Revision 1

Store at -20C

#64815

# PhosphoPlus® PRAS40 (Thr246) Antibody Duet

Cell Signaling TECHNOLOGY®

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

| UniProt ID: | Entrez-Gene Id: |
|---|---|
| #Q96B36 | 84335 |

| Product Includes | Product # | Quantity | Mol. Wt | Isotype/Source |
|---|---|---|---|---|
| Phospho-PRAS40 (Thr246) (C77D7) Rabbit mAb | 2997 | 100 µl | 40 kDa | Rabbit IgG |
| PRAS40 (D23C7) XP® Rabbit mAb | 2691 | 100 µl | 40 kDa | Rabbit IgG |

Please visit 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

Many growth factors and hormones induce the phosphoinositide 3-kinase signaling pathway, which results in the activation of downstream effector proteins such as the serine/threonine kinase Akt (1,2). One known Akt substrate is a 40 kDa, proline-rich protein (PRAS40) that binds to 14-3-3 proteins (2). PRAS40 also binds mTOR to transduce Akt signals to the mTOR complex. Inhibition of mTOR signaling stimulates PRAS40 binding to mTOR, which in turn inhibits mTOR activity (3). PRAS40 interacts with raptor in mTOR complex 1 (mTORC1) in insulin-deprived cells and inhibits the activation of the mTORC1 pathway mediated by the cell cycle protein Rheb. Phosphorylation of PRAS40 by Akt at Thr246 relieves PRAS40 inhibition of mTORC1 (4). mTORC1 in turn phosphorylates PRAS40 at Ser183 (5).

## Background References

1. Cantley, L.C. (2002) *Science* 296, 1655-7.
2. Kovacina, K.S. et al. (2003) *J Biol Chem* 278, 10189-94.
3. Vander Haar, E. et al. (2007) *Nat Cell Biol* 9, 316-23.
4. Sancak, Y. et al. (2007) *Mol Cell* 25, 903-15.
5. Oshiro, N. et al. (2007) *J Biol Chem* 282, 20329-39.

## Trademarks and Patents



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