Store at -20°C

#14013

PC2 (D1E1S) XP® Rabbit mAb

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New 09/14

Entrez-Gene ID #5126
UniProt ID #P16519

For Research Use Only. Not For Use In Diagnostic Procedures.

Applications	Species Cross-Reactivity*	Molecular Wt.	Isotype
W, IP, IHC-P, IF-IC, IF-F Endogenous	H, M, R, (X, B, Hr)	65-75 kDa	Rabbit IgG**

Background: The proprotein convertases (PCs) are enzymes that activate precursor proteins through proteolytic cleavage within the secretory pathway. PCs comprise several enzymes that are basic amino acid-specific proteinases (furin, PC1/3, PC2, PC4, PACE4, PC5/6, and PC7), as well as nonbasic amino acid convertases (S1P and PC9) (1). PCs have a common structure that includes an N-terminal signal peptide for secretory pathway targeting; a pro-domain that is thought to act as an intramolecular chaperone; a catalytic domain containing the active site; a P-domain that contributes to the overall folding of the enzyme by regulating stability, calcium-, and pH-dependence; and a C-terminal domain that interacts with the membrane (2). PCs act in a tissue- and substrate-specific fashion to generate an array of bioactive peptides and proteins from precursors, both in the brain and the periphery (3).

Unlike what is observed with furin whose gene invalidation is lethal, inactivation of mouse PC2 by the introduction of a neomycin resistance gene into the third exon of the *PCSK2* gene does not alter mouse viability (4). PC2 inactivation leads to alteration of the pancreatic islet cells, in agreement with the involvment of PC2 in the conversion of pro-insulin and pro-glucagon (5). PC2 is also responsible for the processing of several neuroendocrine peptide precursors such as pro-CCK, POMC, and neurotensin (6).

Specificity/Sensitivity: PC2 (D1E1S) XP® Rabbit mAb recognizes endogenous levels of total PC2 protein.

Source/Purification: Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Pro194 of human PC2 protein.

Background References:

(1) Scamuffa, N. et al. (2006) *FASEB J* 20, 1954-63.

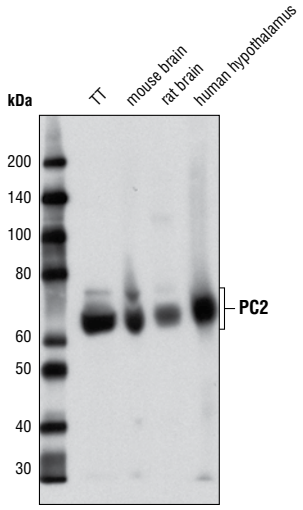
(2) Fugère, M. and Day, R. (2005) *Trends Pharmacol Sci* 26, 294-301.

(3) Seidah, N.G. and Chrétien, M. (1999) *Brain Res* 848, 45-62.

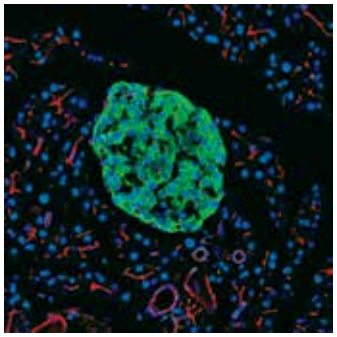
(4) Rouillé, Y. et al. (1995) *Front Neuroendocrinol* 16, 322-61.

(5) Steiner, D.F. et al. (1996) *Diabetes Metab* 22, 94-104.

(6) Scamuffa, N. et al. (2006) *FASEB J* 20, 1954-63.



Western blot analysis of extracts from TT, mouse brain, rat brain, and human hypothalamus, using PC2 (D1E1S) XP® Rabbit mAb.



Confocal immunofluorescent analysis of normal mouse pancreas using PC2 (D1E1S) XP® Rabbit mAb (green). Actin filaments were labeled with DyLight™ 554 Phalloidin #13054 (red). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).

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
Immunoprecipitation	1:50
Immunohistochemistry (Paraffin)	1:3200†
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.*

Immunofluorescence (IF-IC)	1:800
Immunofluorescence (IF-F)	1:800
IF Protocol:	Methanol Permeabilization required

For product specific protocols and a complete listing of recommended companion products please see the product web page at www.cellsignal.com

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.

