

## USF1<sup>GST</sup>

### Upstream Stimulatory Factor 1 human, recombinant, *E. coli*

Cat. No.	Amount
PR-849	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, 20% glycerol, 100 mM KCl, 0.2 mM EDTA and 1 mM DTT.

#### Activity

5-50 ng are sufficient for DNA binding assays, 50-500 ng are required for an *in vitro* transcription assay and 100 ng are required for a protein-protein interaction assay.

#### Application

Recombinant USF1 can be used for

- 1) *in vitro* transcription assays
- 2) DNA binding assays (gel mobility shift assays and DNA footprint assays) and
- 3) protein-protein interaction assays.

#### Purity

> 95% by SDS-PAGE

#### Description

Human Upstream Stimulatory Factor 1 (USF1) regulates the transcription of many genes involved in lipid and glucose homeostasis and co-localizes with familial combined hyperlipidemia (FCHL) and type 2-diabetes of chromosome 1 q22-23. The USF1 protein can activate transcription through pyrimidine-rich initiator (Inr) elements and E-box motifs. It is a basic helix-loop-helix leucine zipper (b-HLH-ZIP) protein that shares a common DNA-binding specificity with the c-Myc oncoproteins.

#### Selected References:

- Putt *et al.* (2004) Variation in USF1 shows haplotype effects, gene : gene and gene : environment associations with glucose and lipid parameters in the European Atherosclerosis Research Study II. *Hum. Mol. Genet.* **13**:1587.
- Pajukanta *et al.* (2004) Familial combined hyperlipidemia is associated with upstream transcription factor 1 (USF1). *Nat. Genetics* **36**:371.
- Ge *et al.* (2003) Physical and functional interactions between USF and Sp1 proteins regulate human deoxycytidine kinase promoter activity. *J. Biol. Chem.* **278**:49901.
- Du *et al.* (1993) Human transcription factor USF stimulates transcription through the initiator elements of the HIV-1 and the Ad-ML promoters. *EMBO J.* **12**:501.
- Gregor *et al.* (1990) The adenovirus major late transcription factor USF is a member of the helix-loop-helix group of regulatory proteins and binds to DNA as a dimer. *Genes & Dev.* **4**:1730.
- Sawadogo *et al.* (1985) Interaction of a gene-specific transcription factor with the adenovirus major late promoter upstream of the TATA box region. *Cell* **43**:165.