293T: sc-116724 (B) and Hep G2 (C) whole cell lysates.

## SELECT PRODUCT CITATIONS

1. Hendrickson, D.G., et al. 2009. Concordant regulation of translation and mRNA abundance for hundreds of targets of a human microRNA. *PLoS Biol.* 7: e1000238.

## RESEARCH USE

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

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Try **GRAIL (G-7): sc-515110**, our highly recommended monoclonal alternative to GRAIL (M-17).