**Phospho-PAK1 (Thr423)/PAK2 (Thr402) Antibody**

**Background:** The p21-activated kinase (PAK) family of serine/threonine kinases is engaged in multiple cellular processes, including cytoskeletal reorganization, MAPK signaling, apoptotic signaling, control of phagocyte NADPH oxidase and growth factor-induced neurite outgrowth (1,2). Several mechanisms that induce PAK activity have been reported. Binding of Rac/cdc42 to the CRIB (or PBD) domain near the amino terminus of PAK causes autophosphorylation and conformational changes in PAK (1). Phosphorylation of PAK1 at Thr423 by PDK induces activation of PAK1 (3). Several autophosphorylation sites have been identified, including serines 199 and 204 of PAK1 and serines 192 and 197 of PAK2 (4,5). Because the autophosphorylation sites are located in the amino-terminal inhibitory domain, it has been hypothesized that modification in this region prevents the kinase from reverting to an inactive conformation (6). Research indicates that phosphorylation of Ser144 of PAK1 or Ser139 of PAK3 (located in the kinase inhibitory domain) affects kinase activity (7). Phosphorylation of Ser21 of PAK1 or Ser20 of PAK2 regulates binding with the adaptor protein Nck (8). More recently identified family members including PAK4, PAK5 and PAK6 have lower sequence similarity with PAK1-3 in the amino-terminal regulatory region (9). Phosphorylation of Ser474 of PAK4, a site analogous to Thr423 of PAK1, may play a pivotal role in regulating the activity and function of PAK4 (10).

**Specificity/Sensitivity:** Phospho-PAK1 (Thr423)/PAK2 (Thr402) Antibody detects endogenous PAK1, PAK2 and PAK4 only when phosphorylated at Thr423, Thr402 and Thr421, respectively. The antibody does not cross-react with phosphorylated PAK3, PAK5 or PAK6. The antibody does cross-react with phospho-Mat1 (Thr183) or phospho-Mat2 (Thr180).

**Source/Purification:** Polyclonal antibodies are produced by immunizing animals with a synthetic phospho-peptide (KLH-coupled) corresponding to residues surrounding Thr423 of human PAK1. Antibodies are purified by protein A (KLH-coupled) corresponding to residues surrounding Thr423 of human PAK1.

**IMPORTANT:** For Western blots, incubate membrane with diluted antibody in 5% w/v BSA, 1X TBS, 0.1% Tween-20 at 4°C with gentle shaking, overnight.

**Storage:** Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at –20°C. Do not aliquot the antibody.

**Recommended Antibody Dilutions:** Western Blotting 1:1000

**Recommended Application:** Western Blotting

**Recommended Species Cross-Reactivity:**

<table>
<thead>
<tr>
<th>Applications</th>
<th>Species Cross-Reactivity*</th>
<th>Molecular Wt.</th>
<th>Source</th>
<th><strong>Rabbit</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>W Endogenous</td>
<td>H, M, Guinea Pig, (R)</td>
<td>61 to 67 (PAK2), 68 to 74 (PAK1/3)</td>
<td></td>
<td><strong>Rabbit</strong></td>
</tr>
</tbody>
</table>

**Source**


**Background References:**


**Orders**

877-616-CELL (2355) 
orders@cellsignal.com

**Support**

877-678-TECH (8324)  
info@cellsignal.com

**Web**

www.cellsignal.com

**Swiss-Prot Acc.** #5058, 5062, 5063


**EMBO J.** 20, 3906–3917.

**J. Biol. Chem.** 275, 41201–41209.


**J. Biol. Chem.** 274, 8022–8028.

**Cell** 102, 387–397.

**J. Biol. Chem.** 30, 857–862.

**J. Biol. Chem.** 276, 17347–17353.

**J. Biol. Chem.** 217, 6527–6540.

**J. Biol. Chem.** 30, 857–862.

**J. Biol. Chem.** 217, 6527–6540.

**J. Biol. Chem.** 217, 6527–6540.

**J. Biol. Chem.** 217, 6527–6540.

**J. Biol. Chem.** 217, 6527–6540.