Phospho-Akt (Ser473) (D9E) XP® Rabbit mAb

For Research Use Only. Not For Use In Diagnostic Procedures.

**Product Usage Information**

<table>
<thead>
<tr>
<th>Application</th>
<th>Dilution</th>
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<tbody>
<tr>
<td>Western Blotting</td>
<td>1:2000</td>
</tr>
<tr>
<td>Immunoprecipitation</td>
<td>1:50</td>
</tr>
<tr>
<td>Immunohistochemistry (Paraffin)</td>
<td>1:100</td>
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<tr>
<td>Immunofluorescence (Immunocytochemistry)</td>
<td>1:400</td>
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<tr>
<td>Flow Cytometry</td>
<td>1:100</td>
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</tbody>
</table>

**Storage**

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

**Specificity / Sensitivity**

Phospho-Akt (Ser473) (D9E) XP® Rabbit mAb detects endogenous levels of Akt only when phosphorylated at Ser473.

**Species Reactivity:**

- Human, Mouse, Rat, Hamster, Monkey, D. melanogaster, Zebrafish, Bovine
- Chicken, Xenopus, Dog, Pig

**Source / Purification**

Monoclonal antibody is produced by immunizing animals with a synthetic phosphopeptide corresponding to residues around Ser473 of human Akt.

**Background**

Akt, also referred to as PKB or Rac, plays a critical role in controlling survival and apoptosis (1-3). This protein kinase is activated by insulin and various growth and survival factors to function in a wortmannin-sensitive pathway involving PI3 kinase (2,3). Akt is activated by phospholipid binding and activation loop phosphorylation at Thr308 by PDK1 (4) and by phosphorylation within the carboxy terminus at Ser473. The previously elusive PDK2 responsible for phosphorylation of Akt at Ser473 has been identified as a mammalian target of rapamycin (mTOR) in a rapamycin-sensitive complex with raptor (5,6). Akt promotes cell survival by inhibiting apoptosis through phosphorylation and inactivation of several targets, including Bad (7), forkhead transcription factors (8), c-Raf (9), and caspase-9. PTEN phosphatase is a major negative regulator of the PI3 kinase/Akt signaling pathway (10). LY294002 is a specific PI3 kinase inhibitor (11). Another essential Akt function is the regulation of glycolysis through phosphorylation and inactivation of GSK-3α and β (12,13). Akt may also play a role in insulin stimulation of glucose transport (12). In addition to its role in survival and glycosynthesis, Akt is involved in cell cycle regulation by preventing GSK-3-mediated phosphorylation and degradation of cyclin D1 (14) and by negatively regulating the cyclin dependent kinase inhibitors p27 Kip1 (15) and p21 Waf1/Cip1 (16). Akt also plays a critical role in cell growth by directly phosphorylating mTOR in a rapamycin-sensitive complex containing raptor (17). More importantly, Akt phosphorylates and inactivates tuberin (TSC2), an inhibitor of mTOR within the mTOR-raptor complex (18,19).

<table>
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<th>Species Reactivity</th>
<th>Sensitivity</th>
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<td>Phospho-Akt (Ser473) (D9E) XP®</td>
<td>Rabbit mAb</td>
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**Application Key**

| WB, IP, IHC-P, IF-IC, F | H M R Hn Mk Dm Z B |

**Source/Isotype**

- Rabbit IgG

**UniProt ID**

- P31749, P31751, Q9Y243

**Entraz-Gene Id**

- 207, 208, 10000

**Supplied in**

- 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide.

**Vendors**

- Cell Signaling Technology

**Web:**

- info@cellsignal.com
- www.cellsignal.com

**Support:**

- 877-678-TECH (8324)

**Orders:**

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

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**IMPORTANT:** For primary antibodies recommended for western blotting applications, we recommend incubating the membrane with diluted antibody at 4°C with gentle shaking overnight. Please refer to the product-specific protocol for our antibody diluent recommendation.