

Prohibitin 2 (T-22): sc-130854

BACKGROUND

Prohibitin is an evolutionarily conserved protein that has antiproliferative activity. The gene encoding human Prohibitin maps to chromosome 17q21 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 G₁ 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 G₁, decline during the S phase, rise again in G₂ and decline in M phase, which 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 anti-proliferative 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.

CHROMOSOMAL LOCATION

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

SOURCE

Prohibitin 2 (T-22) is a purified rabbit polyclonal antibody raised against a peptide mapping near the N-terminus 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.

STORAGE

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

APPLICATIONS

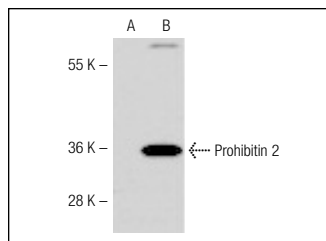
Prohibitin 2 (T-22) is recommended for detection of Prohibitin 2 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), 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 Prohibitin 2 siRNA (h): sc-45849, Prohibitin 2 shRNA Plasmid (h): sc-45849-SH and Prohibitin 2 shRNA (h) Lentiviral Particles: sc-45849-V.

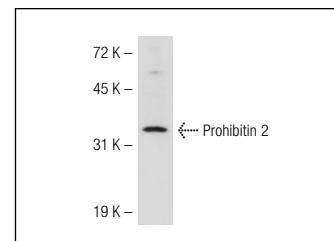
Molecular Weight of Prohibitin 2: 37 kDa.

Positive Controls: BJAB whole cell lysate: sc-2207, human Prohibitin 2 transfected 293 whole cell lysate or MCF7 whole cell lysate: sc-2206.

DATA



Prohibitin 2 (T-22): sc-130854. Western blot analysis of Prohibitin 2 expression in non-transfected (A) and human Prohibitin 2 transfected (B) 293 whole cell lysates.



Prohibitin 2 (T-22): sc-130854. Western blot analysis of Prohibitin 2 expression in BJAB whole cell lysate.

RESEARCH USE

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

PROTOCOLS

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



Try **Prohibitin 2 (A-2): sc-133094**, our highly recommended monoclonal alternative to Prohibitin 2 (T-22). Also, for AC, HRP, FITC, PE, Alexa Fluor[®] 488 and Alexa Fluor[®] 647 conjugates, see **Prohibitin 2 (A-2): sc-133094**.