SANTA CRUZ BIOTECHNOLOGY, INC.

Rio1p (yN-16): sc-30397

BACKGROUND

Rio1p and Rio2p are shuttling proteins that associate with pre-40S particles in the nucleus and are required for the cytoplasmic maturation of 20S pre-rRNA at site D, leading to mature 40S ribosomal subunits. Numerous nonribosomal trans-acting factors involved in pre-rRNA processing have been characterized. During the transition from 90S to 40S particles, the majority of non-ribosomal proteins (approximately 30 species) dissociate, and significantly fewer factors associate with 40S pre-ribosomes. Rio1p is a 484 amino acid serine kinase that is also considered an essential non-ribosomal cytoplasmic protein involved in pre-ribosomal RNA processing. Rio1p is required during the cell division cycle, entrance into S phase and exit from mitosis. Rio1p kinase is susceptible to proteolytic degradation at the G_1/S transition in the cell-division cycle.

REFERENCES

1. Vanrobays, E., et al. 2001. Processing of 20S pre-rRNA to 18S ribosomal RNA in yeast requires Rrp10p, an essential non-ribosomal cytoplasmic protein. EMBO J. 20: 4204-4213.
2. Angermayr, M., et al. 2002. Yeast Rio1p is the founding member of a novel subfamily of protein serine kinases involved in the control of cell cycle progression. Mol. Microbiol. 44: 309-324.
3. Schäfer, T., et al. 2003. The path from nucleolar 90S to cytoplasmic 40S pre-ribosomes. EMBO J. 22: 1370-1380.
4. Geerlings, T.H., et al. 2003. Rio2p, an evolutionarily conserved, low abundant protein kinase essential for processing of 20 S Pre-rRNA in *Saccharomyces cerevisiae*. J. Biol. Chem. 278: 22537-22545.
5. Vanrobays, E., et al. 2003. Late cytoplasmic maturation of the small ribosomal subunit requires Rio proteins in *Saccharomyces cerevisiae*. Mol. Cell. Biol. 23: 2083-2095.
6. Angermayr, M., et al. 2007. Protein kinase CK2 activates the atypical Rio1p kinase and promotes its cell-cycle phase-dependent degradation in yeast. FEBS J. 274: 4654-4667.
7. Soudet, J., et al. 2010. Immature small ribosomal subunits can engage in translation initiation in *Saccharomyces cerevisiae*. EMBO J. 29: 80-92.

SOURCE

Rio1p (yN-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Rio1p 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-30397 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

Rio1p (yN-16) is recommended for detection of Rio1p of *Saccharomyces cerevisiae* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Molecular Weight of Rio1p: 56 kDa.

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. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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.