

Phospho-Tyrosine Hydroxylase (Ser40) Biotinylated Peptide

✓ 1.25 ml at 6 µM



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This product is for *in vitro* research use only and is not intended for use in humans or animals.

Description: This biotinylated peptide contains the residues surrounding Ser40 of Tyrosine Hydroxylase. The serine residue in the peptide has been chemically phosphorylated in the course of peptide synthesis. This phosphopeptide was generated for use as a positive control in kinase assays (HTScan® PAK1 Kinase Assay Kit #7633, HTScan® PAK2 Kinase Assay Kit #7636, CaMK1β kinase #7452, CaMK1β kinase #7454, Chk2 kinase #7434, MAPKAPK-3 kinase #7490, MAPKAPK-5 #7659, PAK1 kinase #7632, PAK2 kinase #7635), but it may also serve as a positive control in other heterogeneous or homogeneous kinase assays.

Peptide Core Sequence: RRQS*LIE

Molecular Weight: 2406 daltons

Quality Control: The quality of the biotinylated peptide was evaluated by reverse-phase HPLC and by mass spectrometry.

Directions for Use: This phosphorylated peptide can be detected with the Phospho-Tyrosine Hydroxylase (Ser40) Antibody #2791. A sample kinase assay protocol is attached.

Storage: Supplied in 0.0001% DMSO. Store at -20°C.

Companion Products:

HTScan® PAK1 Kinase Assay Kit #7633

HTScan® PAK2 Kinase Assay Kit #7636

CaMKI-β Kinase #7452

CaMKI-δ Kinase #7454

Chk2 Kinase #7434

MAPKAPK-3 Kinase #7490

MAPKAPK-5 Kinase #7659

PAK1 Kinase #7632

PAK2 Kinase #7635

Phospho-Tyrosine Hydroxylase (Ser40) Antibody #2791

Tyrosine Hydroxylase (Ser40) Biotinylated Peptide #1132

Protocol for Serine/Threonine Kinase Assay

IMPORTANT: Use of an automated microplate washer as well as centrifugation of plates when appropriate, greatly improves reproducibility.

A Additional Solutions and Reagents (Not included)

1. **Wash Buffer:** 1X PBS, 0.05% Tween-20 (PBS/T)
2. Bovine Serum Albumin (BSA)
3. **Stop Buffer:** 50 mM EDTA pH 8
4. Kinase Buffer (10X) #9802
5. ATP (10 mM) #9804
6. Active kinase (See companion products)
7. Primary antibody (See companion products)

B Suggested Protocol for 100 Assays

1. Add 100 μ l 10 mM ATP to 1.25 ml 6-12 μ M substrate peptide. Adjust the mixture with dH_2O to 2.5 ml to make 2X ATP/substrate cocktail ([ATP]=400 μ M, [substrate] = 3-6 μ M).
2. Transfer enzyme from $-80^{\circ}C$ to ice. Allow enzyme to thaw on ice.
3. **Microcentrifuge briefly at $4^{\circ}C$ to bring liquid to the bottom of the vial. Return immediately to ice.**
4. Add 1 ml 10X kinase buffer [250 mM Tris-HCl pH 7.5, 100 mM $MgCl_2$, 1 mM Na_3VO_4 , 50 mM β -glycerophosphate, 20 mM dithiothreitol (DTT)] to 1.5 ml dH_2O to make 2.5 ml 4X reaction buffer.
5. Dilute enzyme in 1.25 ml of 4X reaction buffer to make 4X reaction cocktail ([enzyme]=0.8-8.0 ng/ μ l in 4X reaction cocktail).
6. Add 12.5 μ l of the 4X reaction cocktail to 12.5 μ l/well of prediluted compound of interest (usually around 10 μ M) and incubate for 5 minutes at room temperature.
7. Add 25 μ l of 2X ATP/substrate cocktail to 25 μ l/well preincubated reaction cocktail/compound.

Final Assay Conditions for a 50 μ l Reaction

25 mM Tris-HCl (pH7.5)
10 mM $MgCl_2$
5 mM β -glycerophosphate
0.1 mM Na_3VO_4
2 mM DTT
200 μ M ATP
1.5-3 μ M peptide
10-100 ng kinase

8. Incubate reaction plate at room temperature for 30 minutes.
9. Add 50 μ l/well Stop Buffer (50 mM EDTA, pH 8) to stop the reaction.
10. Transfer 25 μ l of each reaction to a 96-well streptavidin-coated plate containing 75 μ l dH_2O /well and incubate at room temperature for 60 minutes.
11. Wash three times with 200 μ l/well PBS/T.
12. Dilute primary antibody in PBS/T with 1% BSA. *Add 100 μ l/well primary antibody.(1:500 dilution for mouse mAb or 1:1000 dilution for rabbit mAb or polyclonal antibody)
13. Incubate at $37^{\circ}C$ for 120 minutes.
14. Wash three times with 200 μ l/well PBS/T.
15. For DELFIA[®] or Colorimetric ELISA detection methods please use the following protocols.

DELFIA[®] is a registered trademark of PerkinElmer Life Sciences

DELFIA[®] Assay

1. Prepare appropriate dilution of Europium labeled secondary antibody in PBS/T with 1% BSA (1:500 dilution for anti-mouse IgG or 1:1000 for anti-rabbit IgG).
2. Add 100 μ l/well secondary antibody solution.
3. Incubate at room temperature for 30 minutes.
4. *Wash five times with 200 μ l/well PBS/T.
5. Add 100 μ l/well DELFIA[®] Enhancement Solution.
6. Incubate at room temperature for 5 minutes.
7. Read plate using a Time Resolved Fluorescent plate reader using the following settings;
 - a. Excitation Filter: 340 nm
 - b. Emission Filter: 615 nm
 - c. Delay**: 400 μ s
 ** Delay time is the delay from the excitation pulse to the beginning of the measurement.

Companion Products for DELFIA[®]

DELFIA[®] Europium-labeled Anti-mouse IgG (PerkinElmer Life Sciences #AD0124)
DELFIA[®] Europium-labeled Anti-rabbit IgG (PerkinElmer Life Sciences #AD0105)
DELFIA[®] Enhancement Solution (PerkinElmer Life Sciences #1244-105)
DELFIA[®] Streptavidin coated, 96-well, yellow plate (PerkinElmer Life Sciences AAAND-0005)

Colorimetric ELISA Assay

1. Prepare appropriate dilution of HRP labeled secondary antibody in PBS/T with 1% BSA (1:500 dilution for anti-mouse IgG or 1:1000 for anti-rabbit IgG).
2. Add 100 μ l/well secondary antibody solution.
3. Incubate at room temperature for 30 minutes.
4. *Wash five times with 200 μ l/well PBS/T.
5. Add 100 μ l/well TMB substrate.
6. Incubate at room temperature for 15 minutes.
7. Add 100 μ l/well of stop solution.
8. Mix well.
9. Read the absorbance at 450 nm with a microtiter plate reader.

Companion Products For Colorimetric ELISA Assay

Anti-mouse IgG, HRP Linked Antibody #7076
Anti-rabbit IgG, HRP Linked Antibody #7074
TMB Solution #7004
Stop Solution #7002

* **NOTE:** Use of an automated microplate washer as well as centrifugation of plates when appropriate, greatly improves reproducibility.

Please contact Cell Signaling Technology for HTS-ready antibodies (PBS formulated and carrier-free), and detailed peptide substrate sequence information.
Email: drugdiscovery@cellsignal.com