Revision 3

Store at -20C

#13106

Tyrosine Hydroxylase (A8Y7R) Rabbit mAb

Cell Signaling TECHNOLOGY®

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, W-S, IF-F, IF-IC	H M R	Endogenous	55-60	Rabbit IgG	#P07101	7054

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Simple Western™	1:50 - 1:250
Immunofluorescence (Frozen)	1:400
Immunofluorescence (Immunocytochemistry)	1:400

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.

Specificity/Sensitivity

Tyrosine Hydroxylase (A8Y7R) Rabbit mAb recognizes endogenous levels of total tyrosine hydroxylase protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues near the carboxy terminus of human tyrosine hydroxylase protein.

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 nonfat dry milk, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **W-S:** Simple Western™ **IF-F:** Immunofluorescence (Frozen) **IF-IC:** Immunofluorescence (Immunocytochemistry)

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat

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Limited Uses

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