SANTA CRUZ BIOTECHNOLOGY, INC.

GAL4-TA (768): sc-429

BACKGROUND

The GAL4 protein of *Saccharomyces cerevisiae* is one of the most thoroughly characterized transcriptional activators. Since the N-terminal 147 amino acid residues of GAL4 are sufficient to mediate specific and strong binding to DNA, but are incapable of efficient transcriptional activation, this protein fragment has frequently been used to confer specific DNA binding in experiments examining transcriptional activation functions of heterologous proteins. This approach is facilitated by the finding that higher eukaryotes lack endogenous proteins that enhance transcription from the consensus GAL4-binding site. The transcriptional activation (TA) domain, which corresponds to C-terminal amino acids 768-881, facilitates the activation of GAL genes, such as GAL1, GAL2, GAL7, GAL10 and MEL1, in response to galactose. Fusions between GAL4 (an amino acid sequence) and activating domains from a variety of transcriptional regulatory proteins can activate transcription in yeast, plant, insects and mammalian cells. A unique "two-hybrid" system has been developed using GAL4 fusions in yeast to identify specific protein-protein interactions.

REFERENCES

1. Johnston, M. 1987. A model fungal gene regulatory mechanism: the GAL genes of *Saccharomyces cerevisiae*. Microbiol. Rev. 51: 458-476.
2. Ma, J. and Ptashne, M. 1987. Deletion analysis of GAL4 defines two transcriptional activating segments. Cell 48: 847-853.
3. Fields, S. and Song, O. 1989. A novel genetic system to detect protein-protein interactions. Nature 340: 245-246.
4. Ptashne, M. and Gann, A.A.F. 1990. Activators and targets. Nature 346: 329-331.
5. Chien, C., et al. 1991. The two-hybrid system; a method to identify and clone genes for proteins that interact with a protein of interest. Proc. Natl. Acad. Sci. USA 88: 9578-9582.
6. Song, O., et al. 1991. Pheromone-dependent phosphorylation of the yeast Ste12 protein correlates with transcriptional activation. Genes Dev. 5: 741-750.
7. Sadowski, I., et al. 1992. GAL4 fusion vectors for expression in yeast or mammalian cells. Gene 118: 137-141.

SOURCE

GAL4-TA (768) is a rabbit polyclonal antibody raised against amino acids 768-881 mapping within the acidic activator domain of GAL4-TA of origin.

PRODUCT

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

Available as TransCruz reagent for ChIP application, sc-429 X, 200 µg/0.1 ml.

STORAGE

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

APPLICATIONS

GAL4-TA (768) is recommended for detection of GAL4-TA 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

GAL4-TA (768) X TransCruz antibody is recommended for ChIP assays.

Molecular Weight of GAL4-TA: 99 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

SELECT PRODUCT CITATIONS

1. Zheng, L., et al. 1999. Hec1p, an evolutionary conserved coiled-coil protein, modulates chromosome segregation through interaction with SMC proteins. Mol. Cell. Biol. 19: 5417-5428.
2. Schmitt, E.K., et al. 2000. The fungal CPCR1 protein, which binds specifically to β-lactam biosynthesis genes, is related to human regulatory factor X transcription factors. J. Biol. Chem. 275: 9348-9357.
3. Despres C, et al. 2000. The *Arabidopsis* NPR1/NIM1 protein enhances the DNA binding activity of a subgroup of the TGA family of bZIP transcription factors. Plant Cell 12: 279-290.
4. Bauer S, et al. 2002. Identification and characterisation of regions in the cellular protein LaXp180 and the Listeria monocytogenes surface protein ActA necessary for the interaction of the two proteins. Mol. Genet. Genomics 268: 607-617.
5. Nikiforov, M.A., et al. 2002. A functional screen for Myc-responsive genes reveals serine hydroxymethyltransferase, a major source of the one-carbon unit for cell metabolism. Mol. Cell. Biol. 22: 5793-5800.
6. Yin, P., et al. 2002. Proestrous surge of gonadotropin-releasing hormone secretion inhibits apoptosis of anterior pituitary cells in cycling female rats. Neuroendocrinology 76: 272-282.

RESEARCH USE

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