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## HIF-1 $\alpha$ (D1S7W) XP<sup>®</sup> Rabbit mAb (Alexa Fluor<sup>®</sup> 647 Conjugate)

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

<b>Applications:</b> FC-FP	<b>Reactivity:</b> H M Mk	<b>Sensitivity:</b> Endogenous	<b>Source/Isotype:</b> Rabbit IgG	<b>UniProt ID:</b> #Q16665	<b>Entrez-Gene Id:</b> 3091
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### Product Usage Information

#### Application

Flow Cytometry (Fixed/Permeabilized)

#### Dilution

1:50

### Storage

Supplied in PBS (pH 7.2), less than 0.1% sodium azide and 2 mg/ml BSA. Store at 4°C. Do not aliquot the antibody. Protect from light. Do not freeze.

### Specificity/Sensitivity

HIF-1 $\alpha$  (D1S7W) XP<sup>®</sup> Rabbit mAb (Alexa Fluor<sup>®</sup> 647 Conjugate) recognizes endogenous levels of total HIF-1 $\alpha$  protein. This antibody does not cross-react with HIF-2 $\alpha$  protein.

### Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Leu478 of human HIF-1 $\alpha$  protein.

### Description

This Cell Signaling Technology antibody is conjugated to Alexa Fluor<sup>®</sup> 647 fluorescent dye and tested in-house for direct flow cytometric analysis in human cells. This antibody is expected to exhibit the same species cross-reactivity as the unconjugated HIF-1 $\alpha$  (D1S7W) XP<sup>®</sup> Rabbit mAb #36169.

### 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 $\alpha$  and HIF-1 $\beta$ , 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 $\alpha$  is typically degraded rapidly in normoxic cells by the ubiquitin/proteasomal pathway. Under normoxic conditions, HIF-1 $\alpha$  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 $\alpha$  degradation and lead to its stabilization. In addition, HIF-1 $\alpha$  can be induced in an oxygen-independent manner by various cytokines through the PI3K-AKT-mTOR pathway (5-7).

HIF-1 $\beta$  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 $\beta$  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 $\beta$  expression levels decrease significantly in pancreatic islets from patients with type 2 diabetes, suggesting that HIF-1 $\beta$  plays an important role in pancreatic  $\beta$ -cell function (10).

### 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 U S A* 101, 16677-82.
9. Salomon-Nguyen, F. et al. (2000) *Proc Natl Acad Sci U S A* 97, 6757-62.
10. Gunton, J.E. et al. (2005) *Cell* 122, 337-49.

### Species Reactivity

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

### Applications Key

**FC-FP:** Flow Cytometry (Fixed/Permeabilized)

### Cross-Reactivity Key

**H:** Human **M:** Mouse **Mk:** Monkey

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