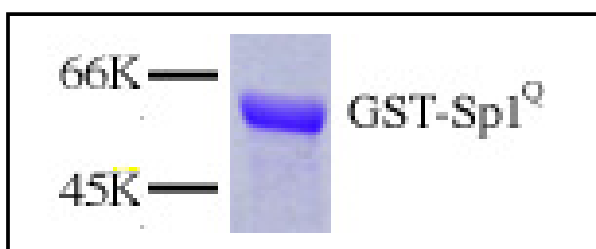


Sp1 (270-620) ^{GST} GC-box Binding Protein, GST-tagged human, recombinant, *E. coli*

Cat. No.	Amount
PR-799	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.

Activity

100 ng are sufficient for a protein-protein interaction assay.

Application

GST-Sp1 (aa 270-620) has been applied in protein-protein interaction assays.

Purity

> 95% by SDS-PAGE

Description

Sp1 was first detected in HeLa cells on the basis of its ability to activate the SV40 early promoter transcription. Subsequently it was shown to recognize and bind selectively to a GC-rich consensus sequence (GC-box: GGGCGG or CACCC) that presents in the promoter of several important cellular genes, including SV40 early, HIV-1, PDGF-B etc. Sp1 was the first transcription factor to be cloned. Analysis of structure and function has revealed that Sp1 can be separated into discrete functional domains. The DNA-binding domain consists of three zinc fingers that specifically bind to the GC-box element. Sp1 contains at least four separate transcriptional activation domains. Two of these domains are glutamine-rich, a well-characterized motif found in several other transcription factors. In addition to transcription, Sp1 function has been linked to cell growth, cancer, Huntington disease and other disorders through transcriptional regulation or specific protein-protein interactions. The function of Sp1 can be regulated by phosphorylation and glycosylation. GST-Sp1 was isolated from an *E. coli* strain that carries the coding sequence of the fused protein under the control of a T7 promoter.

Selected References:

- Dynan *et al.* (1983) The promoter-specific transcription factor Sp1 binds to upstream sequences in the SV40 early promoter. *Cell* **35**:79.
- Briggs *et al.* (1986) Purification and biochemical characterization of the promoter-specific transcription factor, Sp1. *Science* **234**:47.
- Kadonaga *et al.* (1987) Isolation of cDNA encoding transcription factor Sp1 and functional analysis of the DNA binding domain. *Cell* **51**:1079.
- Pascal *et al.* (1991) Different activation domains of Sp1 govern formation of multimers and mediate transcriptional synergism. *Genes & Dev.* **5**:1646.
- Nagaoka *et al.* (2001) Selected base sequence outside the target binding site of zinc finger protein Sp1. *Nucleic Acids Res.* **29**:4920.
- Tanaka *et al.* (1990) Differential transcriptional activation by Oct-1 and Oct-2: Interdependent activation domains induce Oct-2 phosphorylation. *Cell* **60**:375.
- Black *et al.* (2001) Sp1 and krüppel-like factor family of transcription factors in cell growth regulation and cancer. *J. Cell. Physiol.* **188**:143.
- Rafty *et al.* (2002) von Hippel-Lindau tumor suppressor protein represses platelet-derived growth factor B-chain gene expression via the Sp1 binding element in the proximal PDGF-B promoter. *J. Cell. Biochem.* **85**:490.
- Leggett *et al.* (1995) Sp1 is phosphorylated and its DNA binding activity down-regulated upon terminal differentiation of the liver. *J. Biol. Chem.* **270**:25879.
- Han *et al.* (1997) Reduced O glycosylation of Sp1 is associated with



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increased proteasome susceptibility. *Mol. Cell. Biol.* **17**:2550.
Wang *et al.* (2005) Exonuclease III protection assay with FRET probe
for detecting DNA-binding proteins. *Nucleic Acids Res.* **33**:23.