Store at –20°C

#2792

Tyrosine Hydroxylase Antibody

Cell Signaling TECHNOLOGY®

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

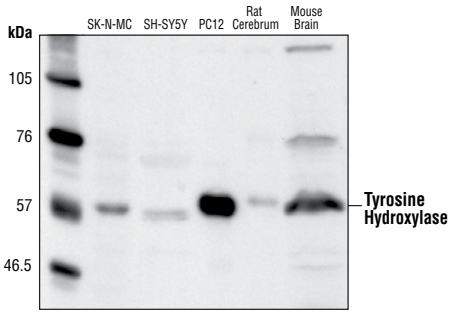
Entrez-Gene ID #7054
Swiss-Prot Acc. #P07101

Applications	Species Cross-Reactivity*	Molecular Wt.	Source
W Endogenous	H, M, R	50-60 kDa	Rabbit**

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 posttranslational 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).

Specificity/Sensitivity: Tyrosine Hydroxylase Antibody detects endogenous levels of total tyrosine hydroxylase.

Source/Purification: Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to the amino-terminal sequence of human tyrosine hydroxylase. Antibodies are purified by protein A and peptide affinity chromatography.



Western blot analysis of extracts from SK-N-MC (human), SH-SY5Y (human) and PC12 (rat) cells as well as rat cerebrum and mouse whole brain tissue, using Tyrosine Hydroxylase Antibody.

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.*

***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

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

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.

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.

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.