Revision 3

#14013 Store at -20C

PC2 (D1E1S) XP® Rabbit mAb

Cell Signaling TECHNOLOGY®

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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
WB, IP, IHC-P, IF-F, IF-IC	H M R	Endogenous	65-75	Rabbit IgG	#P16519	5126

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:50
Immunohistochemistry (Paraffin)	1:3200
Immunofluorescence (Frozen)	1:800
Immunofluorescence (Immunocytochemistry)	1:800

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.*

For a carrier free (BSA and azide free) version of this product see product #33990.

Specificity / Sensitivity

PC2 (D1E1S) XP® Rabbit mAb recognizes endogenous levels of total PC2 protein.

Species predicted to react based on 100% sequence homology

Xenopus, Bovine, Horse

Source / Purification

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

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).

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.
7. Moffett, R.C. et al. (2014) *PLoS One* 9, e96863.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

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

Applications Key

WB: Western Blotting **IP:** Immunoprecipitation **IHC-P:** Immunohistochemistry (Paraffin)
IF-F: Immunofluorescence (Frozen) **IF-IC:** Immunofluorescence (Immunocytochemistry)

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **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
GP: Guinea Pig **Rab:** rabbit **All:** all species expected

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Limited Uses