SANTA CRUZ BIOTECHNOLOGY, INC.

p-Prohibitin 2 (Tyr 128): sc-130604

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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. This suggests that Prohibitin controls the cell cycle by using both transcriptional and posttranslational 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.

REFERENCES

1. Sato, T., et al. 1992. The human Prohibitin gene located on chromosome 17q21 is mutated in sporadic breast cancer. Cancer Res. 52: 1643-1646.
2. Roskams, A.J., et al. 1993. Cell cycle activity and expression of Prohibitin mRNA. J. Cell Physiol. 157: 289-295.
3. McClung, J.K., et al. 1995. Prohibitin: potential role in senescence, development, and tumor suppression. Exp. Gerontol. 30: 99-124.
4. Dell'Orco, R.T., et al. 1996. Prohibitin and the senescent phenotype. Exp. Gerontol. 31: 245-252.
5. Jupe, E.R., et al. 1996. Prohibitin in breast cancer cell lines: loss of antiproliferative activity is linked to 3' untranslated region mutations. Cell Growth Differ. 7: 871-888.
6. Wang, S., et al. 1999. Rb and Prohibitin target distinct regions of E2F1 for repression and respond to different upstream signals. Mol. Cell. Biol.19: 7447-7460.
7. Wang, S., et al. 1999. Prohibitin, a potential tumor suppressor, interacts with RB and regulates E2F function. Oncogene 18: 3501-3510.
8. Woodlock, T.J., et al. 2001. Prohibitin expression is increased in phorbol ester-treated chronic leukemic B lymphocytes. Blood Cells Mol. Dis. 27: 27-34.

CHROMOSOMAL LOCATION

Genetic locus: PHB2 (human) mapping to 12p13.31.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.

SOURCE

p-Prohibitin 2 (Tyr 128) is a rabbit polyclonal antibody raised against a short amino acid sequence containing phosphorylated Tyr 128 of Prohibitin 2 of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

p-Prohibitin 2 (Tyr 128) is recommended for detection of Tyr 128 phosphorylated Prohibitin 2 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Prohibitin 2 siRNA (h): sc-45849, Prohibitin 2 shRNA Plasmid (h): sc-45849-SH and Prohibitin 2 shRNA (h) Lentiviral Particles: sc-45849-V.

Molecular Weight of p-Prohibitin 2: 37 kDa.

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 B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent) and Western Blotting Luminol Reagent: sc-2048.

RESEARCH USE

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