

## FKHR (H-130): sc-67140

### BACKGROUND

FKHR (for forkhead in rhabdomyosarcoma) and FKHL1 are members of the forkhead family of transcription factors. Transcriptional activation of FKHR proteins is regulated by the serine/threonine kinase Akt1, which phosphorylates FKHL1 and results in FKHL1 associating with 14-3-3 proteins and being retained in the cytoplasm. Induction of apoptosis or withdrawal of growth factors stimulates dephosphorylation and nuclear translocation of FKHR proteins, leading to FKHR-induced gene-specific transcriptional activation. FKHR, also designated forkhead box protein O1A (FOXO1), is an ubiquitously expressed protein that shuttles between the cytoplasm and nucleus. Genetic mutations in FKHR genes, including the t(2;13) and t(1;3) translocations, are commonly found in alveolar rhabdomyosarcomas. These translocations result in the fusion of the amino-terminus of Pax-3 or Pax-7, including the paired box and homeodomain DNA-binding domains, with the carboxy-terminus of FKHR, which contains a transcriptional activation domain. The Pax-3/FKHR fusion protein appears to function as an oncogenic transcription factor that enhances the activation of normal Pax-3 target genes.

### REFERENCES

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- Davis, R.J., et al. 1995. Structural characterization of the FKHR gene and its rearrangement in alveolar rhabdomyosarcoma. *Hum. Mol. Genet.* 4: 2355-2362.
- Anderson, M.J., et al. 1998. Cloning and characterization of three human forkhead genes that comprise an FKHR-like gene subfamily. *Genomics* 47: 187-199.
- Brunet, A., et al. 1999. Akt promotes cell survival by phosphorylating and inhibiting a forkhead transcription factor. *Cell* 96: 857-868.
- Tang, E.D., et al. 1999. Negative regulation of the forkhead transcription factor FKHR by Akt. *J. Biol. Chem.* 274: 16741-16746.
- Rena, G. et al. 1999. Phosphorylation of the transcription factor forkhead family member FKHR by protein kinase B. *J. Biol. Chem.* 274: 17179-17183.
- Biggs, W.H., 3rd, et al. 1999. Protein kinase B/Akt-mediated phosphorylation promotes nuclear exclusion of the winged helix transcription factor FKHL1. *Proc. Natl. Acad. Sci. USA* 96: 7421-7426.
- Zhang, X. et al. 2002. Phosphorylation of Serine 256 suppresses transactivation by FKHR (FOXO1) by multiple mechanisms. Direct and indirect effects on nuclear/cytoplasmic shuttling and DNA binding. *J. Biol. Chem.* 277: 45276-45284.

### CHROMOSOMAL LOCATION

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

### STORAGE

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

### SOURCE

FKHR (H-130) is a rabbit polyclonal antibody raised against amino acids 471-600 mapping near the C-terminus of FKHR of human origin.

### PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-67140 X, 200 µg/0.1 ml.

### APPLICATIONS

FKHR (H-130) is recommended for detection of FKHR of mouse, rat and human 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

FKHR (H-130) is also recommended for detection of FKHR in additional species, including equine, canine, bovine and porcine.

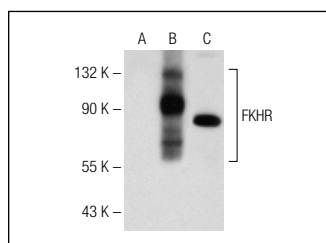
Suitable for use as control antibody for FKHR siRNA (h): sc-35382, FKHR siRNA (m): sc-35383, FKHR shRNA Plasmid (h): sc-35382-SH, FKHR shRNA Plasmid (m): sc-35383-SH, FKHR shRNA (h) Lentiviral Particles: sc-35382-V and FKHR shRNA (m) Lentiviral Particles: sc-35383-V.

FKHR (H-130) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

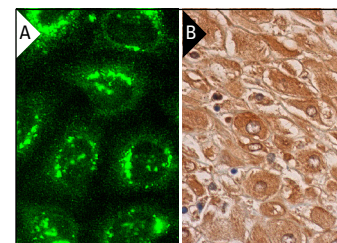
Molecular Weight of FKHR: 80 kDa.

Positive Controls: CTLL-2 cell lysate: sc-2242, NIH/3T3 + serum-starved cell lysate: sc-2257 or FKHR (m): 293 Lysate: sc-178616.

### DATA



FKHR (H-130): sc-67140. Western blot analysis of FKHR expression in non-transfected 293: sc-110760 (A), mouse FKHR transfected 293: sc-178616 (B) and CTLL-2 (C) whole cell lysates.



FKHR (H-130): sc-67140. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear bodies localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human placenta tissue showing nuclear and cytoplasmic staining of decidual cells (B).

### RESEARCH USE

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