SANTA CRUZ BIOTECHNOLOGY, INC.

rnk (464B): sc-101611

BACKGROUND

RNA polymerase transcribes DNA to synthesize RNA using the four ribonucleoside triphosphates as substrates. In prokaryotes, a catalytic core known as RNAP is formed from α, β and σ RNA pol subunits that, once complexed, can initiate transcription. The RNAP-interacting protein, rnk (regulator of nucleoside kinase) is a 136 amino acid protein that is structurally similar to the secondary channel effectors known as Gre factors. *E. coli* Gre factors and DksA are competitively inhibited by rnk *in vitro*. Cellular concentrations of rnk are similar to GreB, indicating a role as regulator of secondary channel effectors. *In vitro* studies indicate that rnk neither directly inhibits RNAP promoter interaction nor initiates transcript cleavage.

REFERENCES

1. Severinov, K. 2000. RNA polymerase structure-function: insights into points of transcriptional regulation. Curr. Opin. Microbiol. 3: 118-125.
2. Laptenko, O., Lee, J., Lomakin, I. and Borukhov, S. 2003. Transcript cleavage factors GreA and GreB act as transient catalytic components of RNA polymerase. EMBO J. 22: 6322-6334.
3. Vassylyeva, M.N., Svetlov, V., Dearborn, A.D., Klyuyev, S., Artsimovitch, I. and Vassylyev, D.G. 2007. The carboxy-terminal coiled-coil of the RNA polymerase β'-subunit is the main binding site for Gre factors. EMBO Rep. 8: 1038-1043.
4. Rutherford, S.T., Lemke, J.J., Vrentas, C.E., Gaal, T., Ross, W. and Gourse, R.L. 2007. Effects of DksA, GreA, and GreB on transcription initiation: insights into the mechanisms of factors that bind in the secondary channel of RNA polymerase. J. Mol. Biol. 366: 1243-1257.
5. Lamour, V., Rutherford, S.T., Kuznedelov, K., Ramagopal, U.A., Gourse, R.L., Severinov, K. and Darst, S.A. 2008. Crystal structure of *Escherichia coli* rnk, a new RNA polymerase-interacting protein. J. Mol. Biol. 383: 367-379.

SOURCE

rnk (464B) is a mouse monoclonal antibody raised against rnk of *E. coli* origin.

PRODUCT

Each vial contains 100 µl ascites containing IgG_1 with < 0.1% sodium azide.

APPLICATIONS

rnk (464B) is recommended for detection of rnk of *E. coli* origin by Western Blotting (starting dilution to be determined by researcher, dilution range 1:100-1:5000) and solid phase ELISA (starting dilution to be determined by researcher, dilution range 1:30-1:5000).

Molecular Weight of rnk: 15 kDa.

STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

RESEARCH USE

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

SELECT PRODUCT CITATIONS

1. Mondaca, J.M., Uzair, I.D., Castro Guijarro, A.C., Flamini, M.I. and Sanchez, A.M. 2020. Molecular basis of LH action on breast cancer cell migration and invasion via kinase and scaffold proteins. Front. Cell Dev. Biol. 8: 630147.

PROTOCOLS

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