SANTA CRUZ BIOTECHNOLOGY, INC.

PTTG (DCS-280): sc-56207

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The product of the oncogene PTTG, pituitary tumor transforming gene, is a human homolog of the anaphase-inhibitor vertebrate protein, securin. PTTG contains a basic amino-terminal domain and an acidic carboxy-terminal domain, which acts as a transactivation domain when fused to a heterologous DNA binding domain. Human PTTG is overexpressed in Jurkat and is also detected in human thymus, testis and placenta. PTTG is mainly expressed in the cytoplasm and is also partially localized to the nucleus. Vertebrate PTTG regulates the separin Esp1, which promotes chromatid separation, to overcome the cohesive forces that hold sister chromatids together. This regulatory function of PTTG suggests that defective regulation of cohesion may contribute to cancer by promoting chromosome instability. Although vertebrate PTTG shares cell-cycle functions with its yeast securin counterparts Pds1p and Cut2, none share sequence homology.

CHROMOSOMAL LOCATION

Genetic locus: PTTG1 (human) mapping to 5q33.3; Pttg1 (mouse) mapping to 11 A5.

SOURCE

PTTG (DCS-280) is a mouse monoclonal antibody raised against full length PTTG of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PTTG (DCS-280) is available conjugated to agarose (sc-56207 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-56207 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-56207 PE), fluorescein (sc-56207 FITC), Alexa Fluor® 488 (sc-56207 AF488), Alexa Fluor® 546 (sc-56207 AF546), Alexa Fluor® 594 (sc-56207 AF594) or Alexa Fluor® 647 (sc-56207 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-56207 AF680) or Alexa Fluor® 790 (sc-56207 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

PTTG (DCS-280) is recommended for detection of PTTG 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 PTTG siRNA (h): sc-37491, PTTG siRNA (m): sc-37492, PTTG shRNA Plasmid (h): sc-37491-SH, PTTG shRNA Plasmid (m): sc-37492-SH, PTTG shRNA (h) Lentiviral Particles: sc-37491-V and PTTG shRNA (m) Lentiviral Particles: sc-37492-V.

Molecular Weight (predicted) of PTTG: 22 kDa.

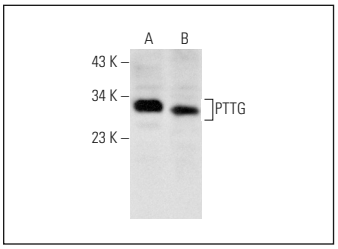
Molecular Weight (observed) of PTTG: 20-29 kDa.

Positive Controls: GH3 whole cell lysate: sc-364777.

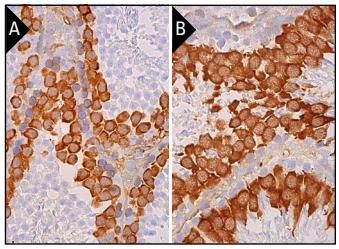
STORAGE

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

DATA



PTTG (DCS-280): sc-56207. Western blot analysis of PTTG expression in GH3 (**A**) and AtT-20/D16vF2 (**B**) whole cell lysates.



PTTG (DCS-280): sc-56207. Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse testis (**A**) and rat testis (**B**) tissue showing cytoplasmic and nuclear staining of cells in seminiferous ducts.

SELECT PRODUCT CITATIONS

1. Zatelli, M.C., et al. 2010. Role of pituitary tumour transforming gene 1 in medullary thyroid carcinoma. Anal. Cell. Pathol. 33: 207-216.
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4. Chen, H., et al. 2014. Salt-inducible kinase 3 is a novel mitotic regulator and a target for enhancing antimitotic therapeutic-mediated cell death. Cell Death Dis. 5: e1177.
5. Jeong, H.C., et al. 2015. Timely degradation of Wip1 phosphatase by APC/C activator protein Cdh1 is necessary for normal mitotic progression. J. Cell. Biochem. 116: 1602-1612.
6. Wong, W.K., et al. 2015. SGO1C is a non-functional isoform of Shugoshin and can disrupt sister chromatid cohesion by interacting with PP2A-B56. Cell Cycle 14: 3965-3977.
7. Park, Y.Y., et al. 2018. ATP depletion during mitotic arrest induces mitotic slippage and APC/C^{Cdh1}-dependent cyclin B1 degradation. Exp. Mol. Med. 50: 46.
8. Ma, K., et al. 2018. Pituitary tumor-transforming 1 expression in laryngeal cancer and its association with prognosis. Oncol. Lett. 16: 1107-1114.
9. Go, Y.H., et al. 2018. Screening of cytotoxic or cytostatic flavonoids with quantitative fluorescent ubiquitination-based cell cycle indicator-based cell cycle assay. R. Soc. Open Sci. 5: 181303.
10. Richeson, K.V., et al. 2020. Paradoxical mitotic exit induced by a small molecule inhibitor of APC/C^{Cdc20}. Nat. Chem. Biol. 16: 546-555.

RESEARCH USE

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