

GAL4 (D-11): sc-166317

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. 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 (D-11) is a mouse monoclonal antibody raised against amino acids 1-147 mapping within the N-terminal DNA binding domain of GAL4.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-166317 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.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

APPLICATIONS

GAL4 (D-11) is recommended for detection of GAL4 DNA binding domain 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).

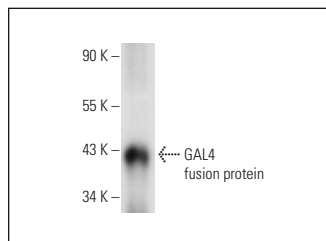
GAL4 (D-11) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of GAL4: 99 kDa.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BPHRP: sc-516102 or m-IgGκ BPHRP (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 BPFITC: sc-516140 or m-IgGκ BPE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



GAL4 (D-11): sc-166317. Western blot analysis of GAL4 yeast recombinant fusion protein.

SELECT PRODUCT CITATIONS

1. Fong, K.W., et al. 2022. PAL1 promotes tumor growth through competitive recruitment of PRC2 to G9A-target chromatin for dual epigenetic silencing. *Mol. Cell.* E-published.

RESEARCH USE

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



See **GAL4 (DBD) (RK5C1): sc-510** for GAL4 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.