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Anti-PRIM1 Antibody

Catalog # AP51446

Product Information

Application	WB, IHC, IF/IC
Primary Accession	P49642
Reactivity	Human, Mouse, Rat, Bovine
Host	Rabbit
Clonality	Polyclonal
Calculated MW	49902

Additional Information

Gene ID	5557
Other Names	DNA primase small subunit; DNA primase 49 kDa subunit; p49
Target/Specificity	KLH-conjugated synthetic peptide encompassing a sequence within the C-term region of human PRIM1. The exact sequence is proprietary.
Dilution	WB~~ 1:1000 IHC~~1:100~500 IF/IC~~N/A
Format	Liquid in 0.42% Potassium phosphate, 0.87% Sodium chloride, pH 7.3, 30% glycerol, and 0.01% sodium azide.
Storage	Store at -20 °C.Stable for 12 months from date of receipt

Protein Information

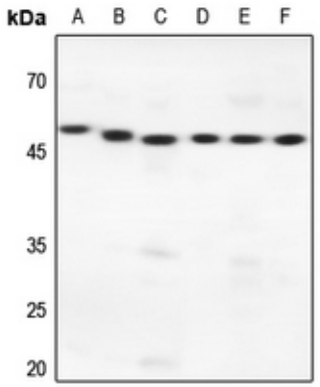
Name	PRIM1
Function	Catalytic subunit of the DNA primase complex and component of the DNA polymerase alpha complex (also known as the alpha DNA polymerase-primase complex - primosome/replisome) which play an essential role in the initiation of DNA synthesis (PubMed:17893144, PubMed:24043831, PubMed:25550159, PubMed:26975377, PubMed:31479243, PubMed:33060134, PubMed:9268648, PubMed:9705292). During the S phase of the cell cycle, the DNA polymerase alpha complex (composed of a catalytic subunit POLA1, an accessory subunit POLA2 and two primase subunits, the catalytic subunit PRIM1 and the regulatory subunit PRIM2) is recruited to DNA at the replicative forks via direct interactions with MCM10 and WDHD1 (By similarity). The primase subunit of the polymerase alpha complex initiates DNA synthesis by oligomerizing short RNA primers on both leading and lagging strands (PubMed:17893144). These primers are initially extended by the polymerase alpha catalytic subunit and subsequently transferred to polymerase delta and polymerase epsilon for processive synthesis on the lagging and leading strand, respectively (By similarity). In the primase

complex, both subunits are necessary for the initial di-nucleotide formation, but the extension of the primer depends only on the catalytic subunit (PubMed:17893144). Synthesizes 9-mer RNA primers (also known as the 'unit length' RNA primers). Incorporates only ribonucleotides in the presence of ribo- and deoxy-nucleotide triphosphates (rNTPs, dNTPs) (PubMed:26975377). Requires template thymine or cytidine to start the RNA primer synthesis, with an adenine or guanine at its 5'-end (PubMed:25550159, PubMed:26975377). Binds single stranded DNA (By similarity).

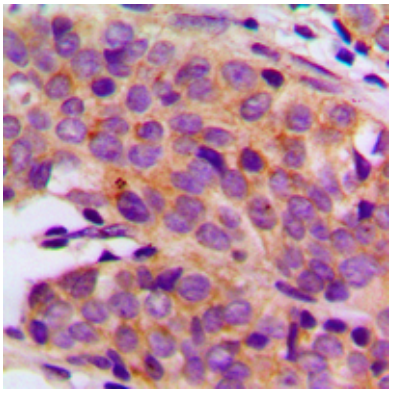
References

Stadlbauer F.,et al.Eur. J. Biochem. 222:781-793(1994).
Cloutier S.,et al.Genomics 43:398-401(1997).
Burkard T.R.,et al.BMC Syst. Biol. 5:17-17(2011).

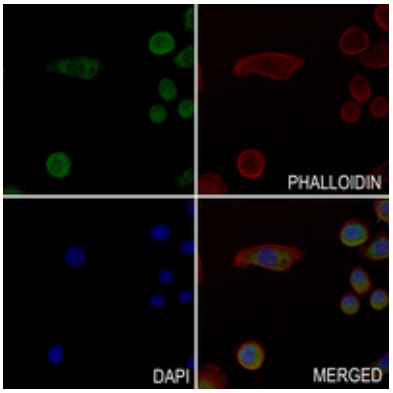
Images



Western blot analysis of PRIM1 expression in HEK293T (A), Hela (B), A375 (C), mouse spleen (D), rat liver (E), rat spleen (F) whole cell lysates. (Predicted band size: 49 kD; Observed band size: 50 kD)



Immunohistochemical analysis of PRIM1 staining in human breast cancer formalin fixed paraffin embedded tissue section. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0). The section was then incubated with the antibody at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.



Immunofluorescent analysis of PRIM1 staining in PCCL cells. Formalin-fixed cells were permeabilized with 0.1% Triton X-100 in TBS for 5-10 minutes and blocked with 3% BSA-PBS for 30 minutes at room temperature. Cells were probed with the primary antibody in 3% BSA-PBS and incubated overnight at 4 °C in a hidified chamber. Cells were washed with PBST and incubated with a AF488-conjugated secondary antibody (green) in PBS at room temperature in the dark. Phalloidin - AF594 was used to stain Actin filaments (red). DAPI was used to stain the cell nuclei (blue).

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.