Revision 1

Store at -20C

#3370

Phospho-Tyrosine Hydroxylase (Ser31) Antibody

Cell Signaling TECHNOLOGY®

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

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source:	UniProt ID:	Entrez-Gene Id:
WB, IP	R	Endogenous	55-60	Rabbit	#P04177	25085

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:50

Storage

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

Specificity / Sensitivity

Phospho-Tyrosine Hydroxylase (Ser31) Antibody detects endogenous levels of tyrosine hydroxylase only when phosphorylated at Ser31.

Species predicted to react based on 100% sequence homology:

Mouse

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to the sequence surrounding Ser31 of mouse tyrosine hydroxylase. Antibodies are purified by protein A and peptide affinity chromatography.

Background

Tyrosine hydroxylase (TH) catalyzes the rate-limiting step in the synthesis of the neurotransmitter dopamine and other catecholamines. TH functions as a tetramer, with each subunit composed of a regulatory and catalytic domain, and exists in several different isoforms (1,2). This enzyme is required for embryonic development since TH knockout mice die before or at birth (3). Levels of transcription, translation and post-translational modification regulate TH activity. The amino-terminal regulatory domain contains three serine residues: Ser9, Ser31, and Ser40. Phosphorylation at Ser40 by PKA positively regulates the catalytic activity of TH (4-6). Phosphorylation at Ser31 by CDK5 also increases the catalytic activity of TH through stabilization of TH protein levels (7-9).

Background References

1. Kumer, S.C. and Vrana, K.E. (1996) *J Neurochem* 67, 443-62.
2. Bodeau-Péan, S. et al. (1999) *J Biol Chem* 274, 3469-75.
3. Kobayashi, K. et al. (1995) *J Biol Chem* 270, 27235-43.
4. Lew, J.Y. et al. (1999) *Mol Pharmacol* 55, 202-9.
5. Vié, A. et al. (1999) *J Biol Chem* 274, 16788-95.
6. Lindgren, N. et al. (2000) *J Neurochem* 74, 2470-7.
7. Moy, L.Y. and Tsai, L.H. (2004) *J Biol Chem* 279, 54487-93.
8. Lehmann, I.T. et al. (2006) *J Biol Chem* 281, 17644-51.
9. Saraf, A. et al. (2007) *J Biol Chem* 282, 573-80.

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

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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