

**PhosphoPlus® CaMKII (Thr286) Antibody Duet**

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

**UniProt ID:** #Q13554, #Q13557, #Q13555, #Q9UQM7  
**Entrez-Gene Id:** 816, 817, 818, 815

| Product Includes                           | Product # | Quantity | Mol. Wt    | Isotype/Source |
|--|-----------|----------|------------|----------------|
| Phospho-CaMKII (Thr286) (D21E4) Rabbit mAb | 12716     | 100 µl   | 60, 50 kDa | Rabbit IgG     |
| CaMKII (pan) (D11A10) Rabbit mAb           | 4436      | 100 µl   | 60, 50 kDa | Rabbit IgG     |

Please visit [cellsignal.com](http://cellsignal.com) for individual component applications, species cross-reactivity, dilutions, protocols, and additional product information.

**Description**

PhosphoPlus® Duets from Cell Signaling Technology (CST) provide a means to assess protein activation status. Each Duet contains an activation-state and total protein antibody to your target of interest. These antibodies have been selected from CST's product offering based upon superior performance in specified applications.

**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.

**Background**

CaMKII is an important member of the calcium/calmodulin-activated protein kinase family, functioning in neural synaptic stimulation and T cell receptor signaling (1,2). CaMKII has catalytic and regulatory domains. Ca<sup>2+</sup>/calmodulin binding to the CaMKII regulatory domain relieves autoinhibition and activates the kinase (3). The activated CaMKII further autophosphorylates at Thr286 to render the kinase constitutively active (3). The threonine phosphorylation state of CaMKII can be regulated through PP1/PKA. PP1 (protein phosphatase 1) dephosphorylates phospho-CaMKII at Thr286. PKA (protein kinase A) prevents phospho-CaMKII (Thr286) dephosphorylation through an inhibitory effect on PP1 (4).

**Background References**

- Hughes, K. et al. (2001) *J Biol Chem* 276, 36008-13.
- Barria, A. et al. (1997) *Science* 276, 2042-5.
- Barkai, U. et al. (2000) *Mol Endocrinol* 14, 554-63.
- Makhinson, M. et al. (1999) *J Neurosci* 19, 2500-10.

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