SANTA CRUZ BIOTECHNOLOGY, INC.

DGUOK (H-87): sc-98748

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

DGUOK (deoxyguanosine kinase), also known as DGK, is a 277 amino acid protein that localizes to mitochondria and exists as multiple alternatively spliced isoforms. Functioning as a homodimer and highly expressed in a variety of tissues, including liver, muscle and brain, DGUOK uses ATP to catalyze the conversion of deoxyguanosine to dGMP. Via its catalytic activity, DGUOK is essential for the phosphorylation of purine deoxyribonucleosides in the mitochondrial matrix and is an important antiviral and chemotherapeutic tool. Defects in the gene encoding DGUOK are the cause of hepatocerebral mitochondrial DNA depletion syndrome (MDS), a group of disorders that result in reduced mtDNA (mitochondrial DNA) copy number and are characterized by liver failure and neurologic abnormalities.

REFERENCES

1. Johansson, M., et al. 1996. Cloning and expression of human deoxyguanosine kinase cDNA. Proc. Natl. Acad. Sci. USA 93: 7258-7262.
2. Mandel, H., et al. 2001. The deoxyguanosine kinase gene is mutated in individuals with depleted hepatocerebral mitochondrial DNA. Nat. Genet. 29: 337-341.
3. Taanman, J.W., et al. 2002. A novel mutation in the deoxyguanosine kinase gene causing depletion of mitochondrial DNA. Ann. Neurol. 52: 237-239.
4. Salviati, L., et al. 2002. Mitochondrial DNA depletion and dGK gene mutations. Ann. Neurol. 52: 311-317.
5. Taanman, J.W., et al. 2003. Mitochondrial DNA depletion can be prevented by dGMP and dAMP supplementation in a resting culture of deoxyguanosine kinase-deficient fibroblasts. Hum. Mol. Genet. 12: 1839-1845.
6. Mancuso, M., et al. 2005. New DGK gene mutations in the hepatocerebral form of mitochondrial DNA depletion syndrome. Arch. Neurol. 62: 745-747.

CHROMOSOMAL LOCATION

Genetic locus: DGUOK (human) mapping to 2p13.1; Dguok (mouse) mapping to 6 C3.

SOURCE

DGUOK (H-87) is a rabbit polyclonal antibody raised against amino acids 191-277 mapping at the C-terminus of DGUOK 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.

STORAGE

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

PROTOCOLS

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

APPLICATIONS

DGUOK (H-87) is recommended for detection of DGUOK of human and, to a lesser extent, 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 (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

DGUOK (H-87) is also recommended for detection of DGUOK in additional species, including canine and bovine.

Suitable for use as control antibody for DGUOK siRNA (h): sc-77139, DGUOK siRNA (m): sc-77140, DGUOK shRNA Plasmid (h): sc-77139-SH, DGUOK shRNA Plasmid (m): sc-77140-SH, DGUOK shRNA (h) Lentiviral Particles: sc-77139-V and DGUOK shRNA (m) Lentiviral Particles: sc-77140-V.

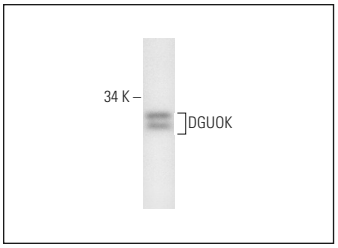
Molecular Weight of DGUOK: 28 kDa.

Positive Controls: Daudi cell lysate: sc-2415.

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



DGUOK (H-87): sc-98748. Western blot analysis of DGUOK expression in Daudi whole cell lysate.

RESEARCH USE

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