SANTA CRUZ BIOTECHNOLOGY, INC.

Riboflavin kinase (H-86): sc-67308

BACKGROUND

Riboflavin kinase, also known as RFK or RIFK, is a cytoplasmic protein that catalyzes the first step in flavocoenzyme biosynthesis, namely the ATP-dependent phosphorylation of riboflavin to form flavin-mononucleotide (FMN). Expressed in the brain, placenta and bladder, Riboflavin kinase is a 162 amino acid protein for which zinc and magnesium are cofactors. Riboflavin kinase has three distinct conformational states that are referred to as the binary MgADP complex, the ternary product complex and the apo form, all of which contribute to the unique substrate binding and catalytic activity of the enzyme. Human Riboflavin kinase shares 44% homology with its yeast counterpart, suggesting that the three flexible regions surrounding the active site (termed Flap I, Flap II and Helix B) are similar in both species.

REFERENCES

1. Barile, M., Brizio, C., Valenti, D., De Virgilio, C. and Passarella, S. 2000. The riboflavin/FAD cycle in rat liver mitochondria. Eur. J. Biochem. 267: 4888-4900.
2. Karthikeyan, S., Zhou, Q., Mseeh, F., Grishin, N.V., Osterman, A.L. and Zhang, H. 2003. Crystal structure of human Riboflavin kinase reveals a β barrel fold and a novel active site arch. Structure 11: 265-273.

CHROMOSOMAL LOCATION

Genetic locus: RFK (human) mapping to 9q21.13; Rfk (mouse) mapping to 19 B.

SOURCE

Riboflavin kinase (H-86) is a rabbit polyclonal antibody raised against amino acids 1-86 mapping at the N-terminus of Riboflavin kinase 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.

APPLICATIONS

Riboflavin kinase (H-86) is recommended for detection of Riboflavin kinase 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).

Riboflavin kinase (H-86) is also recommended for detection of Riboflavin kinase in additional species, including canine and bovine.

Suitable for use as control antibody for Riboflavin kinase siRNA (h): sc-62940, Riboflavin kinase siRNA (m): sc-62941, Riboflavin kinase shRNA Plasmid (h): sc-62940-SH, Riboflavin kinase shRNA Plasmid (m): sc-62941-SH, Riboflavin kinase shRNA (h) Lentiviral Particles: sc-62940-V and Riboflavin kinase shRNA (m) Lentiviral Particles: sc-62941-V.

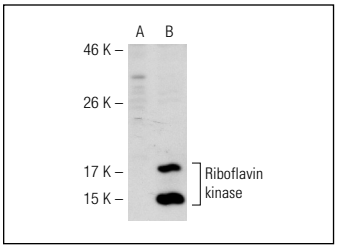
Molecular Weight of Riboflavin kinase: 18 kDa.

Positive Controls: Riboflavin kinase (m): 293T Lysate: sc-123131.

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



Riboflavin kinase (H-86): sc-67308. Western blot analysis of Riboflavin kinase expression in non-transfected: sc-117752 (**A**) and mouse Riboflavin kinase transfected: sc-123131 (**B**) 293T whole cell lysates.

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.

PROTOCOLS

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