Anti-HIF1α
Catalog# SMC-184C/D
Size: 25/100µg

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Product	**Mouse anti-HIF1α antibody; monoclonal**
Clone	**ESEE122**
Immunogen	**Recombinant fragment corresponding to amino acids 329-530**
Host and Subclass	**Mouse Monoclonal; 1gG_1**
Applications	**WB (weak), ELISA, ICC, IF, IHC-Fr, IHC-P**
Specificity	**This antibody is specific for HIF-1 alpha.**
Species cross-reactivity	**Human, Mouse, Rat, cow**
Format	**Protein G Purified. In PBS pH7.4, 50% glycerol and 0.09% sodium azide.**
Concentration and working dilution	**1mg/mL; 1:1000-1:8000 (IHC), 8-12ug/mL (ICC/ IF)**
Storage and stability	**-20˚C; 1 year+; shipped on cold packs or ambient**

Scientific Background

Hypoxia-inducible factor 1 (HIF1) is a heterodimeric transcription factor that plays a critical role in the cellular response of hypoxia (1). The HIF1 complex consists of two subunits, HIF1-Alpha and HIF1-Beta, which are basic helix-loop-helix proteins of the PAS 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-1α is typically degraded rapidly in normoxic cells by the ubiquitin/proteasomal pathway. Under normoxic conditions, HIF-1α is proline hydroxylated leading to a conformational change that promotes binding to the von Hippel Lindau protein (VLH) E3 ligase complex; ubiquitination and proteasomal degradation follows (3, 4). Both hypoxic conditions and chemical hydroxylase inhibitors (such as desferrioxamine and cobalt) inhibit HIF-1α degradation and lead to its stabilization. In addition, HIF-1α can be induced in an oxygen-independent manner by various cytokines through the PI3K-AKT-mTOR pathway (5-7).

Selected 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.

Certificate of Analysis

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1 µg/mL of SMC-184 was sufficient for detection of HIF1α in 20µg of $CoCl_2$-induced Hela cell lysate by colorimetric immunoblot analysis using Goat anti-mouse IgG:HRP as the secondary antibody.

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Material Safety Data Sheet

Anti-HIF1α (Monoclonal Antibody) SMC-184

This product is for *in vitro* research use only and is not intended for use in humans or animals

The below information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. StressMarq shall not be held liable for any damage resulting from handling or from contact with the above product. See the Technical Specification, Packing Slip, Invoice, and Product Catalogue for additional terms and conditions of sale.

Hazardous Ingredients

The physical, chemical and toxicological properties of these components have not been fully investigated. It is recommended that all laboratory personnel follow standard laboratory safety procedures when handling this product. Safety procedures should include wearing OSHA approved safety glasses, gloves and protective clothing. Direct physical contact with this product should be avoided.

Known Hazardous Components	CAS Number	Percent
None		

Physical Data

This product consists of rabbit immunoglobulin in PBS in 50% glycerol shipped on gel packs. The physical properties of this product have not been investigated thoroughly.

Fire and Explosion Hazard and Reactivity Data

NOT APPLICABLE

Toxicological Properties

May be harmful by inhalation, ingestion, or skin absorption. The toxicological properties of this product have not been investigated thoroughly. Exercise due caution.

Preventative Measures

Wear chemical safety goggles and compatible chemical-resistant gloves. Avoid inhalation, contact with eyes, skin or clothing.

Spill and Leak Procedures

Observe all federal, state and local environmental regulations.

- Wear protective equipment.
- Absorb on sand or vermiculite and place in closed containers for disposal.
- Dispose or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

First Aid Measures

- If swallowed, wash out mouth with water, provided person is conscious. Call a physician.
- In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. If a rash or other irritation develops, call a physician.
- If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.
- In case of eye contact, flush with copious amounts of water for at least 15 minutes while separating the eyelids with fingers. Call a physician.

Authorized: StressMarq Biosciences Inc.
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