



Rpb7 (yN-19): sc-26310

BACKGROUND

Organisms respond to environmental stress by adopting changes in gene expression at the transcriptional level. Eukaryotic RNA polymerase II is composed of more than 10 polypeptide chains. Rpb4, a nonessential subunit of the core RNA polymerase II has a role in non-stress-specific transcription and in the regulation of stress response in yeast. Rpb4 affects expression of a small yet significant fraction of the genome under both stressful and normal conditions. Rpb4 plays a dual role in regulating two subpathways, suppressing the Rpb9 subpathway and facilitating the Rad26 subpathway. The C-terminal 24 amino acids of Rpb4 are specifically involved in activation. The Rpb4 and Rpb7 subunits of yeast RNA polymerase II form a heterodimeric complex essential for promoter-directed transcription initiation in a reconstituted system. Although Rpb7 is the interacting partner of Rpb4, they play independent roles in transcriptional regulation of genes. Rpb4 migrates as the fourth largest subunit with a molecular mass of 32 kDa in yeast RNA polymerase II.

REFERENCES

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2. Larkin, R.M., and Guilfoyle, T.J. 1998. Two small subunits in Arabidopsis RNA polymerase II are related to yeast Rpb4 and Rpb7 and interact with one another. *J Biol Chem.* 273: 5631-5637.
3. Pillai, B., Sampath, V., Sharma, N., and Sadhale, P. 2001. Rpb4, a non-essential subunit of core RNA polymerase II of *Saccharomyces cerevisiae* is important for activated transcription of a subset of genes. *J Biol Chem.* 276: 30641-30647.
4. Orlicky, S.M., Tran, P.T., Sayre, M.H., and Edwards, A.M. 2001. Dissociable Rpb4-Rpb7 subassembly of rna polymerase II binds to single-strand nucleic acid and mediates a post-recruitment step in transcription initiation. *J Biol Chem.* 276: 10097-10102.
5. Li, S., and Smerdon, M.J. 2002. Rpb4 and Rpb9 mediate subpathways of transcription-coupled DNA repair in *Saccharomyces cerevisiae*. *Embo J.* 21: 5921-5929.
6. Pillai, B., Verma, J., Abraham, A., Francis, P., Kumar, Y., Tatu, U., Brahmachari, S.K., and Sadhale, P.P. 2003. Whole genome expression profiles of yeast RNA polymerase II core subunit, Rpb4, in stress and non-stress conditions. *J Biol Chem.* 278: 3339-3346.

SOURCE

Rpb7 (yN-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Rpb7 of *Saccharomyces cerevisiae* origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-26310 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Rpb7 (yN-19) is recommended for detection of Rpb7 of *Saccharomyces cerevisiae* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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.

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.