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PHLPP2 Antibody
Catalog # ASC11541

Specification

PHLPP2 Antibody - Product Information

Application	**WB, ICC, IF**
Primary Accession	Q6ZVD8
Other Accession	NP_055835, 65301141
Reactivity	**Human**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**IgG**
Calculated MW	**156 kDa KDa**
Application Notes	**PHLPP2 antibody can be used for detection of PHLPP2 by Western blot at 1 µg/mL.**

PHLPP2 Antibody - Additional Information

Gene ID **23035**

Target/Specificity
PHLPP2; At least three isoforms are known to exist; this antibody will detect the two largest isoforms. PHLPP2 antibody is predicted to not cross react with PHLPP1.

Reconstitution & Storage
PHLPP2 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.

Precautions
PHLPP2 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

PHLPP2 Antibody - Protein Information

Name PHLPP2

Synonyms KIAA0931, PHLPPL

Function
Protein phosphatase involved in regulation of Akt and PKC signaling. Mediates dephosphorylation in the C-terminal domain hydrophobic motif of members of the AGC Ser/Thr protein kinase family; specifically acts on 'Ser-473' of AKT1, 'Ser-660' of PRKCB isoform beta-II and 'Ser-657' of PRKCA. Akt regulates the balance between cell survival and apoptosis through a cascade that primarily alters the function of transcription factors that regulate pro- and antiapoptotic genes. Dephosphorylation of 'Ser-473' of Akt triggers apoptosis and decreases cell proliferation. Also controls the phosphorylation of AKT3. Dephosphorylates STK4 on 'Thr-387' leading to STK4 activation and apoptosis (PubMed:20513427). Dephosphorylates RPS6KB1 and is involved in regulation of cap-dependent translation (PubMed:<a href="http://www.uniprot.org/citations/21986499"

target="_blank">21986499). Inhibits cancer cell proliferation and may act as a tumor suppressor. Dephosphorylation of PRKCA and PRKCB leads to their destabilization and degradation. Dephosphorylates RAF1 inhibiting its kinase activity (PubMed:24530606).

Cellular Location
Cytoplasm. Membrane; Peripheral membrane protein. Nucleus. Note=In colorectal cancer tissue, expression is concentrated in the cytoplasm and nucleus

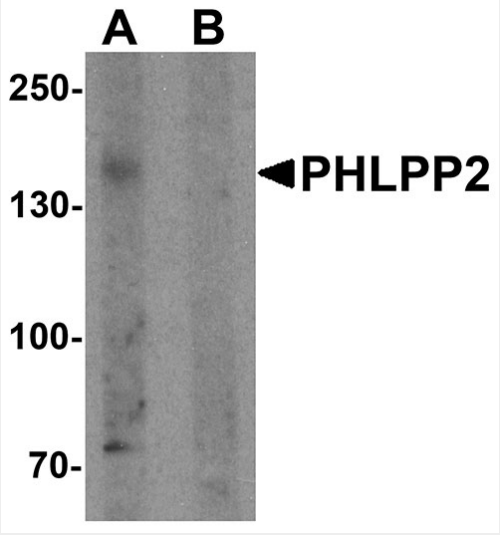
Tissue Location
In colorectal cancer tissue, expression is highest in the surface epithelium of normal colonic mucosa adjacent to the cancer tissue but is largely excluded from the crypt bases. Expression is lost or significantly decreased in 80% of tested tumors (at protein level).

PHLPP2 Antibody - Protocols

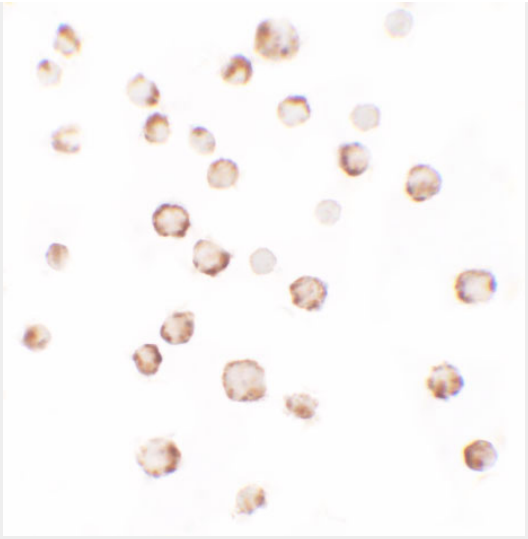
Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

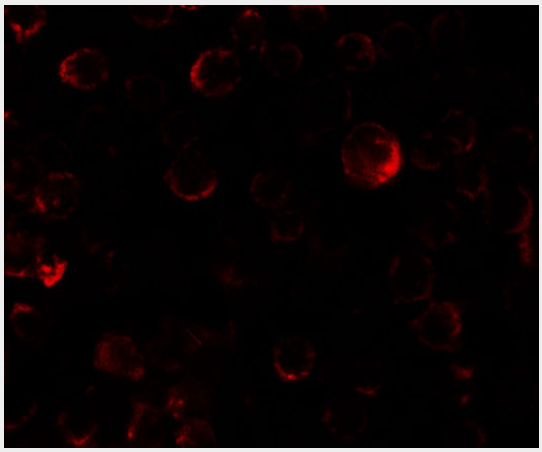
PHLPP2 Antibody - Images



Western blot analysis of PHLPP2 in SW480 cell lysate with PHLPP2 antibody at 1 µg/ml in (A) the presence and (B) the absence of blocking peptide.



Immunocytochemistry of PHLPP2 in SW480 cells with PHLPP2 antibody at 2.5 µg/ml.



Immunofluorescence of PHLPP2 in SW480 cells with PHLPP2 antibody at 5 µg/ml.

PHLPP2 Antibody - Background

PHLPP2 Antibody: PHLPP2 is a member of the serine/threonine phosphatase family, which are important regulators of Akt serine-threonine kinases (AKT1, AKT2, AKT3) and conventional/novel protein kinase C (PKC) isoforms. PHLPP1 and PHLPP2 have a similar domain structure and have been shown to dephosphorylate and inactivate, distinct Akt isoforms, at one of the two critical phosphorylation sites required for activation: Serine473. PHLPP2 dephosphorylates AKT1 and AKT3, whereas PHLPP1 is specific for AKT2 and AKT3. PHLPP1 promotes apoptosis and may act as a tumor suppressor. PHLPP2 associates with and is inhibited by adenylyl cyclase type 6 (AC6), thereby allowing Akt activation.

PHLPP2 Antibody - References

Brognard J and Newton AC. PHLiPPing the switch on Akt and protein kinase C signaling. Trends Endocrinol. Metab. 2008; 19:223-30.
Gao T, Furnari F and Newton AC. PHLPP: a phosphatase that directly dephosphorylates Akt, promotes apoptosis, and suppresses tumor growth. Mol. Cell 2005; 18:13-24.
Brognard J, Sierecki E, Gao T, et al. PHLPP and a second isoform, PHLPP2, differentially attenuate the amplitude of Akt signaling by regulating distinct Akt isoforms. Mol. Cell 2007; 25:917-31
Gao MH, Miyanohara A, Feramisco JR, et al. Activation of PH-domain leucine-rich protein phosphatase 2 (PHLPP2) by agonist stimulation in cardiac myocytes expressing adenylyl cyclase

type 6. Biochem. Biophys. Res. Commun. 2009; 384:193-8.