SANTA CRUZ BIOTECHNOLOGY, INC.

p-FKHRL1 (Ser 253): sc-101683

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

FKHRL1 (for forkhead in rhabdomyosarcoma) is a member of the FKHR subfamily of forkhead transcription factors. Transcriptional activation of FKHR proteins is regulated by the serine/threonine kinase Akt1, which phosphorylates FKHRL1 at Threonine 32 and Serine 253. Phosphorylation by Akt1 negatively regulates FKHRL1 by promoting its export from the nucleus. Phosphorylated FKHRL1 associates with 14-3-3 proteins and this complex is retained in the cytoplasm. Growth factor withdrawal stimulates FKHRL1 dephosphorylation and nuclear translocation, leading to FKHR-induced gene-specific transcriptional activation. Within the nucleus, dephosphorylated FKHRL1 triggers apoptosis by inducing the expression of genes that are critical for cell death.

REFERENCES

1. Galili, N., Davis, R.J., Fredericks, W.J., Mukhopadhyay, S., Rauscher, F.J. III, Emanuel, B.S., Rovera, G. and Barr, F.G. 1993. Fusion of a forkhead domain gene to Pax-3 in the solid tumour alveolar rhabdomyosarcoma. Nat. Genet. 5: 230-235.
2. Anderson, M.J., Viars, C.S., Czekay, S., Cavenee, W.K. and Arden, K.C. 1998. Cloning and characterization of three human forkhead genes that comprise an FKHR-like gene subfamily. Genomics 47: 187-199.
3. Biggs, W.H. III, Meisenhelder, J., Hunter, T., Cavenee, W.K. and Arden, K.C. 1999. Protein kinase B/Akt-mediated phosphorylation promotes nuclear exclusion of the winged helix transcription factor FKHR1. Proc. Natl. Acad. Sci. USA 96: 7421-7426.
4. Brunet, A., Bonni, A., Zigmond, M.J., Lin, M.Z., Juo, P., Hu, L.S., Anderson, M.J., Arden, K.C., Blenis, J. and Greenberg, M.E. 1999. Akt promotes cell survival by phosphorylating and inhibiting a forkhead transcription factor. Cell 96: 857-868.
5. Tang, E.D., Nunez, G., Barr, F.G. and Guan, K.L. 1999. Negative regulation of the forkhead transcription factor FKHR by Akt. J. Biol. Chem. 274: 16741-16746.

CHROMOSOMAL LOCATION

Genetic locus: FOXO3A (human) mapping to 6q21; Foxo3a (mouse) mapping to 10 B2.

SOURCE

p-FKHRL1 (Ser 253) is a rabbit polyclonal antibody raised against a short amino acid sequence containing phosphorylated Ser 253 of FKHRL1 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.

STORAGE

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

APPLICATIONS

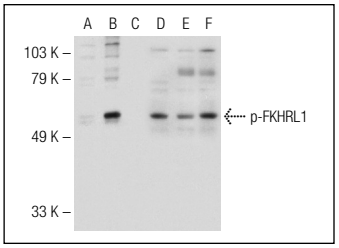
p-FKHRL1 (Ser 253) is recommended for detection of Ser 253 phosphorylated FKHRL1 of human origin and correspondingly phosphorylated Ser 253 of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for FKHRL1 siRNA (h): sc-37887, FKHRL1 siRNA (m): sc-37888, FKHRL1 shRNA Plasmid (h): sc-37887-SH, FKHRL1 shRNA Plasmid (m): sc-37888-SH, FKHRL1 shRNA (h) Lentiviral Particles: sc-37887-V and FKHRL1 shRNA (m) Lentiviral Particles: sc-37888-V.

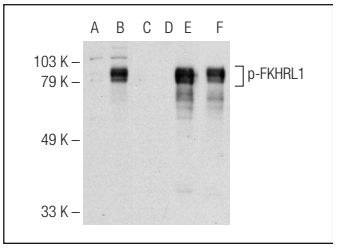
Molecular Weight of p-FKHRL1: 97 kDa.

Positive Controls: NIH/3T3 + serum cell lysate: sc-2248, NIH/3T3 + serum cell lysate: sc-2248 or HeLa + serum-starved cell lysate: sc-24693.

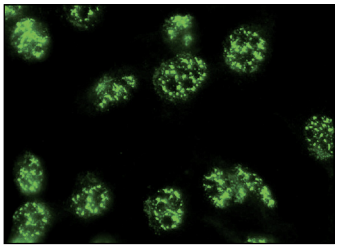
DATA



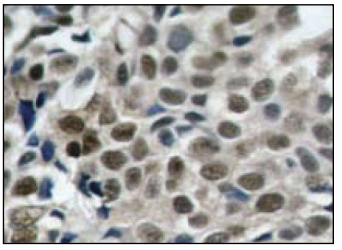
Western blot analysis of FKHRL1 phosphorylation in untreated (**A**,**D**), serum starved and serum treated (**B**,**E**) and serum starved, serum treated and lambda protein phosphatase (sc-200312A) treated (**C**,**F**) HeLa whole cell lysates. Antibodies tested include p-FKHRL1 (Ser 253): sc-101683 (**A**,**B**,**C**) and FKHRL1 (H-144): sc-11351 (**D**,**E**,**F**).



Western blot analysis of FKHRL1 phosphorylation in non-transfected: sc-117752 (**A**,**D**), untreated mouse FKHRL1 transfected: sc-178617 (**B**,**E**) and lambda protein phosphatase (sc-200312A) treated mouse FKHRL1 transfected: sc-178617 (**C**,**F**) 293T whole cell lysates. Antibodies tested include p-FKHRL1 (Ser 253): sc-101683 (**A**,**B**,**C**) and FKHRL1 (m): 293T Lysate: sc-11351 (**D**,**E**,**F**).



p-FKHRL1 (Ser 253): sc-101683. Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing nuclear localization.



p-FKHRL1 (Ser 253): sc-101683. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human breast carcinoma tissue showing nuclear staining.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.