

GSK-3 α/β (Ser21/9) Biotinylated Peptide

✓ 1.25 ml at 6 μ M



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rev. 02/06/08

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 Ser21 of GSK-3 α or Ser9 of GSK-3 β . It was generated for use in CST's HTScan® kinase assay kits, but may also serve as a substrate in other heterogeneous or homogeneous kinase assays.

Peptide Core Sequence: RTSS*FAE

Molecular Weight: 1717 daltons

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

Directions for Use: The phosphorylated form of the peptide can be detected with the Phospho-GSK-3 α/β (Ser21) (36E9) Rabbit mAb #9316.

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

Companion Products:

Serine/Threonine Kinase Substrate Screening Kit #7400

Phospho-GSK-3 α (Ser21) (36E9) Rabbit mAb #9316

PKAC- β Kinase #7688

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