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Prostatic Acid Phosphatase (D3Y5P) Rabbit mAb

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rev. 06/30/16

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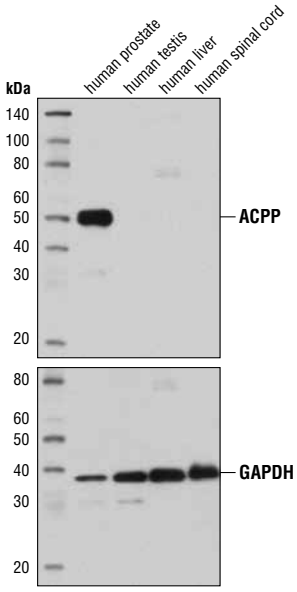
Entrez Gene ID #55
UniProt ID #P15309

Applications	Species Cross-Reactivity*	Molecular Wt.	Isotype
W, IHC-P Endogenous	H	50 kDa	Rabbit IgG**

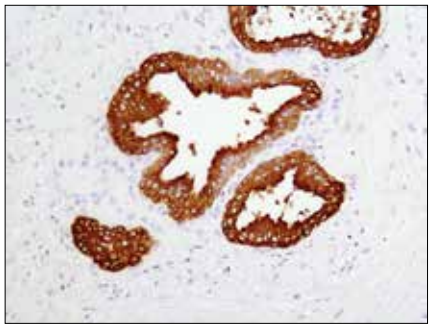
Background: Prostatic Acid Phosphatase (ACPP or PAP) is a member of the histidine acid phosphatase family. It is a non-specific phosphatase that is capable of dephosphorylating tyrosine residues as well as phospholipids under mildly acidic conditions. ACPP has ecto-5'-nucleotidase activity in pain-sensing neurons where it converts AMP to adenosine, suppressing the pain response (1,2). ACPP occurs as two isoforms that are both heavily glycosylated. The secreted phosphatase (sPAP) is found predominantly in the prostate and seminal plasma, while the cellular isoform (cPAP) is broadly expressed at very low levels and is associated with the plasma and lysosomal membranes (3-5). Cellular PAP has been shown to dephosphorylate ErbB2 at various tyrosine residues effectively terminating signaling (6). Furthermore, the physical interaction between cPAP and ErbB2 appears to regulate androgen sensitivity in prostate cancer cells. Loss of cPAP in androgen-sensitive prostate cancer cells results in the development of a castration-resistant phenotype suggesting that ACPP plays a significant role in prostate cancer cell growth (7). ACPP is expressed in metastatic cells arising from prostate cancer - especially in prostate-derived bone metastasis - suggesting that it may be a relevant diagnostic indicator of prostate cancer re-emergence in bone (8).

Specificity/Sensitivity: Prostatic Acid Phosphatase (D3Y5P) Rabbit mAb recognizes endogenous levels of total ACPP protein. The antibody is predicted to detect both the cellular and secreted isoforms of ACPP.

Source/Purification: Monoclonal antibody is produced by immunizing animals with recombinant human full-length prostatic acid phosphatase.



Western blot analysis of extracts from human prostate, testis, liver and spinal cord using Prostatic Acid Phosphatase (D3Y5P) Rabbit mAb (upper) and GAPDH (D16H11) XP® Rabbit mAb #5174 (lower) demonstrating prostate-specific expression of ACPP.



Immunohistochemical analysis of human prostate carcinoma using Prostatic Acid Phosphatase (D3Y5P) Rabbit mAb.

IMPORTANT: For western blots, incubate membrane with diluted antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Storage: Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. *Do not aliquot the antibody.*

***Species cross-reactivity is determined by western blot.**

****Anti-rabbit secondary antibodies must be used to detect this antibody.**

Recommended Antibody Dilutions:

Western blotting	1:1000
Immunohistochemistry (Paraffin)	1:600†
Unmasking buffer:	Citrate
Antibody diluent:	SignalStain® Antibody Diluent #8112
Detection reagent:	SignalStain® Boost (HRP, Rabbit) #8114

†*Optimal IHC dilutions determined using SignalStain® Boost IHC Detection Reagent.*

For product specific protocols please see the web page for this product at www.cellsignal.com.

Please visit www.cellsignal.com for a complete listing of recommended companion products.

Background References:

(1) Street, S.E. et al. (2013) *J Neurosci* 33, 11314-22.
(2) Street, S.E. et al. (2011) *Mol Pain* 7, 80.
(3) Tanaka, M. et al. (2004) *FEBS Lett* 571, 197-204.
(4) Quintero, I.B. et al. (2007) *Cancer Res* 67, 6549-54.
(5) Graddis, T.J. et al. (2011) *Int J Clin Exp Pathol* 4, 295-306.
(6) Chuang, T.D. et al. (2010) *J Biol Chem* 285, 23598-606.
(7) Muniyan, S. et al. (2013) *Int J Mol Sci* 14, 10438-64.
(8) Kirschenbaum, A. et al. (2011) *Ann N Y Acad Sci* 1237, 64-70.

Applications Key: **W**—Western **IP**—Immunoprecipitation **IHC**—Immunohistochemistry **ChIP**—Chromatin Immunoprecipitation **IF**—Immunofluorescence **F**—Flow cytometry **E-P**—ELISA-Peptide
Species Cross-Reactivity Key: **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. cerevisiae **Ce**—C. elegans **Hr**—horse **All**—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.