

#3414 Store at -20°C

HIF-1 β /ARNT (C15A11) Rabbit mAb

✓ 100 μ l
(10 western blots)



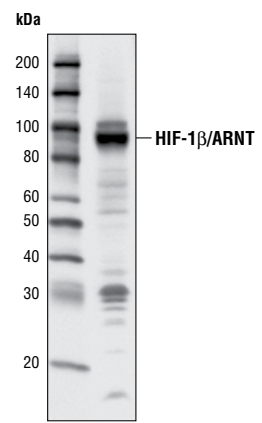
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This product is intended for research purposes only. This product is not intended to be used for therapeutic or diagnostic purposes in humans or animals.

Applications	Species Cross-Reactivity*	Molecular Wt.	Isotype
W, IP, IF-IC Endogenous	H, Mk	87 kDa	Rabbit IgG**

Background: Hypoxia-inducible factor 1 (HIF1) is a heterodimeric transcription factor that plays a critical role in the cellular response to hypoxia (1). The HIF1 complex consists of two subunits, HIF-1 α and HIF-1 β , which are basic helix-loop-helix proteins of the PAS (Per, ARNT, Sim) family (2). HIF1 regulates the transcription of a broad range of genes that facilitate responses to the hypoxic environment, including genes regulating angiogenesis, erythropoiesis, cell cycle, metabolism and apoptosis. The widely expressed HIF-1 α is typically degraded rapidly in normoxic cells by the ubiquitin/proteasomal pathway. Under normoxic conditions, HIF-1 α is proline hydroxylated leading to a conformational change that promotes binding to the von Hippel Lindau protein (VHL) E3 ligase complex; ubiquitination and proteasomal degradation follows (3,4). Both hypoxic conditions and chemical hydroxylase inhibitors (such as desferrioxamine and cobalt) inhibit HIF-1 α degradation and lead to its stabilization. In addition, HIF-1 α can be induced in an oxygen-independent manner by various cytokines through the PI3K-AKT-mTOR pathway (5-7).



Western blot analysis of extracts from HepG2 cells using HIF-1 β /ARNT (C15A11) Rabbit mAb.

HIF-1 β is also known as AhR nuclear translocator (ARNT) due to its ability to partner with the aryl hydrocarbon receptor (AhR) to form a heterodimeric transcription factor complex (8). Together with AhR, HIF-1 β plays an important role in xenobiotics metabolism (8). In addition, a chromosomal translocation leading to a TEL-ARNT fusion protein is associated with acute myeloblastic leukemia (9). Studies also found that ARNT/HIF-1 β expression levels decrease significantly in pancreatic islets from patients with type 2 diabetes, suggesting that HIF-1 β plays an important role in pancreatic β -cell function (10).

Specificity/Sensitivity: HIF-1 β /ARNT (C15A11) Rabbit mAb detects endogenous levels of total HIF-1 β /ARNT protein.

Source/Purification: Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to the sequence of human HIF-1 β /ARNT.



Confocal immunofluorescent analysis of MCF-7 cells using HIF-1 β /ARNT (C15A11) Rabbit mAb (green). Actin filaments have been labeled with DY-554 phalloidin (red).

Entrez-Gene ID #405
Swiss-Prot Acc. #P27540

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

*Species cross-reactivity is determined by western blot.

**Anti-rabbit secondary antibodies must be used to detect this antibody.

Recommended Antibody Dilutions:

Western blotting	1:1000
Immunoprecipitation	1:50
Immunofluorescence (IF-IC)	1:800

For application specific protocols please see the web page for this product at www.cellsignal.com.

Please visit www.cellsignal.com for a complete listing of recommended companion products.

Background References:

- (1) Sharp, F.R. and Bernaudin, M. (2004) *Nat Rev Neurosci* 5, 437-48.
- (2) Wang, G.L. et al. (1995) *Proc Natl Acad Sci U S A* 92, 5510-4.
- (3) Jaakkola, P. et al. (2001) *Science* 292, 468-72.
- (4) Maxwell, P.H. et al. (1999) *Nature* 399, 271-5.
- (5) Fukuda, R. et al. (2002) *J Biol Chem* 277, 38205-11.
- (6) Jiang, B.H. et al. (2001) *Cell Growth Differ* 12, 363-9.
- (7) Laughner, E. et al. (2001) *Mol Cell Biol* 21, 3995-4004.
- (8) Walisser, J.A. et al. (2004) *Proc Natl Acad Sci USA* 101, 16677-82.
- (9) Salomon-Nguyen, F. et al. (2000) *Proc Natl Acad Sci USA* 97, 6757-62.
- (10) Gunton, J.E. et al. (2005) *Cell* 122, 337-49.

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

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Applications Key: W—Western IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E-P—ELISA-Peptide
Species Cross-Reactivity Key: H—human M—mouse R—rat Hm—hamster Mk—monkey Mi—mink C—chicken Dm—D. melanogaster X—Xenopus Z—zebrafish B—bovine
 Dg—dog Pg—pig Sc—S. cerevisiae Ce—C. elegans Hr—Horse All—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.