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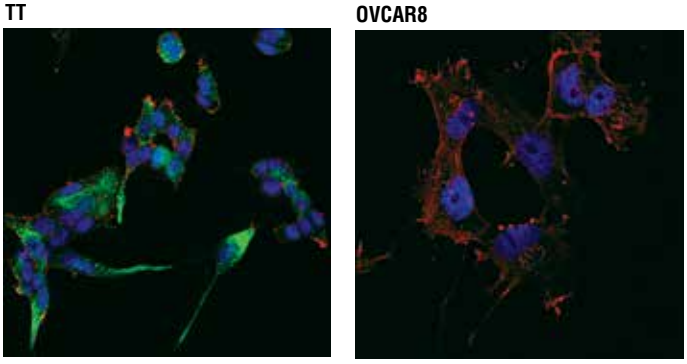
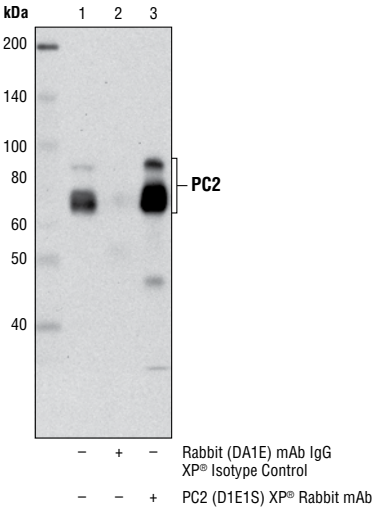
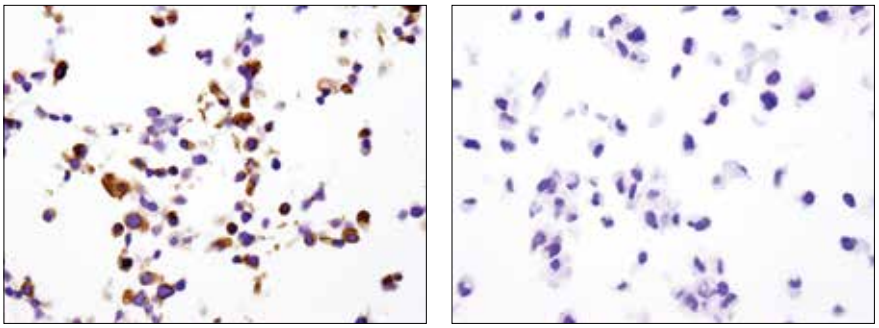


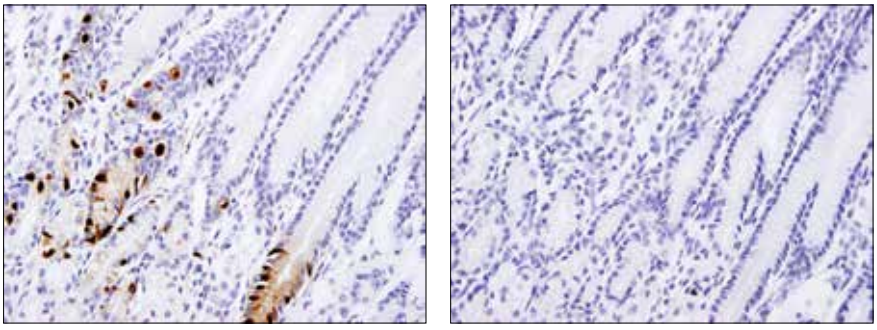
Confocal immunofluorescent analysis of TT cells (left) and OVCAR8 (right) cells using PC2 (D1E1S) XP® Rabbit mAb (green). Actin filaments were labeled with DyLight™ 554 Phalloidin #13054 (red). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).



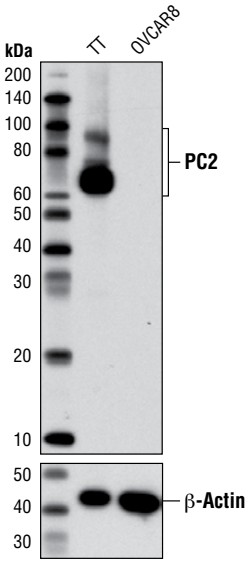
Immunoprecipitation of PC2 from TT cell extracts using Rabbit (DA1E) mAb IgG XP® Isotype Control #3900 (lane 2) or PC2 (D1E1S) XP® Rabbit mAb (lane 3). Lane 1 is 10% input. Western blot analysis was performed using PC2 (D1E1S) XP® Rabbit mAb.



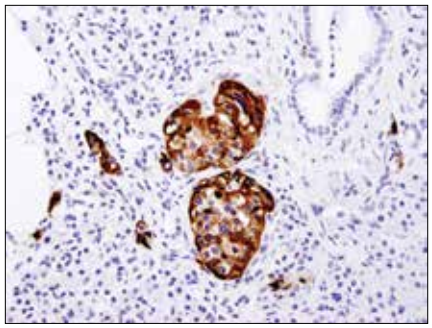
Immunohistochemical analysis of paraffin-embedded TT (left) and OVCAR8 (right) cell pellets using PC2 (D1E1S) XP® Rabbit mAb.



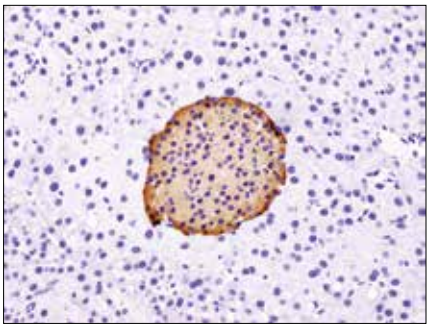
Immunohistochemical analysis of paraffin-embedded human stomach using PC2 (D1E1S) XP® Rabbit mAb in the presence of control peptide (left) or antigen-specific peptide (right).



Western blot analysis of extracts from TT and OVCAR8 cells using PC2 (D1E1S) XP® Rabbit mAb (upper) and β-Actin (D6A8) Rabbit mAb #8457 (lower).



Immunohistochemical analysis of paraffin-embedded human pancreas using PC2 (D1E1S) XP® Rabbit mAb.



Immunohistochemical analysis of paraffin-embedded mouse pancreas using PC2 (D1E1S) XP® Rabbit mAb.