

## DESCRIPTION

<b>Species Reactivity</b>	Human/Mouse/Rat
<b>Specificity</b>	Detects human, mouse, and rat GSK-3 $\alpha$ when phosphorylated at S21. This antibody does not detect phosphorylated GSK-3 $\beta$ .
<b>Source</b>	Polyclonal Rabbit IgG
<b>Purification</b>	Antigen Affinity-purified
<b>Immunogen</b>	Phosphopeptide containing human, mouse, and rat GSK-3 $\alpha$ S21 site
<b>Formulation</b>	Lyophilized from a 0.2 $\mu$ m filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 $\mu$ m filtered solution in PBS.

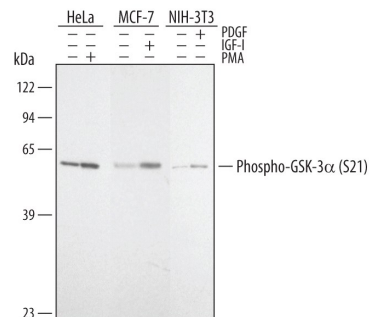
## APPLICATIONS

**Please Note:** Optimal dilutions should be determined by each laboratory for each application. *General Protocols* are available in the *Technical Information* section on our website.

	Recommended Concentration	Sample
<b>Western Blot</b>	1 $\mu$ g/mL	See Below
<b>Immunohistochemistry</b>	5-15 $\mu$ g/mL	See Below

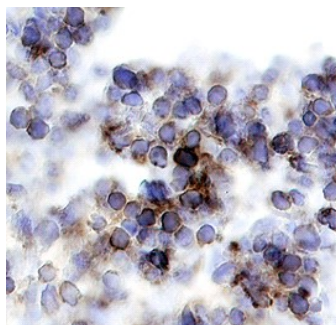
## DATA

### Western Blot



**Detection of Human and Mouse Phospho-GSK-3 $\alpha$  (S21) by Western Blot.** Western blot shows lysates of HeLa human cervical epithelial carcinoma cell line untreated (-) or treated (+) with 200 nM PMA for 20 minutes and MCF-7 human breast cancer cell line untreated or treated with 100 ng/mL Recombinant Human IGF-1 (Catalog # 291-G1) for 15 minutes and NIH-3T3 mouse embryonic fibroblast cell line untreated or treated with 10 ng/mL PMA for 20 minutes. PVDF membrane was probed with 1  $\mu$ g/mL of Human/Mouse/Rat Phospho-GSK-3 $\alpha$  (S21) Antigen Affinity-purified Polyclonal Antibody (Catalog # AF4125), followed by HRP-conjugated Anti-Rabbit IgG Secondary Antibody (Catalog # HAF008). A specific band was detected for Phospho-GSK-3 $\alpha$  (S21) at approximately 51 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

### Immunohistochemistry



**GSK-3 $\alpha$  in Human Thymus.** GSK-3 $\alpha$  was detected in immersion fixed paraffin-embedded sections of human thymus using 5  $\mu$ g/mL Human/Mouse/Rat Phospho-GSK-3 $\alpha$  (S21) Antigen Affinity-purified Polyclonal Antibody (Catalog # AF4125) overnight at 4 °C. Before incubation with the primary antibody tissue was subjected to heat-induced epitope retrieval using Antigen Retrieval Reagent-Basic (Catalog # CTS013). Tissue was stained with the Anti-Rabbit HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS005) and counterstained with hematoxylin (blue). View our protocol for [Chromogenic IHC Staining of Paraffin-embedded Tissue Sections](#).

## PREPARATION AND STORAGE

<b>Reconstitution</b>	Reconstitute at 0.2 mg/mL in sterile PBS.
<b>Shipping</b>	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
<b>Stability &amp; Storage</b>	<p><b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b></p> <ul style="list-style-type: none"> <li>• 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>• 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>• 6 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

## BACKGROUND

Glycogen Synthase Kinase-3 (GSK-3) is a serine/threonine kinase initially identified as an inhibitor of glycogen synthase. Two isoforms (GSK-3 $\alpha$  and GSK-3 $\beta$ ) share 85% amino acid identity. GSK-3 $\alpha$  is inhibited by phosphorylation at S21 by Akt and other kinases. Deregulated GSK-3 has been implicated in several diseases including type II diabetes, Alzheimer's disease, bipolar disorder, and cancer.