

Affinity Purified Rabbit Anti-Phospho-Tyrosine Hydroxylase (S31) Certificate of Analysis

ORDERING INFORMATION

Catalog Number: PPS088

Lot Number: 1446784

Size: 100 μ L (sufficient for 10 mini-blot)

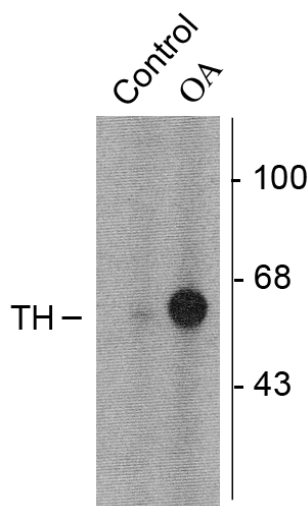
Storage: ≤ -20 °C

Specificity: mouse and rat ~62 kDa TH phosphorylated at S31

Immunogen: Phosphopeptide corresponding to amino acid residues surrounding the phospho-S31 of rat TH

Ig Type: rabbit IgG

Applications: Western blot
Immunofluorescence
Immunohistochemistry



Western blot of PC-12 cells incubated in the absence (Control) and presence of okadaic acid (OA, 1 μ M for 60 minutes) showing specific immunolabeling of the approximately 62 kDa Tyrosine Hydroxylase phosphorylated at S31.

Description

Rat tyrosine hydroxylase (TH) is a pterin-dependent monooxygenase that catalyzes the hydroxylation of tyrosine to DOPA through the use of a non-heme iron. It is a 55 kDa, 498 amino acid (aa) α -helical protein that runs anomalously at 62 kDa in SDS-PAGE. The molecule contains a 164 aa N-terminal regulatory region and a 334 aa C-terminal catalytic domain. Its activity is regulated at the post-transcriptional level by phosphorylation of serine and feedback by catecholamines. Four serines are known to be phosphorylated at aa positions 8, 19, 31, and 40. Different kinases contribute to different phosphorylation patterns. For example, MAPKAPK-2 and CaMKII act on S19 and S40, PKA phosphorylates only at S40, while Cdk5 phosphorylates S31. Variable site phosphorylations have variable effects. S40 phosphorylation blocks catecholamine feedback inhibition. Subsequent phosphorylations at S19 or S31 likely stabilize an otherwise unstable enzyme phosphorylated only at S40, contributing to increased enzyme activity. Phosphorylation at S8 is likely to be physiologically unimportant.

Preparation

Prepared from rabbit serum by affinity purification via sequential chromatography on phospho- and dephospho-peptide columns.

Formulation

100 μ L in 10 mM HEPES (pH 7.5), 150 mM NaCl, 100 μ g/mL BSA and 50% glycerol.

Storage

For long-term storage, ≤ -20 °C is recommended. Product is stable at ≤ -20 °C for at least 1 year.

Specificity

This antibody is specific for the 62 kDa TH in Western blots of PC-12 cell lysates.

Applications

Western blot - 1:1000

Immunofluorescence - 1:1000 (frozen sections)

Immunohistochemistry - 1:1000 (frozen sections)

Optimal dilutions should be determined by each laboratory for each application.

References

1. Grima, B. *et al.* (1985) Proc. Natl. Acad. Sci. USA **82**:617.
2. Frantom, P.A. *et al.* (2006) Biochemistry **45**:2372.
3. Moy, L.Y. and L-H. Tsai (2004) J. Biol. Chem. **279**:54487.
4. Royo, M. *et al.* (2005) Arch. Biochem. Biophys. **434**:266.
5. Witkovsky, P. *et al.* (2000) J. Chem. Neuroanat. **19**:105.

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