SANTA CRUZ BIOTECHNOLOGY, INC.

GAL4-TA (A-2): sc-46680

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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., Bartel, P.L., Sternglanz, R. and Fields, S. 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., Dolan, J.W., Yuan, Y.O. and Fields, S. 1991. Pheromone-dependent phosphorylation of the yeast Ste12 protein correlates with transcriptional activation. Genes Dev. 5: 741-750.

SOURCE

GAL4-TA (A-2) is a mouse monoclonal antibody raised against amino acids 768-881 mapping within the acidic activator domain of GAL4-TA.

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.

GAL4-TA (A-2) is available conjugated to agarose (sc-46680 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-46680 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-46680 PE), fluorescein (sc-46680 FITC), Alexa Fluor® 488 (sc-46680 AF488), Alexa Fluor® 546 (sc-46680 AF546), Alexa Fluor® 594 (sc-46680 AF594) or Alexa Fluor® 647 (sc-46680 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-46680 AF680) or Alexa Fluor® 790 (sc-46680 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

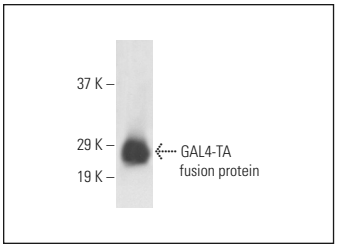
GAL4-TA (A-2) is recommended for detection of GAL4-TA by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Molecular Weight of GAL4-TA: 99 kDa.

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.

DATA



GAL4-TA (A-2): sc-46680. Western blot analysis of yeast recombinant GAL4-TA fusion protein.

SELECT PRODUCT CITATIONS

1. Sutton, A., Heller, R.C., Landry, J., Choy, J.S., Sirko, A. and Sternglanz, R. 2001. A novel form of transcriptional silencing by Sum1-1 requires Hst1 and the origin recognition complex. Mol. Cell. Biol. 21: 3514-3522.

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.