

GST

Glutathione S-Transferase

Schistosoma japonicum, recombinant, *E. coli*

Cat. No.	Amount
PR-811	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, 1 mM DTT and 0.2 mM EDTA.

Activity

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

Application

GST can be used in protein-protein interaction assays and protein-DNA interaction assays.

Molecular Weight

27 kDa

Purity

> 95% by SDS-PAGE

Description

Antioxidant enzyme Glutathione S-Transferase (GST) is thought to do the primary cellular defense mechanism against reactive oxygen species. GST reduces lipid hydroperoxides through its Se-independent glutathione peroxidase activity. The enzyme also detoxify lipid peroxidation end products such as 4-hydroxynonenal (4-HNE).

The soluble GST is a 27 kDa protein which occurs as a dimer in all aerobic organisms. Each monomer has two domains, one that binds GSH and is an α -structure similar to thioredoxin and the other, all helical, that binds the hydrophobic substrate. The GST-fusion protein expression system is a widely used recombinant protein expression system that allows a peptide or a regulatory protein domain to be expressed as a fusion to the C-terminus of *Schistosoma japonicum* GST. Fusion proteins also possess GST-enzymatic activity and can undergo dimerization similar to *in vivo*. The fusion protein can be purified via GST-affinity column chromatography. In most cases, the desired peptides or domains are removed from GST by applying a specific protease that recognizes and cleaves the linker between the protein domain and GST.

The technique has been widely used to generate different kinds of proteins for crystallization, molecular immunology studies, the production of vaccines and studies involving protein-protein and protein-DNA interactions. GST was isolated from an *E. coli* strain that carries the coding sequence for *Schistosoma japonicum* GST under the control of a T7 promoter.

Selected References:

- Ketterer (2001) A bird's eye view of the glutathione transferase field. *Chem Biol Interact* **138**:27.
- Smith *et al.* (1988) Single-step purification of polypeptides expressed in *Escherichia coli* as fusions with glutathione S-transferase. *Gene* **67**:31.
- Toye *et al.* (1990) Immunologic characterization of a cloned fragment containing the species-specific epitope from the major outer membrane protein of *Chlamydia trachomatis*. *Infect. Immun.* **58**:3909.
- Fikrig *et al.* (1990) Protection of mice against the Lyme disease agent by immunizing with recombinant OspA. *Science* **250**:553.
- Kaelin *et al.* (1991) Identification of cellular proteins that can interact specifically with the T/E1A-binding region of the retinoblastoma gene product. *Cell* **64**:521.
- Kaelin *et al.* (1991) The T/E1A-binding domain of the retinoblastoma product can interact selectively with a sequence-specific DNA-binding protein. *Cell* **65**:1073.