

Recombinant Human S100B protein (rHuS100B)

PrimeGene Technical Data Sheet

Catalog Number:	109-12
Source:	<i>Escherichia coli</i> .
Molecular Weight:	Approximately 10.6 kDa, a single non-glycosylated polypeptide chain containing 91 amino acids
Quantity:	5µg/20µg/1000µg
AA Sequence:	SELEKAMVAL IDVFHQYSGR EGDKHKLKKS ELKELINNEL SHFLEEIKEQ EVVDKVMETL DNDGDGECDF QEFMAFVAMV TTACHEFFEHE E
Purity:	> 95 % by SDS-PAGE.
Biological Activity:	Measured in a cell proliferation assay using human peripheral blood monocytes. The ED50 for this effect is 1-4 µg/mL.
Physical Appearance:	Sterile Filtered White lyophilized (freeze-dried) powder.
Formulation:	Lyophilized from a 0.2 µm filtered concentrated solution in PBS, pH 7.4.
Endotoxin:	Less than 1.0 EU/µg of rHuS100B as determined by LAL method.
Reconstitution:	We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Reconstitute in sterile distilled water or aqueous buffer containing 0.1 % BSA to a concentration of 0.1-1.0 mg/mL. Stock solutions should be apportioned into working aliquots and stored at ≤ -20 °C. Further dilutions should be made in appropriate buffered solutions.
Shipping:	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage:	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none">● 12 months from date of receipt, -20 to -70 °C as supplied.● 1 month, 2 to 8 °C under sterile conditions after reconstitution.● 3 months, -20 to -70 °C under sterile conditions after reconstitution.
Usage:	This material is offered by Shanghai PrimeGene Bio-Tech for research, laboratory or further evaluation purposes. NOT FOR HUMAN USE.

Human S100B protein

S100B, previously called S100β, belongs to the S100 family within the EF-hand superfamily of Ca²⁺ binding proteins. S100 proteins contain two EF-hand motifs that differ in affinity, separated by a hinge region with a hydrophobic cleft that is exposed upon Ca²⁺ binding. S100B is a 91 amino acid (aa) protein, after removal of the initial methionine, and is found as homodimers of 10.4 kDa monomers. Human S100B shares 99%, 98%, 100%, 99% and 97% aa sequence identity with mouse, rat, rabbit, equine and bovine S100B, respectively. Within the S100 family, human S100B shows the highest aa identity (59%) with S100A1. S100B is expressed primarily by astrocytes and oligodendrocytes in the central nervous system, and by Schwann cells in the peripheral nervous system. Ca²⁺-bound S100B interacts in vitro with at least 20 cytoplasmic proteins, including several structural molecules such as tubulin and GFAP. It can inhibit the phosphorylation of these kinase substrates and others such as tau and neuromodulin. Astrocytes can secrete S100B, which then acts in a cytokine-like manner. Nanomolar concentrations of S100B are secreted constitutively, promote proliferation, and are neurotrophic and anti-apoptotic. Blood levels of S100B reflect extracellular concentrations within the nervous system, and are elevated in Down's syndrome, Alzheimer's disease and Tourette's syndrome, metabolic stress, acute brain injury and brain tumors. Micromolar concentrations of S100B can be destructive and pro-apoptotic. They induce the expression of iNOS, COX-2, IL-1, IL6 and TNF-α by microglia, astrocytes or neurons. Most extracellular actions of S100B can be mediated by RAGE (receptor for advanced glycation end products), which is also a receptor for other S100 proteins.