SANTA CRUZ BIOTECHNOLOGY, INC.

DAK (A-5): sc-365458

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.

CHROMOSOMAL LOCATION

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

SOURCE

DAK (A-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 535-565 near the C-terminus of DAK of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

DAK (A-5) is available conjugated to agarose (sc-365458 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365458 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365458 PE), fluorescein (sc-365458 FITC), Alexa Fluor® 488 (sc-365458 AF488), Alexa Fluor® 546 (sc-365458 AF546), Alexa Fluor® 594 (sc-365458 AF594) or Alexa Fluor® 647 (sc-365458 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365458 AF680) or Alexa Fluor® 790 (sc-365458 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-365458 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

DAK (A-5) is recommended for detection of DAK of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

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.

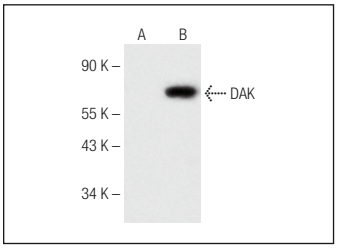
Molecular Weight of DAK: 59 kDa.

Positive Controls: DAK (m): 293T Lysate: sc-119655, HeLa whole cell lysate: sc-2200 or K-562 whole cell lysate: sc-2203.

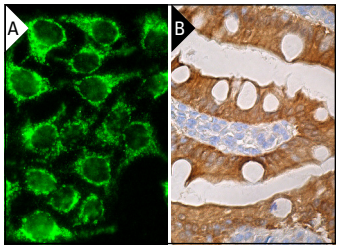
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



DAK (A-5): sc-365458. Western blot analysis of DAK expression in non-transfected: sc-117752 (**A**) and mouse DAK transfected: sc-119655 (**B**) 293T whole cell lysates.



DAK (A-5): sc-365458. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing cytoplasmic staining of glandular cells (**B**).

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.