SANTA CRUZ BIOTECHNOLOGY, INC.

DAK (A-19): sc-161514

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

DAK (dihydroxyacetone kinase 2 homolog), also known as NET45, bifunctional ATP-dependent dihydroxyacetone kinase/FAD-AMP lyase (cyclizing), DHA kinase (ATP-dependent dihydroxyacetone kinase), glycerone kinase, FAD-AMP lyase (cyclic FMN forming) or FMN cyclase, is a 575 amino acid protein belonging to the dihydroxyacetone kinase (DAK) family. Existing as a homodimer, DAK catalyzes the formation of FAD to cyclin FMN, as well as the phosphorylation of dihydroxyacetone and splitting of ribonucleoside diphosphate-X compounds. DAK contains one DhaK domain, a DhaL domain, and is encoded by a gene located on human chromosome 11. Chromosome 11 houses over 1,400 genes and comprises nearly 4% of the human genome. Jervell and Lange-Nielsen syndrome, Jacobsen syndrome, Niemann-Pick disease, hereditary angioedema and Smith-Lemli-Opitz syndrome are associated with defects in genes that maps to chromosome 11.

REFERENCES

1. Jira, P.E., et al. 2003. Smith-Lemli-Opitz syndrome and the DHCR7 gene. Ann. Hum. Genet. 67: 269-280.
2. Cabezas, A., et al. 2005. Identification of human and rat FAD-AMP lyase (cyclic FMN forming) as ATP-dependent dihydroxyacetone kinases. Biochem. Biophys. Res. Commun. 338: 1682-1689.
3. Uzcátegui, N.L., et al. 2007. Antiproliferative effect of dihydroxyacetone on *Trypanosoma brucei* bloodstream forms: cell cycle progression, subcellular alterations, and cell death. Antimicrob. Agents Chemother. 51: 3960-3968.
4. Schuchman, E.H. 2007. The pathogenesis and treatment of acid sphingomyelinase-deficient Niemann-Pick disease. J. Inherit. Metab. Dis. 30: 654-663.
5. Bhuiyan, Z.A., et al. 2008. An intronic mutation leading to incomplete skipping of exon-2 in KCNQ1 rescues hearing in Jervell and Lange-Nielsen syndrome. Prog. Biophys. Mol. Biol. 98: 319-327.

CHROMOSOMAL LOCATION

Genetic locus: DAK (human) mapping to 11q12.2; Dak (mouse) mapping to 19 A.

SOURCE

DAK (A-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of DAK 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.

Blocking peptide available for competition studies, sc-161514 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

DAK (A-19) is recommended for detection of DAK 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

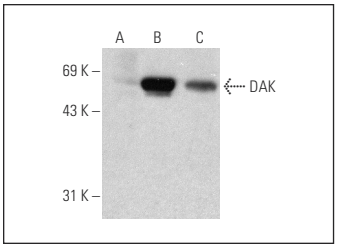
DAK (A-19) is also recommended for detection of DAK in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for DAK siRNA (h): sc-97079, DAK siRNA (m): sc-142869, DAK shRNA Plasmid (h): sc-97079-SH, DAK shRNA Plasmid (m): sc-142869-SH, DAK shRNA (h) Lentiviral Particles: sc-97079-V and DAK shRNA (m) Lentiviral Particles: sc-142869-V.

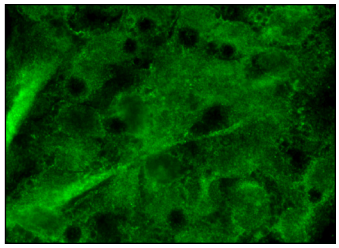
Molecular Weight of DAK: 59 kDa.

Positive Controls: DAK (m): 293T Lysate: sc-119655, mouse liver extract: sc-2256 or K-562 whole cell lysate: sc-2203.

DATA



DAK (A-19): sc-161514. Western blot analysis of DAK expression in non-transfected: sc-117752 (**A**) and mouse DAK transfected: sc-119655 (**B**) 293T whole cell lysates and mouse liver tissue extract (**C**).



DAK (A-19): sc-161514. Immunofluorescence staining of formalin-fixed Hep G2 cells showing cytoplasmic localization.

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.

MONOS Satisfaction Guaranteed

Try **DAK (A-5): sc-365458** or **DAK (G-5): sc-365984**, our highly recommended monoclonal alternatives to DAK (A-19).