

RNA pol β (8RB13): sc-56766

BACKGROUND

RNA polymerase transcribes DNA to synthesize RNA using the four ribonucleoside triphosphates as substrates. Prokaryotes contain a single RNA polymerase compared to three in eukaryotes. RNA polymerase β (RpoB or RNA pol β) refers to the β subunit of the RNA polymerase enzyme in bacterial cells. This subunit lies in the core enzyme which is responsible for RNA chain elongation. Assembly of the core polymerase enzyme is limited by β and β' subunit expression. The gene encoding for RNA pol β is under autogenous regulation, in which both holoenzyme and $\alpha 2\beta$ complex function as regulatory molecules with repressor activity.

REFERENCES

1. Kashlev, M.V., et al. 1989. Heat shock response in *Escherichia coli* promotes assembly of plasmid encoded RNA polymerase β subunit into RNA polymerase. *Mol. Gen. Genet.* 216: 469-474.
2. Lisitsyn, N.A., et al. 1989. Genes coding for RNA polymerase β subunit in bacteria. Structure/function analysis. *Eur. J. Biochem.* 177: 363-369.
3. Passador, L. and Linn, T. 1989. Autogenous regulation of the RNA polymerase β subunit of *Escherichia coli* occurs at the translational level *in vivo*. *J. Bacteriol.* 171: 6234-6242.
4. Passador, L. and Linn, T. 1992. An internal region of rpoB is required for autogenous translational regulation of the β subunit of *Escherichia coli* RNA polymerase. *J. Bacteriol.* 174: 7174-7179.
5. Miller, A., et al. 1997. RNA polymerase β' subunit: a target of DNA binding-independent activation. *Science* 275: 1655-1657.
6. Taillardat-Bisch, A.V., et al. 2003. RNA polymerase β subunit-based phylogeny of *Ehrlichia* spp., *Anaplasma* spp., *Neorickettsia* spp. and *Wolbachia pipientis*. *Int. J. Syst. Evol. Microbiol.* 53: 455-458.
7. Wigneshweraraj, S.R., et al. 2003. Multiple roles of the RNA polymerase β subunit flap domain in sigma 54-dependent transcription. *J. Biol. Chem.* 278: 3455-3465.
8. Kim, B.J., et al. 2004. Phylogenetic analysis of the genera *Streptomyces* and *Kitasatospora* based on partial RNA polymerase β subunit gene (rpoB) sequences. *Int. J. Syst. Evol. Microbiol.* 54: 593-598.
9. Ishikawa, J., et al. 2006. Contribution of rpoB2 RNA polymerase β subunit gene to rifampin resistance in *Nocardia* species. *Antimicrob. Agents Chemother.* 50: 1342-1346.

SOURCE

RNA pol β (8RB13) is a mouse monoclonal antibody raised against RNA pol β of *E. coli* origin.

PRODUCT

Each vial contains 50 μ g IgG₁ in 500 μ l of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

RNA pol β (8RB13) is recommended for detection of RNA pol β of *E. coli* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)].

SELECT PRODUCT CITATIONS

1. Yoo, W., et al. 2016. Fine-tuning of amino sugar homeostasis by EIIA(Ntr) in *Salmonella typhimurium*. *Sci. Rep.* 6: 33055.
2. Weiss, A., et al. 2016. The ω subunit governs RNA polymerase stability and transcriptional specificity in staphylococcus aureus. *J. Bacteriol.* E-published.

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 for detailed protocols and support products.