SANTA CRUZ BIOTECHNOLOGY, INC.

Prohibitin (H-80): sc-28259

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The Power to Question

BACKGROUND

Prohibitin is an evolutionarily conserved protein that has antiproliferative activity. The gene encoding human Prohibitin maps to chromosome 17q21.33 and is ubiquitously expressed. Prohibitin is a post-synthetically modified protein that is localized in the inner membrane of mitochondria, where it regulates the cell cycle by blocking the transition between the G_1 and S phases, and on the plasma membrane of B cells, where it mediates B cell maturation. Prohibitin mRNA and protein levels are high in G_1, decline during the S phase, rise again in G_2 and decline in M phase, which suggests that Prohibitin controls the cell cycle by using both transcriptional and post-translational mechanisms. Prohibitin is also a potential tumor suppressor protein that binds to retinoblastoma (Rb) and subsequently inhibits the activity of E2F family members in response to specific signaling cascades. Prohibitin 2 is a repressor of estrogen receptor activity, and is required for somatic and germline differentiation in the larval gonad during embryonic development. Mutations in the Prohibitin genes are correlated with breast cancer development and/or progression in more than 80% of the cell lines analyzed.

CHROMOSOMAL LOCATION

Genetic locus: PHB (human) mapping to 17q21.33; Phb (mouse) mapping to 11 D.

SOURCE

Prohibitin (H-80) is a rabbit polyclonal antibody raised against amino acids 193-272 mapping at the C-terminus of Prohibitin of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Prohibitin (H-80) is recommended for detection of Prohibitin 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Prohibitin (H-80) is also recommended for detection of Prohibitin in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for Prohibitin siRNA (h): sc-37629, Prohibitin siRNA (m): sc-37630, Prohibitin shRNA Plasmid (h): sc-37629-SH, Prohibitin shRNA Plasmid (m): sc-37630-SH, Prohibitin shRNA (h) Lentiviral Particles: sc-37629-V and Prohibitin shRNA (m) Lentiviral Particles: sc-37630-V.

Molecular Weight of Prohibitin: 30-32 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201, Ramos cell lysate: sc-2216 or F9 cell lysate: sc-2245.

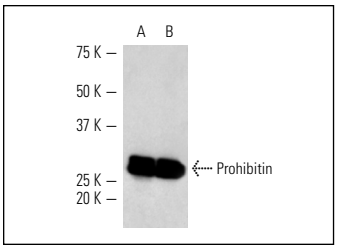
RESEARCH USE

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

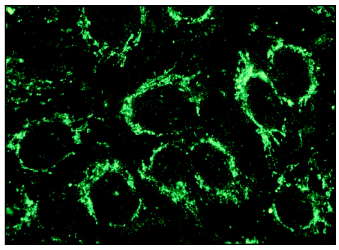
STORAGE

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

DATA



Prohibitin (H-80): sc-28259. Western blot analysis of Prohibitin expression in A-431 (**A**) and Ramos (**B**) whole cell lysates.



Prohibitin (H-80): sc-28259. Immunofluorescence staining of methanol-fixed A-431 cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

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3. Chiu, C.F., et al. 2012. Recombinant viral capsid protein VP1 suppresses migration and invasion of human cervical cancer by modulating phosphorylated prohibitin in lipid rafts. Cancer Lett. 320: 205-214.
4. Choi, Y.B., et al. 2012. Human herpesvirus 8 interferon regulatory factor-mediated BH3-only protein inhibition via Bid BH3-B mimicry. PLoS Pathog. 8: e1002748.
5. Picard, C., et al. 2013. Nuclear accumulation of prohibitin 1 in osteoarthritic chondrocytes down-regulates PITX1 expression. Arthritis Rheum. 65: 993-1003.
6. Rahman, M.M. and Seo, Y.R. 2013. Discovery of potential targets of selenomethionine-mediated chemoprevention in colorectal carcinoma mouse model using proteomics analysis. Carcinogenesis 34: 1575-1584.
7. Caceres, N.E., et al. 2013. Analysis of the membrane proteome of ciprofloxacin-resistant macrophages by stable isotope labeling with amino acids in cell culture (SILAC). PLoS ONE 8: e58285.
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