

ROD1 (F-30): sc-100845



The Power to Question

BACKGROUND

Differentiation is a fundamental attribute of multicellular organisms that is required for their body formation. Commitment to differentiation is regulated by a variety of signals and cellular conditions, including availability of differentiation factors, cell-cell contacts and physical and chemical stresses. In the fission yeast *Schizosaccharomyces pombe*, the *nrd1* gene encoding an RNA binding protein negatively regulates the onset of differentiation. The mammalian homologue of *nrd1* is ROD1, which encodes a protein with four repeats of typical RNA binding domains. When expressed in fission yeast, the ROD1 protein functions similar to *nrd1*. ROD1 is highly expressed in adult and embryo hematopoietic cells or organs. Overexpression of ROD1 effectively blocks the differentiation of human leukemia cells without affecting their proliferative ability, suggesting that ROD1 plays a critical role in controlling differentiation in mammalian cells.

REFERENCES

1. Fukui, Y., et al. 1986. Mating pheromone-like diffusible factor released by *Schizosaccharomyces pombe*. EMBO J. 5: 1991-1993.
2. Leupold, U. 1987. Sex appeal in fission yeast. Curr. Genet. 12: 543-545.
3. Horvitz, H.R. and Herskowitz, I. 1992. Mechanisms of asymmetric cell division: two Bs or not Bs, that is the question. Cell 68: 237-255.

CHROMOSOMAL LOCATION

Genetic locus: PTBP3 (human) mapping to 9q32; Ptpb3 (mouse) mapping to 4 B3.

SOURCE

ROD1 (F-30) is a mouse monoclonal antibody raised against recombinant ROD1 of human origin.

PRODUCT

Each vial contains 100 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

ROD1 (F-30) is recommended for detection of ROD1 of mouse, rat and 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), 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 ROD1 siRNA (h): sc-106897, ROD1 siRNA (m): sc-153058, ROD1 shRNA Plasmid (h): sc-106897-SH, ROD1 shRNA Plasmid (m): sc-153058-SH, ROD1 shRNA (h) Lentiviral Particles: sc-106897-V and ROD1 shRNA (m) Lentiviral Particles: sc-153058-V.

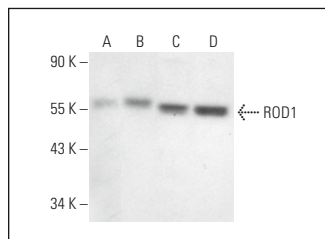
Molecular Weight of ROD1: 57 kDa.

Positive Controls: ROD1 (m2): 293T Lysate: sc-125944, PC-3 cell lysate: sc-2220 or HeLa whole cell lysate: sc-2200.

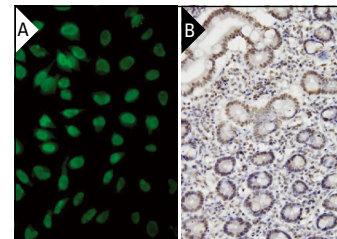
STORAGE

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

DATA



ROD1 (F-30): sc-100845. Western blot analysis of ROD1 expression in non-transfected 293T: sc-117752 (A), mouse ROD1 transfected 293T: sc-125944 (B), HeLa (C) and PC-3 (D) whole cell lysates.



ROD1 (F-30): sc-100845. Immunofluorescence staining of paraformaldehyde-fixed HeLa cells showing nuclear localization (A). Immunoperoxidase staining of formalin-fixed, paraffin-embedded human small intestine tissue showing nuclear localization (B).

SELECT PRODUCT CITATIONS

1. Fasanaro, P., et al. 2012. ROD1 is a seedless target gene of hypoxia-induced miR-210. PLoS ONE 7: e44651.
2. Brazão, T.F., et al. 2012. A new function of ROD1 in nonsense-mediated mRNA decay. FEBS Lett. 586: 1101-1110.
3. Liu, W., et al. 2015. Hepatitis B virus core protein inhibits Fas-mediated apoptosis of hepatoma cells via regulation of mFas/Fas-L and sFas expression. FASEB J. 29: 1113-1123.
4. Greening, D.W., et al. 2016. Modulating the endometrial epithelial proteome and secretome in preparation for pregnancy: the role of ovarian steroid and pregnancy hormones. J. Proteomics 144: 99-112.
5. Liang, X., et al. 2017. Inhibition of polypyrimidine tract-binding protein 3 induces apoptosis and cell cycle arrest, and enhances the cytotoxicity of 5-fluorouracil in gastric cancer cells. Br. J. Cancer 116: 903-911.
6. Hou, P., et al. 2018. PTBP3-mediated regulation of ZEB1 mRNA stability promotes epithelial-mesenchymal transition in breast cancer. Cancer Res. 78: 387-398.
7. Hou, P., et al. 2019. PTBP3 contributes to colorectal cancer growth and metastasis via translational activation of HIF-1α. J. Exp. Clin. Cancer Res. 38: 301.
8. Zhang, J., et al. 2020. MicroRNA-210 improves perfusion recovery following hindlimb ischemia via suppressing reactive oxygen species. Exp. Ther. Med. 20: 236.
9. Dong, C., et al. 2022. PTBP3 mediates TGF-β-induced EMT and metastasis of lung adenocarcinoma. Cell Cycle 21: 1406-1421.
10. Alber, S., et al. 2023. PTBP1 regulates injury responses and sensory pathways in adult peripheral neurons. Sci. Adv. 9: eadi0286.

RESEARCH USE

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