

GAL4-VP16

Positive regulator of galactose inducible genes, GAL4(1-147) fused to VP16(411-490) herpes simplex virus virion transactivating protein human, recombinant, *E. coli*

Cat. No.	Amount
PR-718	10 µg

For *in vitro* use only
Quality guaranteed for 12 months
Store at -80°C

Avoid freeze / thaw cycles

Form

Liquid. Supplied in 20 mM Tris-HCl pH 8.0, 100 mM KCl, 0.2 mM EDTA, 1 mM DTT and 20% glycerol.

Molecular Weight

28 kDa

Activity

20 ng are sufficient for a reconstituted transcription assay and 100 ng are sufficient for a protein-protein interaction assay.

Purity

> 95% by SDS-PAGE

Description

Recombinant GAL4-VP16 is isolated from an *E. coli* strain that carries the coding sequence of the fused protein under the control of a T7 promoter.

The GAL4 protein of yeast activates the transcription of several genes involved in galactose metabolism. This event requires that GAL4 bind to upstream activation sites with the consensus sequence 5'-CGGN5(T/A)N5CCG-3'. A fragment of the GAL4 protein, comprising amino acids 1-147, binds DNA but fails to activate transcription. Herpesvirus VP16 activates expression of immediate early genes in virally infected cells. As most other eukaryotic transcriptional activator proteins, VP16 has a modular domain structure: its N-terminus is involved in DNA-protein interactions, while its C-terminal 79 amino acids have proven to be an especially potent transactivation domain. When fused to the DNA-binding domain of the yeast GAL4, this VP16 fragment functions as an activator of transcription in yeast, mammalian cells, and *in vitro* transcription assays. VP16 has been shown to bind to TBP, TFIIB, and replication factor A.

Selected References:

- Kodadek (1993) How does the GAL4 transcription factor recognize the appropriate DNA binding sites *in vivo*? *Cell. Mol. Biol. Res.* **39**:355.
- Keegan *et al.* (1986) Separation of DNA binding from the transcription-activating function of a eukaryotic regulatory protein. *Science* **231**:699.
- Post *et al.* (1981) Regulation of alpha genes of herpes simplex virus: expression of chimeric genes produced by fusion of thymidine kinase with alpha gene promoters. *Cell* **24**:555.
- Triezenberg *et al.* (1988) Functional dissection of VP16, the transactivator of herpes simplex virus immediate early gene expression. *Genes Dev.* **2**:718.
- Sadowski *et al.* (1988) GAL4-VP16 is an unusually potent transcriptional activator. *Nature* **335**:563.
- Cousens *et al.* (1989) The C-terminal 79 amino acids of the herpes simplex virus regulatory protein, Vmw65, efficiently activate transcription in yeast and mammalian cells in chimeric DNA-binding proteins. *EMBO J.* **8**:2337.
- Stringer *et al.* (1990) Direct and selective binding of an acidic transcriptional activation domain to the TATA-box factor TFIID. *Nature* **345**:783.
- Lin *et al.* (1991) Binding of general transcription factor TFIIB to an acidic activating region. *Nature* **353**:569.