

# p-FKHR (Ser 256): sc-101681

## BACKGROUND

The transcription factor forkhead in rhabdomyosarcoma (FKHR), which is inhibited by insulin and IGF-1, enhances transcription. FKHR has been implicated in alveolar rhabdomyosarcoma, a soft tissue tumor wherein a chromosomal translocation [t(2;12)(q35;q14)] occurs between the FKHR and PAX3 genes, resulting in a novel chimeric protein with abnormal levels of expression. FKHR becomes phosphorylated at Ser 319, Ser 256 and Thr 24 by protein kinase B (PKB) in a phosphoinositide 3-(PI3) kinase/Akt dependent pathway, resulting in the inactivation and subsequent nuclear exit of FKHR. In addition, FKHR becomes phosphorylated at Ser 329, also resulting in decreased FKHR activity and diminished nuclear FKHR concentration. However, phosphorylation of FKHR at Ser 329 is not mediated by a PI3-kinase-dependent pathway, but by an alternate mechanism. Dual-specificity tyrosine-phosphorylated and regulated kinase 1A (DYRK1A), which co-localizes to the same region of the nucleus as FKHR, specifically phosphorylates FKHR at Ser 329 in rabbit skeletal muscle.

## CHROMOSOMAL LOCATION

Genetic locus: FOXO1 (human) mapping to 13q14.11; Foxo1 (mouse) mapping to 3 C.

## SOURCE

p-FKHR (Ser 256) is a rabbit polyclonal antibody raised against a short amino acid sequence containing Ser 256 phosphorylated FKHR of human origin.

## PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

p-FKHR (Ser 256) is recommended for detection of Ser 256 phosphorylated FKHR of human origin, correspondingly phosphorylated Ser 253 of mouse origin and correspondingly phosphorylated Ser 250 of rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for FKHR siRNA (h): sc-35382, FKHR siRNA (m): sc-35383, FKHR shRNA Plasmid (h): sc-35382-SH, FKHR shRNA Plasmid (m): sc-35383-SH, FKHR shRNA (h) Lentiviral Particles: sc-35382-V and FKHR shRNA (m) Lentiviral Particles: sc-35383-V.

Molecular Weight of p-FKHR: 80 kDa.

Positive Controls: NIH/3T3 + serum cell lysate: sc-2248 or FKHR (m): 293 Lysate: sc-178616.

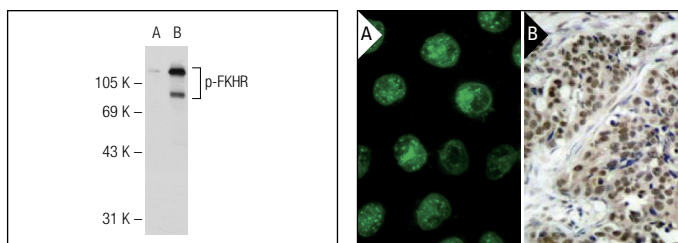
## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## DATA



p-FKHR (Ser 256): sc-101681. Western blot analysis of FKHR phosphorylation in non-transfected: sc-110760 (A) and mouse FKHR transfected: sc-178616 (B) 293 whole cell lysates.

p-FKHR (Ser 256): sc-101681. Immunofluorescence staining of methanol-fixed EGF and serum-treated HeLa cells showing nuclear localization (A). Immunoperoxidase staining of formalin-fixed, paraffin-embedded human breast carcinoma tissue showing nuclear staining (B).

## SELECT PRODUCT CITATIONS

- Lappas, M., et al. 2009. Increased expression of ac-FOXO1 protein in prelabor fetal membranes overlying the cervix: possible role in human fetal membrane rupture. *Reprod. Sci.* 16: 635-641.
- Lappas, M., et al. 2009. Localisation and expression of FoxO1 proteins in human gestational tissues. *Placenta* 30: 256-262.
- Borinstein, S.C., et al. 2011. Investigation of the Insulin-like growth factor-1 signaling pathway in localized Ewing sarcoma: a report from the Children's Oncology Group. *Cancer* 117: 4966-4976.
- Zheng, J.Y., et al. 2011. Tumor necrosis factor- $\alpha$  increases angiotensin-like protein 2 gene expression by activating Foxo1 in 3T3-L1 adipocytes. *Mol. Cell. Endocrinol.* 339: 120-129.
- Lokireddy, S., et al. 2011. Myostatin promotes the wasting of human myoblast cultures through promoting ubiquitin-proteasome pathway-mediated loss of sarcomeric proteins. *Am. J. Physiol., Cell Physiol.* 301: C1316-C1324.
- Zhu, T., et al. 2012. Pyrrolidine dithiocarbamate enhances hepatic glycogen synthesis and reduces FoxO1-mediated gene transcription in type 2 diabetic rats. *Am. J. Physiol. Endocrinol. Metab.* 302: E409-E416.
- Daskalopoulos, E.P., et al. 2012. D<sub>2</sub>-dopaminergic receptor-linked pathways: critical regulators of CYP3A, CYP2C, and CYP2D. *Mol. Pharmacol.* 82: 668-678.

## PROTOCOLS

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