SANTA CRUZ BIOTECHNOLOGY, INC.

ALY (4i214): sc-70348

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The Power to Question

BACKGROUND

ALY (also designated THO complex subunit 4, THOC4, REF1, Refbp1 and BEF) is the mammalian homolog of the yeast mRNA export factor Yralp. A transcriptional coactivator, ALY belongs to the cytidylyltransferase family and is important in mRNA processing and export. During spliceosome assemby, it is recruited to messenger ribonucleoprotein (mRNP) complexes and becomes tightly associated with the spliced mRNP. Consistent with splicing-dependent recruitment, ALY co-localizes with splicing factors in the nucleus. It promotes transcriptional activation by promoting the dimerization of transcription factors containing basic leucine zipper domains. Although ubiquitously expressed, ALY specifically associates with the activation domains of LEF-1 and AML-1, both of which are protein components of the TCR α enhancer complex. Research indicates that ALY may mediate context-dependent transcriptional activation by facilitating the functional collaboration of multiple proteins in the TCR α enhancer complex.

REFERENCES

1. Bruhn, L., et al. 1997. ALY, a context-dependent coactivator of LEF-1 and AML-1, is required for TCR α enhancer function. Genes Dev. 11: 640-653.
2. Virbasius, C.M., et al. 1999. A human nuclear-localized chaperone that regulates dimerization, DNA binding, and transcriptional activity of bZIP proteins. Mol. Cell 4: 219-228.
3. Strasser, K., et al. 2000. Yra1p, a conserved nuclear RNA-binding protein, interacts directly with Mex67p and is required for mRNA export. EMBO J. 19: 410-420.
4. Stutz, F., et al. 2000. REF, an evolutionary conserved family of hnRNP-like proteins, interacts with TAP/Mex67p and participates in mRNA nuclear export. RNA 6: 638-650.
5. Zhou, Z., et al. 2000. The protein ALY links pre-messenger-RNA splicing to nuclear export in metazoans. Nature 407: 401-405.
6. Luo, M.L., et al. 2001. Pre-mRNA splicing and mRNA export linked by direct interactions between UAP56 and ALY. Nature 413: 644-647.
7. Gatfield, D., et al. 2002. REF1/ALY and the additional exon junction complex proteins are dispensable for nuclear mRNA export. J. Cell Biol. 159: 579-588.
8. Chen, I.H., et al. 2005. ICP27 recruits ALY/REF but not TAP/NXF1 to herpes simplex virus type 1 transcription sites although TAP/NXF1 is required for ICP27 export. J. Virol. 79: 3949-3961.
9. Suganuma, H., et al. 2005. ALY/REF, a factor for mRNA transport, activates RH gene promoter function. FEBS J. 272: 2696-2704.

CHROMOSOMAL LOCATION

Genetic locus: ALYREF (human) mapping to 17q25.3; Alyref (mouse) mapping to 11 E2.

SOURCE

ALY (4i214) is a mouse monoclonal antibody raised against recombinant human ALY/REF fusion protein.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

ALY (4i214) is recommended for detection of ALY of mouse, rat, human and *Xenopus laevis* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for ALY siRNA (h): sc-45390, ALY siRNA (m): sc-38248, ALY shRNA Plasmid (h): sc-45390-SH, ALY shRNA Plasmid (m): sc-38248-SH, ALY shRNA (h) Lentiviral Particles: sc-45390-V and ALY shRNA (m) Lentiviral Particles: sc-38248-V.

Molecular Weight of ALY: 32 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, IMR-32 cell lysate: sc-2409 or Jurkat nuclear extract: sc-2132.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

SELECT PRODUCT CITATIONS

1. Lopitz-Otsoa, F., et al. 2012. Integrative analysis of the ubiquitin proteome isolated using tandem ubiquitin binding entities (TUBEs). J. Proteomics 75: 2998-3014.

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.