SANTA CRUZ BIOTECHNOLOGY, INC.

ZAC1 (C-7): sc-166944

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Pleiomorphic adenoma gene (PLAG1) encodes a zinc finger protein and is the target gene for pleiomorphic adenomas of the salivary gland. The PLAG family of zinc finger proteins include PLAG1, ZAC1 and PLAG-like 2 (PLAGL2). ZAC1, also known as PLAGL1, concomitantly controls apoptosis and cell cycle arrest through separate pathways. ZAC1 also acts as a positive or negative transcriptional cofactor for nuclear receptors, depending on the expression of functional p53. ZAC1 is broadly expressed in embryo, with highest expression in the liver primordium, the umbilical region and the neural tube. PLAGL1 is also expressed in normal mammary gland. PLAGL2 functions as a positive regulator of transcription and localizes to the nucleus. PLAGL2 and ZAC1 bind to the DNA consensus sequence ACGGGGGCCCCTTTA. PLAGL2 is ubiquitously expressed with particular abundance in spleen, lung and testis where it may be involved in cell cycle arrest and apoptosis of tumor cells.

REFERENCES

1. Kas, K., et al. 1997. Promoter swapping between the genes for a novel zinc finger protein and β-catenin in pleiomorphic adenomas with t(3;8)(p21;q12) translocations. Nat. Genet. 15: 170-174.
2. Kas, K., et al. 1998. Transcriptional activation capacity of the novel PLAG family of zinc finger proteins. J. Biol. Chem. 273: 23026-23032.
3. Bilanges, B., et al. 1999. Loss of expression of the candidate tumor suppressor gene ZAC in breast cancer cell lines and primary tumors. Oncogene 18: 3979-3988.

CHROMOSOMAL LOCATION

Genetic locus: PLAGL1 (human) mapping to 6q24.2; Plagl1 (mouse) mapping to 10 A2.

SOURCE

ZAC1 (C-7) is a mouse monoclonal antibody raised against amino acids 211-510 of ZAC1 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-166944 X, 200 µg/0.1 ml.

ZAC1 (C-7) is available conjugated to agarose (sc-166944 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-166944 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166944 PE), fluorescein (sc-166944 FITC), Alexa Fluor® 488 (sc-166944 AF488), Alexa Fluor® 546 (sc-166944 AF546), Alexa Fluor® 594 (sc-166944 AF594) or Alexa Fluor® 647 (sc-166944 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166944 AF680) or Alexa Fluor® 790 (sc-166944 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

ZAC1 (C-7) is recommended for detection of ZAC1 of mouse, rat and human 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 ZAC1 siRNA (h): sc-38183, ZAC1 siRNA (m): sc-38184, ZAC1 shRNA Plasmid (h): sc-38183-SH, ZAC1 shRNA Plasmid (m): sc-38184-SH, ZAC1 shRNA (h) Lentiviral Particles: sc-38183-V and ZAC1 shRNA (m) Lentiviral Particles: sc-38184-V.

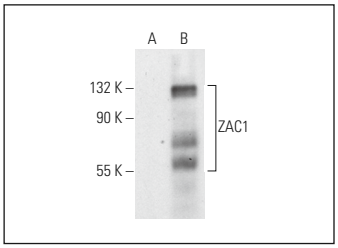
ZAC1 (C-7) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of human ZAC1: 51 kDa.

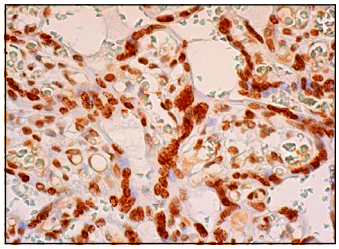
Molecular Weight of mouse ZAC1: 79 kDa.

Positive Controls: ZAC1 (m): 293 Lysate: sc-179767.

DATA



ZAC1 (C-7): sc-166944. Western blot analysis of ZAC1 expression in non-transfected: sc-110760 (**A**) and mouse ZAC1 transfected: sc-179767 (**B**) 293 whole cell lysates.



ZAC1 (C-7): sc-166944. Immunoperoxidase staining of formalin fixed, paraffin-embedded human placenta tissue showing nuclear staining of trophoblastic cells.

SELECT PRODUCT CITATIONS

1. Fard, S.S., et al. 2015. The p53 co-activator Zac1 neither induces cell cycle arrest nor apoptosis in chicken Lim1 horizontal progenitor cells. Cell Death Discov. 1: 15023.
2. Tanaka, S., et al. 2019. Involvement of PLAGL1/ZAC1 in hypocretin/orexin transcription. Int. J. Mol. Med. 43: 2164-2176.
3. Du, J., et al. 2021. Arid1a-Plagl1-Hh signaling is indispensable for differentiation-associated cell cycle arrest of tooth root progenitors. Cell Rep. 35: 108964.
4. Liang, X., et al. 2023. PLAGL1 is associated with prognosis and cell proliferation in pancreatic adenocarcinoma. BMC Gastroenterol. 23: 2.
5. Henry, S., et al. 2023. Polycomb protein RYBP activates transcription factor Plagl1 during *in vitro* cardiac differentiation of mouse embryonic stem cells. Open Biol. 13: 220305.

RESEARCH USE

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