SANTA CRUZ BIOTECHNOLOGY, INC.

GAL4 (DBD): sc-577

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. 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. Ma, J., et al. 1987. Deletion analysis of GAL4 defines two transcriptional activating segments. Cell 48: 847-853.
2. Johnston, M. 1987. A model fungal gene regulatory mechanism: the GAL genes of *Saccharomyces cerevisiae*. Microbiol. Rev. 51: 458-476.
3. Fields, S., et al. 1989. A novel genetic system to detect protein-protein interactions. Nature 340: 245-246.
4. Ptashne, M., et al. 1990. Activators and targets. Nature 346: 329-331.

SOURCE

GAL4 (DBD) is a rabbit polyclonal antibody raised against amino acids 1-147 mapping within the N-terminal DNA binding domain of GAL4 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 Gel Supershift and ChIP applications, sc-577 X, 200 µg/0.1 ml.

APPLICATIONS

GAL4 (DBD) is recommended for detection of GAL4 DNA binding domain 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 (DBD) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of GAL4: 99 kDa.

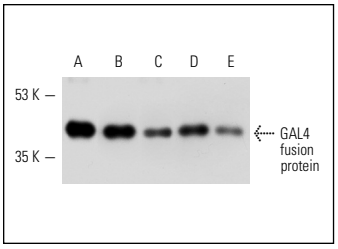
STORAGE

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.

DATA



Western blot analysis of GAL4 (DBD 1-147): sc-4050 tagged fusion protein (20 ng). Antibodies tested include GAL4 (DBD) (RK5C1): sc-510 tested at 1.0 µg/ml (**A**), 0.1 µg/ml (**B**) and 0.01 µg/ml (**C**) and GAL4 (DBD): sc-577 tested at 0.1 µg/ml (**D**) and 0.01 µg/ml (**E**).

SELECT PRODUCT CITATIONS

1. Hassan, A., et al. 2001. Histone acetyltransferase complexes stabilize SWI/SNF binding to promoter nucleosomes. Cell 104: 817-827.
2. Stafford, J.M., et al. 2001. Role of accessory factors and steroid receptor coactivator 1 in the regulation of phosphoenolpyruvate carboxykinase gene transcription by glucocorticoids. J. Biol. Chem. 276: 3811-3819.
3. Askew, E.B., et al. 2010. Transcriptional synergy between melanoma antigen gene protein-A11 (MAGE-11) and p300 in androgen receptor signaling. J. Biol. Chem. 285: 21824-21836.
4. Hainer, S.J., et al. 2011. Intergenic transcription causes repression by directing nucleosome assembly. Genes Dev. 25: 29-40.
5. Kielbasa, O.M., et al. 2011. Myospryn is a calcineurin-interacting protein that negatively modulates slow-fiber-type transformation and skeletal muscle regeneration. FASEB J. 25: 2276-2286.
6. Thebault, P., et al. 2011. Transcription regulation by the noncoding RNA SRG1 requires Spt2-dependent chromatin deposition in the wake of RNA polymerase II. Mol. Cell. Biol. 31: 1288-1300.
7. Partch, C.L. and Gardner, K.H. 2011. Coactivators necessary for transcriptional output of the hypoxia inducible factor, HIF, are directly recruited by ARNT PAS-B. Proc. Natl. Acad. Sci. USA 108: 7739-7744.
8. Boulay, G., et al. 2012. Hypermethylated in cancer 1 (HIC1) recruits polycomb repressive complex 2 (PRC2) to a subset of its target genes through interaction with human polycomb-like (hPCL) proteins. J. Biol. Chem. 287: 10509-10524.