

RNA pol σ S (1RS1): sc-101602

BACKGROUND

Escherichia coli rely on selective transcription of genes that are important for survival in order to cope with constantly fluctuating environments. RNA pol σ S (RNA polymerase σ factor rpoS), also known as katF, σ^{38} and otsX, is a 330 amino acid *Escherichia coli* protein that functions as the central regulator of gene expression during dormancy. Importantly, RNA pol σ S modifies the affinity of RNA polymerase for the katE promoter, therefore enhancing synthesis of catalase HPII, a protein which reduces the hydrogen peroxide levels that arise from cellular metabolism from the external environment. As an important factor in regulating gene expression required for protection against external stresses, RNA pol σ S also protects against broad-spectrum ultraviolet radiation and is involved in the expression of exonuclease III, an essential repair enzyme. *E. coli* that lack the gene encoding RNA pol σ S rapidly die after dormancy is reached due to the absence of several protective survival proteins.

REFERENCES

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- Kim, E.Y., et al. 2004. Factors influencing preferential utilization of RNA polymerase containing σ^{38} in stationary-phase gene expression in *Escherichia coli*. *J. Microbiol.* 42: 103-110.
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SOURCE

RNA pol σ S (1RS1) is a mouse monoclonal antibody raised against RNA polymerase σ factor S of *E. coli* origin, with epitope mapping to amino acids 33-256.

PRODUCT

Each vial contains 50 μ g IgG₁ in 0.5 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

RNA pol σ S (1RS1) is recommended for detection of RNA polymerase σ factor S of *E. coli*, *Klebsiella*, *Salmonella*, *Serratia* and *Bordetella* origin by Western Blotting (starting dilution to be determined by researcher, dilution range 1:100-1:5000).

Molecular Weight of RNA pol σ S: 42 kDa.

SELECT PRODUCT CITATIONS

- Bialecka-Fornal, M., et al. 2012. Single-cell census of mechanosensitive channels in living bacteria. *PLoS ONE* 7: e33077.

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.