

# PT $\alpha$ (H-50): sc-30037

## BACKGROUND

Prothymosin  $\alpha$  (PT $\alpha$ ) is a nuclear protein that is widely expressed in mammalian tissues, including kidney, liver, spleen, normal lymphocytes, human T-cell leukemia virus-infected T cells and myeloma cells. The human PT $\alpha$  gene maps to chromosome 2 and encodes a protein that exhibits punctuated nuclear distribution, which correlates to transcription sites. PT $\alpha$  is a chromatin-remodeling protein that was initially thought to mediate T-lymphocyte maturation, but subsequently, has been shown to be involved in cell cycle progression, proliferation and cell differentiation. PT $\alpha$  is thought to be transported into the nucleus by the karyopherin  $\beta$ 1-Rch-1 complex, where it associates with histones H2A, H2B, H3 and H4. Also, PT $\alpha$  is phosphorylated on Thr 7 and Thr 12 or 13 by Prothymosin  $\alpha$ -phosphorylating kinase (PT $\alpha$ K) in a mitogen-activating pathway. The amino terminus of PT $\alpha$  is cleaved to produce a secreted, biologically active peptide thymosin  $\alpha$ 1, which may be used as an immunomodulator in cancer patients and patients with chronic active hepatitis, or as an immunoenhancer of vaccines in immunocompromised individuals.

## CHROMOSOMAL LOCATION

Genetic locus: PTMA (human) mapping to 2q37.1; Ptma (mouse) mapping to 1 D.

## SOURCE

PT $\alpha$  (H-50) is a rabbit polyclonal antibody raised against amino acids 1-50 mapping at the N-terminus of PT $\alpha$  precursor of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

PT $\alpha$  (H-50) is recommended for detection of Prothymosin  $\alpha$  (PT $\alpha$ ) precursor and active peptide of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g 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).

PT $\alpha$  (H-50) is also recommended for detection of Prothymosin  $\alpha$  (PT $\alpha$ ) precursor and active peptide in additional species, including equine, canine and bovine.

Suitable for use as control antibody for PT $\alpha$  siRNA (h): sc-40892, PT $\alpha$  siRNA (m): sc-40893, PT $\alpha$  shRNA Plasmid (h): sc-40892-SH, PT $\alpha$  shRNA Plasmid (m): sc-40893-SH, PT $\alpha$  shRNA (h) Lentiviral Particles: sc-40892-V and PT $\alpha$  shRNA (m) Lentiviral Particles: sc-40893-V.

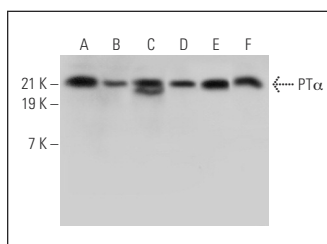
Molecular Weight of PT $\alpha$ : 12 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, HeLa whole cell lysate: sc-2200 or PANC-1 whole cell lysate: sc-364380.

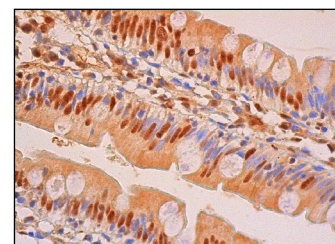
## RECOMMENDED SECONDARY REAGENTS

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). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

## DATA



PT $\alpha$  (H-50): sc-30037. Western blot analysis of PT $\alpha$  expression in K-562 (A), Jurkat (B), HeLa (C), HL-60 (D), PANC-1 (E) and RAW 264.7 (F) whole cell lysates.



PT $\alpha$  (H-50): sc-30037. Immunoperoxidase staining of formalin fixed, paraffin-embedded human small intestine tissue showing nuclear and cytoplasmic staining of glandular cells.

## SELECT PRODUCT CITATIONS

1. Tsai, Y.S., et al. 2009. Aberrant prothymosin- $\alpha$  expression in human bladder cancer. *Urology* 73: 188-192.
2. Gou, L.T., et al. 2009. Altered protein-expressing profile in hPNAS4-induced apoptosis in A549 human lung adenocarcinoma cells. *J. Cell. Biochem.* 108: 1211-1219.

## 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.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.