

**Total Akt2 Matched Antibody Pair II**

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**Species Cross Reactivity:** H M  
**UniProt ID:** #P31751  
**Entrez-Gene Id:** #208

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**For Research Use Only. Not for Use in Diagnostic Procedures.**

| Product Includes                                  | Product # | Quantity | Isotype/Source |
|---------------------------------------------------|-----------|----------|----------------|
| Akt (pan) (C67E7) Rabbit mAb (BSA and Azide Free) | 88800     | 100 µg   | Rabbit IgG     |
| Akt2 (A5J8O) Mouse mAb (BSA and Azide Free)       | 66588     | 100 µg   | Mouse IgG1     |

**Description**

The Total Akt2 Matched Antibody Pair II is ideal for use with immunoassay technologies and high throughput ELISA platforms requiring antibody pairs with specialized or custom antibody labeling. Labels include fluorophores, lanthanides, biotin, and beads. Platforms requiring conjugated Matched Antibody Pairs include MSD, Quanterix Simoa, Alpha Technology (AlphaScreen, AlphaLISA, LANCE, HTRF), and Luminex.

Learn how Matched Antibody Pairs move your projects forward, faster at [cst-science.com/matched-antibody-pairs](http://cst-science.com/matched-antibody-pairs).

**Specificity/Sensitivity**

This kit detects proteins from the indicated species, as determined through in-house testing, but may also detect homologous proteins from other species.

**Storage**

Store at -20°C. *This product will freeze at -20°C so it is recommended to aliquot into single-use vials to avoid multiple freeze/thaw cycles.* A slight precipitate may be present and can be dissolved by gently vortexing. This will not interfere with antibody performance.

**Directions for Use**

Matched Antibody Pairs consist of capture and detection antibodies that bind to non-overlapping epitopes. For specific identification of the capture and detection antibodies in this pair, please refer to the data figure caption. Optimal dilutions/concentrations should be determined by the end user.

**Formulation**

Supplied in 1X PBS (10 mM Na<sub>2</sub>HPO<sub>4</sub>, 3 mM KCl, 2 mM KH<sub>2</sub>PO<sub>4</sub>, and 140 mM NaCl (pH 7.8)). BSA and Azide Free.

**Background**

Akt, also referred to as PKB or Rac, plays a critical role in controlling cell 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 mammalian target of rapamycin (mTOR) in a rapamycin-insensitive complex with rictor and Sin1 (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 PI3K/Akt signaling pathway (10). LY294002 is a specific PI3 kinase inhibitor (11). Another essential Akt function is the regulation of glycogen synthesis 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 glycogen synthesis, Akt is involved in cell cycle regulation by preventing GSK-3β-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 tuberlin (TSC2), an inhibitor of mTOR within the mTOR-raptor complex (18,19).

**Background References**

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