

# PRODUCT INFORMATION



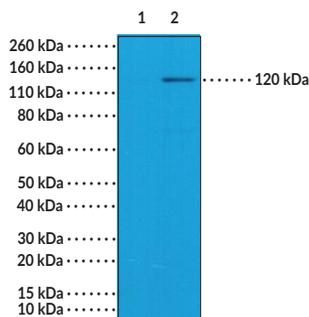
## HIF-1 $\alpha$ (human) Monoclonal Antibody (Clone RM242)

Item No. 32196

### Overview and Properties

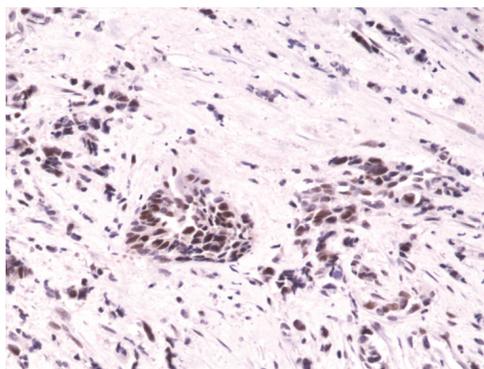
<b>Contents:</b>	This vial contains 100 $\mu$ l of protein A-affinity purified monoclonal antibody.
<b>Synonyms:</b>	ARNT-interacting Protein, Hypoxia-Inducible Factor-1 $\alpha$
<b>Immunogen:</b>	Peptide corresponding to human HIF-1 $\alpha$
<b>Species Reactivity:</b>	(+) Human
<b>Form:</b>	Liquid
<b>Storage:</b>	-20°C (as supplied)
<b>Stability:</b>	$\geq$ 1 year
<b>Storage Buffer:</b>	PBS with 50% glycerol, 1% BSA, and 0.09% sodium azide
<b>Clone:</b>	RM242
<b>Host:</b>	Rabbit
<b>Isotype:</b>	IgG
<b>Applications:</b>	Immunohistochemistry (IHC) and Western blot (WB); the recommended starting dilution for IHC is 1:500-1:1,000 and 1:1,000-1:2,000 for WB. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

### Images



Lane 1: Jurkat cell lysate (untreated)  
Lane 2: Jurkat cell lysate (treated)

WB of Jurkat Cell Lysate Untreated and Treated with Cobalt(II) Chloride (CoCl<sub>2</sub>) using HIF-1 $\alpha$  (human) Monoclonal Antibody (Clone RM242) at a Dilution of 1:1,000. This showed that HIF-1 $\alpha$  (~120 kDa) expression was induced by CoCl<sub>2</sub> in Jurkat cells.



Immunohistochemical staining of formalin-fixed and paraffin-embedded human breast cancer tissue sections using HIF-1 $\alpha$  (human) Monoclonal Antibody (Clone RM242) at a dilution of 1:1,000 dilution.

WARNING  
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA  
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY  
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## Description

Hypoxia-Inducible Factor-1 $\alpha$  (HIF-1 $\alpha$ ) is a transcription factor subunit that belongs to the basic helix-loop-helix PER-ARNT-SIM (bHLH-PAS) protein family.<sup>1,2</sup> It contains bHLH and PAS domains that mediate DNA binding and heterodimerization with the HIF-1 $\beta$  subunit, an oxygen-dependent degradation (ODD) domain that is hydroxylated by prolyl hydroxylase in the presence of oxygen to target HIF-1 $\alpha$  for proteasomal degradation, and N- and C-terminal transactivation domains responsible for regulating the expression of HIF-1 target genes.<sup>2,3</sup> Under hypoxic conditions, HIF-1 $\alpha$  is stabilized, accumulates in the cytoplasm, and is translocated to the nucleus where it forms a heterodimer with HIF-1 $\beta$  and induces the expression of genes involved in maintaining cellular oxygen homeostasis.<sup>1,2,4,5</sup> It is also involved in angiogenesis, glucose utilization, and pH regulation under hypoxic conditions, including in the tumor microenvironment.<sup>6</sup> HIF-1 $\alpha$  is overexpressed in a variety of cancer cell lines where it promotes survival of cancer cells and increases invasiveness under hypoxic conditions and, *in vivo*, overexpression is associated with aggressiveness and progression of various cancers and poor disease-free survival.<sup>6-9</sup> Homozygous knockout of HIF-1 $\alpha$  is embryonic lethal due to disruptions in vascular development but conditional knockout models have demonstrated a role for HIF-1 $\alpha$  in inflammation, immunity, and osteogenesis.<sup>6</sup> Cayman's HIF-1 $\alpha$  (human) Monoclonal Antibody (Clone RM242) can be used for immunohistochemistry (IHC) and Western blot (WB) applications. The antibody recognizes HIF-1 $\alpha$  at approximately 120 kDa from human samples.

## References

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