SANTA CRUZ BIOTECHNOLOGY, INC.

Ac-FKHR (D-19): sc-49437

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

FKHR (for forkhead in rhabdomyosarcoma), FKHRL1, FKHRL1P1 and FKHRP1 compose a subfamily of the forkhead family of transcription factors. FKHR and FKHRL1 are functional genes, whereas FKHRL1P1 and FKHRP1 appear to be processed pseudogenes. Transcriptional activation of FKHR proteins is regulated by the serine/threonine kinase Akt1, which phosphorylates FKHRL1, and results in FKHRL1 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. 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.

CHROMOSOMAL LOCATION

Genetic locus: FOXO1A (human) mapping to 13q14.11; Foxo1 (mouse) mapping to 3 C.

SOURCE

Ac-FKHR (D-19) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping within an internal region of FKHR of mouse origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-49437 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

Ac-FKHR (D-19) is recommended for detection of FKHR acetylated at residues Lys 259, Lys 262 and Lys 271 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); may cross-reactive with acetylated FKHRL1.

Ac-FKHR (D-19) is also recommended for detection of FKHR acetylated at residues Lys 259, Lys 262 and Lys 271 in additional species, including equine, canine, bovine, porcine and avian.

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 Ac-FKHR: 70 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATION

1. Morris, J.B., et al. 2005. Regulation of the proapoptotic factor FOXO1 (FKHR) in cardiomyocytes by growth factors and α_1-adrenergic agonists. Endocrinology 146: 4370-4376.
2. Lappas, M., et al. 2009. Localisation and expression of FoxO1 proteins in human gestational tissues. Placenta 30: 256-262.
3. 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.
4. Hariharan, N., et al. 2010. Deacetylation of FoxO by Sirt1 plays an essential role in mediating starvation-induced autophagy in cardiac myocytes. Circ. Res. 107: 1470-1482.
5. Chen, J., et al. 2011. Sirtuin 1 is upregulated in a subset of hepatocellular carcinomas where it is essential for telomere maintenance and tumor cell growth. Cancer Res. 71: 4138-4149.
6. Hasegawa, K., et al. 2012. Necdin controls Foxo1 acetylation in hypothalamic arcuate neurons to modulate the thyroid axis. J. Neurosci. 32: 5562-5572.
7. Guido, C., et al. 2012. Estrogen receptor β (ERβ) produces autophagy and necroptosis in human seminoma cell line through the binding of the Sp1 on the phosphatase and tensin homolog deleted from chromosome 10 (PTEN) promoter gene. Cell Cycle 11: 2911-2921.
8. Yao, X.H., et al. 2013. Prenatal ethanol exposure causes glucose intolerance with increased hepatic gluconeogenesis and histone deacetylases in adult rat offspring: reversal by tauroursodeoxycholic acid. PLoS ONE 8: e59680.
9. Zhang, B., et al. 2013. SIRT3 overexpression antagonizes high glucose accelerated cellular senescence in human diploid fibroblasts via the SIRT3-FOXO1 signaling pathway. Age 35: 2237-2253.
10. Iyer, S., et al. 2014. Sirtuin1 (Sirt1) promotes cortical bone formation by preventing β-catenin sequestration by FoxO transcription factors in osteoblast progenitors. J. Biol. Chem. 289: 24069-24078.

STORAGE

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