SANTA CRUZ BIOTECHNOLOGY, INC.

HELB (P-21): sc-101971

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

HELB (helicase B), also known as hDHB (human DNA helicase B), is a 1,087 amino acid ATPase and 5'-3' DNA helicase. Due to a preference for ATP and dATP as substrates, HELB binds strongly to single-stranded DNA only in the absence of ATP. HELB has been shown to bind to RPA 70 kDa subunit and at least 2 subunits of the polymerase α-primase complex during DNA replication. Upon DNA damage, HELB is thought to be phosphorylated by either Atm or ATR. When a dominant-negative mutant of the HELB protein was injected into the nucleus of early G_1 phase cells, DNA synthesis was halted, suggesting that HELB is necessary for cell cycle progression. HELB is expressed highly in thymus and testis and is present at lower levels in kidney, spleen, brain and liver.

REFERENCES

1. Seki, M., et al. 1995. Characterization of DNA synthesis and DNA-dependent ATPase activity at a restrictive temperature in temperature-sensitive tsFT848 cells with thermolabile DNA helicase B. Mol. Cell. Biol. 15: 165-172.
2. Saitoh, A., et al. 1995. Stimulation of mouse DNA primase-catalyzed oligoribonucleotide synthesis by mouse DNA helicase B. Nucleic Acids Res. 23: 2014-2018.
3. Tada, S., et al. 2001. Molecular cloning of a cDNA encoding mouse DNA helicase B, which has homology to *Escherichia coli* RecD protein, and identification of a mutation in the DNA helicase B from tsFT848 temperature-sensitive DNA replication mutant cells. Nucleic Acids Res. 29: 3835-3840.
4. Singleton, M.R., et al. 2002. Modularity and specialization in superfamily 1 and 2 helicases. J. Bacteriol. 184: 1819-1826.
5. Taneja, P., et al. 2002. A dominant-negative mutant of human DNA helicase B blocks the onset of chromosomal DNA replication. J. Biol. Chem. 277: 40853-40861.
6. Muzi-Falconi, M., et al. 2003. The DNA polymerase α-primase complex: multiple functions and interactions. ScientificWorldJournal 3: 21-33.
7. Matsuoka, S., et al. 2007. Atm and ATR substrate analysis reveals extensive protein networks responsive to DNA damage. Science 316: 1160-1166.

CHROMOSOMAL LOCATION

Genetic locus: HELB (human) mapping to 12q14.3.

SOURCE

HELB (P-21) is a purified rabbit polyclonal antibody raised against HELB of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml PBS with < 0.1% sodium azide, 0.1% gelatin and < 0.02% sucrose.

RESEARCH USE

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

APPLICATIONS

HELB (P-21) is recommended for detection of HELB of 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for HELB siRNA (h): sc-95729, HELB shRNA Plasmid (h): sc-95729-SH and HELB shRNA (h) Lentiviral Particles: sc-95729-V.

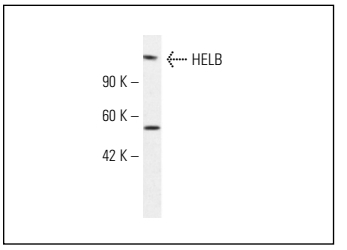
Molecular Weight of HELB: 130 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204.

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).

DATA



HELB (P-21): sc-101971. Western blot analysis of HELB expression in Jurkat whole cell lysate.

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.