

**PREX1 (D8O8D) Rabbit mAb**

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

**Support:** 877-678-TECH (8324)

**Web:** info@cellsignal.com  
cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

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

<b>Applications:</b> W, IF-IC	<b>Reactivity:</b> H Mk	<b>Sensitivity:</b> Endogenous	<b>MW (kDa):</b> 190, 110	<b>Source/Isotype:</b> Rabbit IgG	<b>UniProt ID:</b> #Q8TCU6	<b>Entrez-Gene Id:</b> 57580
----------------------------------	----------------------------	-----------------------------------	------------------------------	--------------------------------------	-------------------------------	---------------------------------

**Product Usage Information****Application**

Western Blotting  
Immunofluorescence (Immunocytochemistry)

**Dilution**

1:1000  
1:400

**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**

PREX1 (D8O8D) Rabbit mAb recognizes endogenous levels of total PREX1 protein. This antibody will recognize both isoform 1 (190 kDa) and isoform 2 (110 kDa) human PREX1, but has not been observed to cross-react with human PREX2 protein.

**Source / Purification**

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding His770 of human PREX1 protein.

**Background**

Phosphoinositide-3,4,5-triphosphate (PtdIns(3,4,5)P<sub>3</sub>)-dependent Rac exchanger 1 (PREX1) is a Rac-specific GTP-exchange factor (GEF) regulated by heterotrimeric G-protein βγ subunits and the lipid second messenger PtdIns(3,4,5)P<sub>3</sub> (1-4). PREX1 contains two DEP (Dishevelled, Egl-10, and Pleckstrin homology) domains that coordinate heterotrimeric G-protein signaling. It also contains a Dbp-homology domain, which exhibits Rac-GEF activity, and PH and PDZ domains for interacting with upstream and downstream signaling components (1). Originally shown to modulate cellular migration of neutrophils by Rac2 activation (5-8), it is clear that PREX1 plays a broader role in modulating cell migration. PREX1 promotes metastasis of prostate cancer and melanoma cells, affects endothelial junction integrity, and is required for platelet generation and function (9-14). Research studies suggest that PREX1 plays an essential role in mediating ErbB-dependent signaling events in breast cancer by coordinating Rac activation in response to paracrine signals within the tumor microenvironment. Activation of PREX1 downstream of ErbB3 and EGFR chemokine receptors (CXCR4) promotes Rac activation, increased migration, proliferation, tumorigenesis, and metastasis in breast cancer cells (15,16). Consistent with this observation, deletion of PREX1 expression in mice results in resistance to melanoma metastasis (11). Expression of PREX1 in human tumors transplanted into mice inversely correlates with increased tumor progression and poor survival (15). Additional research studies suggest that PREX1 Rac-GEF activity is enhanced by phosphorylation in response to growth factors or hormones, and may require coincident dephosphorylation of two PH domain serine residues. The upstream kinases and precise regulatory mechanism remains elusive (15,17).

**Background References**

1. Welch, H.C. et al. (2002) *Cell* 108, 809-21.
2. Hill, K. et al. (2005) *J Biol Chem* 280, 4166-73.
3. Mayeenuddin, L.H. and Garrison, J.C. (2006) *J Biol Chem* 281, 1921-8.
4. Barber, M.A. et al. (2007) *J Biol Chem* 282, 29967-76.
5. Welch, H.C. et al. (2005) *Curr Biol* 15, 1867-73.
6. Dong, X. et al. (2005) *Curr Biol* 15, 1874-9.
7. Zhao, T. et al. (2007) *J Leukoc Biol* 81, 1127-36.
8. Nie, B. et al. (2010) *Cell Signal* 22, 770-82.
9. Qin, J. et al. (2009) *Oncogene* 28, 1853-63.
10. Wong, C.Y. et al. (2011) *J Biol Chem* 286, 25813-22.
11. Lindsay, C.R. et al. (2011) *Nat Commun* 2, 555.
12. Qian, F. et al. (2012) *Arterioscler Thromb Vasc Biol* 32, 768-77.
13. Naikawadi, R.P. et al. (2012) *Circ Res* 111, 1517-27.
14. Campbell, A.D. et al. (2013) *PLoS One* 8, e53982.
15. Montero, J.C. et al. (2011) *Oncogene* 30, 1059-71.
16. Sosa, M.S. et al. (2010) *Mol Cell* 40, 877-92.
17. Montero, J.C. et al. (2013) *Cell Signal* 25, 2281-9.

**Species Reactivity**

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

**Western Blot Buffer**

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

**Applications Key**

**W:** Western Blotting **IF-IC:** Immunofluorescence (Immunocytochemistry)

**Cross-Reactivity Key**

**H:** Human **Mk:** Monkey

**Trademarks and Patents**

Cell Signaling Technology is a trademark of Cell Signaling Technology, Inc.

XP is a registered trademark of Cell Signaling Technology, Inc.

All other trademarks are the property of their respective owners. Visit [cellsignal.com/trademarks](http://cellsignal.com/trademarks) for more information.

**Limited Uses**

Except as otherwise expressly agreed in a writing signed by a legally authorized representative of CST, the following terms apply to Products provided by CST, its affiliates or its distributors. Any Customer's terms and conditions that are in addition to, or different from, those contained herein, unless separately accepted in writing by a legally authorized representative of CST, are rejected and are of no force or effect.

Products are labeled with For Research Use Only or a similar labeling statement and have not been approved, cleared, or licensed by the FDA or other regulatory foreign or domestic entity, for any purpose. Customer shall not use any Product for any diagnostic or therapeutic purpose, or otherwise in any manner that conflicts with its labeling statement. Products sold or licensed by CST are provided for Customer as the end-user and solely for research and development uses. Any use of Product for diagnostic, prophylactic or therapeutic purposes, or any purchase of Product for resale (alone or as a component) or other commercial purpose, requires a separate license from CST. Customer shall (a) not sell, license, loan, donate or otherwise transfer or make available any Product to any third party, whether alone or in combination with other materials, or use the Products to manufacture any commercial products, (b) not copy, modify, reverse engineer, decompile, disassemble or otherwise attempt to discover the underlying structure or technology of the Products, or use the Products for the purpose of developing any products or services that would compete with CST products or services, (c) not alter or remove from the Products any trademarks, trade names, logos, patent or copyright notices or markings, (d) use the Products solely in accordance with CST Product Terms of Sale and any applicable documentation, and (e) comply with any license, terms of service or similar agreement with respect to any third party products or services used by Customer in connection with the Products.