SANTA CRUZ BIOTECHNOLOGY, INC.

PTTG (C-2): sc-398471

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.

REFERENCES

1. Yamamoto, A., et al. 1996. Pds1p, an inhibitor of anaphase in budding yeast, plays a critical role in the APC and checkpoint pathway(s). J. Cell Biol. 133: 99-110.
2. Dominguez, A., et al. 1998. hPTTG, a human homologue of rat pttg, is overexpressed in hematopoietic neoplasms. Evidence for a transcriptional activation function of hPTTG. Oncogene 17: 2187-2193.
3. Zou, H., et al. 1999. Identification of a vertebrate sister-chromatid separation inhibitor involved in transformation and tumorigenesis. Science 285: 418-422.
4. Toth, A., et al. 1999. Yeast cohesion complex requires a conserved protein, Eco1p (Ctf7), to establish cohesion between sister chromatids during DNA replication. Genes Dev. 13: 320.
5. Uhlmann, F., et al. 1999. Sister-chromatid separation at anaphase onset is promoted by cleavage of the cohesion subunit Scc1. Nature 400: 37-42.

CHROMOSOMAL LOCATION

Genetic locus: PTTG1 (human) mapping to 5q33.3, PTTG2 (human) mapping to 4p14; Pttg1 (mouse) mapping to 11 A5.

SOURCE

PTTG (C-2) is a mouse monoclonal antibody raised against amino acids 1-160 of 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.

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.

APPLICATIONS

PTTG (C-2) is recommended for detection of PTTG of mouse, rat and human origin, and PTTG2 of 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for PTTG siRNA (m): sc-37492, PTTG shRNA Plasmid (m): sc-37492-SH and PTTG shRNA (m) Lentiviral Particles: sc-37492-V.

Molecular Weight (predicted) of PTTG: 22 kDa.

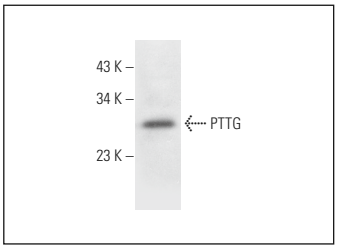
Molecular Weight (observed) of PTTG: 20-29 kDa.

Positive Controls: HCT-116 whole cell lysate: sc-364175 or COLO 320DM cell lysate: sc-2226.

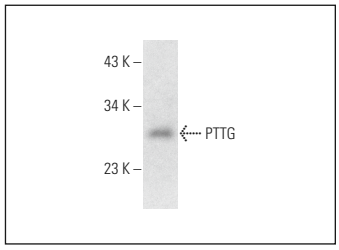
RECOMMENDED SUPPORT REAGENTS

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.

DATA



PTTG (C-2): sc-398471. Western blot analysis of PTTG expression in HCT-116 whole cell lysate.



PTTG (C-2): sc-398471. Western blot analysis of PTTG expression in COLO 320DM whole cell lysate.

SELECT PRODUCT CITATIONS

1. Yuan, Y.F., et al. 2016. TRAIP is involved in chromosome alignment and SAC regulation in mouse oocyte meiosis. Sci. Rep. 6: 29735.
2. Soto, M.E., et al. 2019. Preliminary analysis of the association of TRPV1 to the formation of Marfan syndrome aneurysms. Histol. Histopathol. 34: 1329-1343.

CONJUGATES

See **PTTG (DCS-280): sc-56207** for PTTG antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.