

Prohibitin-Mitochondrial Marker

rev. 02/23/16
Cat#: ET1602-31

Product Type: Recombinant rabbit monoclonal IgG, primary antibodies

Species reactivity: Human, Mouse, Rat, Zebra fish

Applications: WB, ICC, IHC, IP, FC

Molecular Wt.: 30 kDa

Description: 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.

Immunogen:

Recombinant protein.

Positive control:

NIH/3T3, Jurkat, HepG2, human liver cancer tissue, mouse stomach tissue, human kidney tissue, mouse heart tissue, mouse liver tissue, mouse kidney tissue.

Subcellular location:

Mitochondrion inner membrane.

Database links:

SwissProt: P35232 (Human) P67778 (Mouse) P67779 (Rat)

Recommended Dilutions:

WB: 1:1,000-1:2,000 **ICC:** 1:50-1:200
IHC: 1:200-1:500 **FC:** 1:50-1:100

Storage Buffer:

1*TBS (pH7.4), 1%BSA, 40%Glycerol. Preservative: 0.05% Sodium Azide.

Storage Instruction:

Store at +4° C after thawing. Aliquot store at -20° C or -80° C. Avoid repeated freeze / thaw cycles.

Purity:

ProA affinity purified.

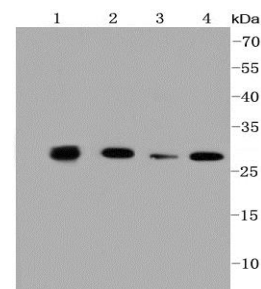


Fig1: Western blot analysis of Prohibitin on different lysates using anti-Prohibitin antibody at 1/1,000 dilution.

Positive control:

Lane 1: 293

Lane 2: Jurkat

Lane 3: Mouse kidney

Lane 4: HepG2

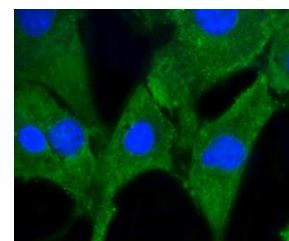


Fig2: ICC staining Prohibitin in NIH/3T3 cells (green). The nuclear counter stain is DAPI (blue). Cells were fixed in paraformaldehyde, permeabilised with 0.25% Triton X100/PBS.

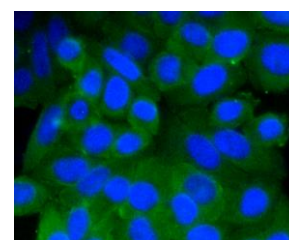


Fig3: ICC staining Prohibitin in HepG2 cells (green). The nuclear counter stain is DAPI (blue). Cells were fixed in paraformaldehyde, permeabilised with 0.25% Triton X100/PBS.

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Applications: WB=Western blot IP=Immunoprecipitation IHC=Immunohistochemistry IF=Immunofluorescence FC=Flow cytometry
Species Cross-Reactivity: H=human M=mouse R=rat Hm=hamster Mk=monkey Mi=mink C=chicken Dm=D.melanogaster X=Xenopus Z=zebrafish
B=bovine Dg=dog Pg=pig Sc=S.

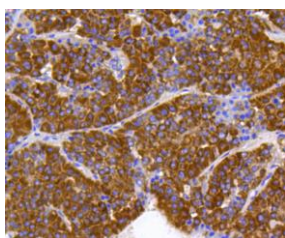


Fig4: Immunohistochemical analysis of paraffin-embedded human liver cancer tissue using anti-Prohibitin antibody. Counter stained with hematoxylin.

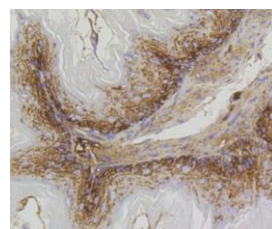


Fig8: Immunohistochemical analysis of paraffin-embedded mouse stomach tissue using anti-Prohibitin antibody. Counter stained with hematoxylin.

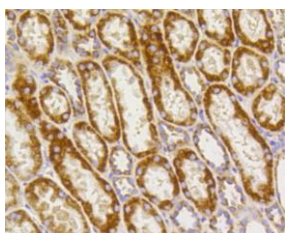


Fig5: Immunohistochemical analysis of paraffin-embedded human kidney tissue using anti-Prohibitin antibody. Counter stained with hematoxylin.

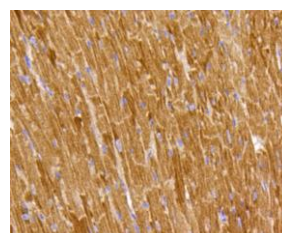


Fig9: Immunohistochemical analysis of paraffin-embedded mouse heart tissue using anti-Prohibitin antibody. Counter stained with hematoxylin.

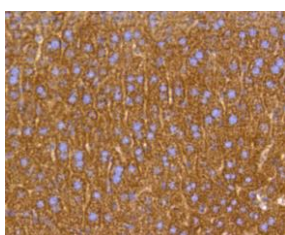


Fig6: Immunohistochemical analysis of paraffin-embedded mouse liver tissue using anti-Prohibitin antibody. Counter stained with hematoxylin.

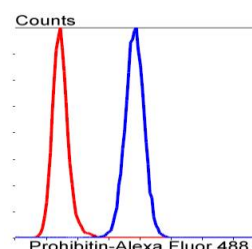


Fig10: Flow cytometric analysis of HepG2 cells with Prohibitin antibody at 1/50 dilution (blue) compared with an unlabelled control (cells without incubation with primary antibody; red). Alexa Fluor 488-conjugated goat anti rabbit IgG was used as the secondary antibody.

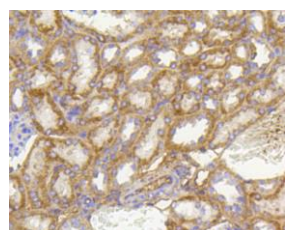


Fig7: Immunohistochemical analysis of paraffin-embedded mouse kidney tissue using anti-Prohibitin antibody. Counter stained with hematoxylin.

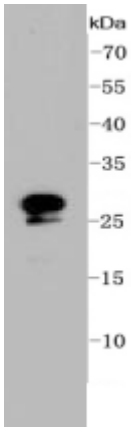


Fig11: Western blot analysis of Prohibitin on zebrafish tissue lysates using anti-Prohibitin antibody.

Background References

1. Helenius TO et al. Keratin 8 absence down-regulates colonocyte HMGC2 and modulates colonic ketogenesis and energy metabolism. *Mol Biol Cell* 26:2298-310 (2015).
2. Neuhaus A et al. A novel Pex14 protein-interacting site of human Pex5 is critical for matrix protein import into peroxisomes. *J Biol Chem* 289:437-48 (2014).

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