



LD Biopharma, Inc.
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<http://www.ldbiopharma.com>

- PRODUCT DATA SHEET -

Name of Product: Recombinant Human SRXN1 Protein
Catalog Number: hRP-1786
Manufacturer: LD Biopharma, Inc.

Introduction

Redox homeostasis is critical for normal physiology and excessive reactive oxygen species are associated with a number of human diseases including cancer. Thiol groups in cysteines are among the most reactive amino acid side chains and are subject to oxidative post-translational modifications such as disulfide bond (S–S), sulfenic (–SOH), sulfinic (SO₂H) and sulfonic (SO₃H) acids and S-nitrosylation (–SNO). In addition, mixed disulfides of protein thiols and glutathione can result from the S-glutathionylation (PS–SG) of low pKa cysteine residues in certain target proteins. These oxidative cysteine modifications alter the structure and function of a variety of proteins and are involved in cell signaling. Sulfiredoxin (Srx) is a ubiquitous antioxidant protein with tissue specific expression patterns and elevated levels in a number of human cancers.

Full-length human SRXN1 (136 aa) gene was constructed by codon optimization gene synthesis technology with 29 aa N-terminal T7 / His / TEV cleavage site Tag. This protein was expressed in E.coli as inclusion bodies. The final product was refolded using our unique “temperature shift inclusion body refolding” technology and chromatographically purified.

Gene Symbol: SRXN1 (NPN3; C20orf139; SRX; SRX1)
Accession Number: NP_542763.1
Species: Human
Size: 50 µg / Vial
Composition: 1.0 mg/ml, sterile-filtered, in 20 mM pH 8.0 Tris-HCl Buffer, with proprietary formulation of NaCl, KCl, EDTA, Sucrose and DTT.
Storage: In Liquid. Keep at -80°C for long term storage. Product is stable at 4 °C for at least 30 days.

Key References

Hartikainen JM, et al., *Genetic polymorphisms and protein expression of NRF2 and Sulfiredoxin predict survival outcomes in breast cancer.* Cancer Res. 72 (21), 5537-5546 (2012)



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Bowers RR, et al. *Sulfiredoxin redox-sensitive interaction with S100A4 and non-muscle myosin IIA regulates cancer cell motility*. *Biochemistry* 51 (39), 7740-7754 (2012)

Merikallio H, et al., *Nuclear factor erythroid-derived 2-like 2 (Nrf2) and DJ1 are prognostic factors in lung cancer*. *Hum. Pathol.* 43 (4), 577-584 (2012)

Baek JY, et al., *Sulfiredoxin protein is critical for redox balance and survival of cells exposed to low steady-state levels of H2O2*. *J. Biol. Chem.* 287 (1), 81-89 (2012)

Applications

1. This protein could serve as auto-antibodies detection reagent, which will react with sera of auto-immune-diseases patients, such as systemic lupus erythematosus.
2. May be used for in vitro SRXN1 mediated redox homeostasis regulation study by intracellular delivery of this protein with “ProFectin” reagent.
3. May be used for mapping SRXN1 protein-protein interaction.
4. May be used as specific substrate protein for kinase, and ubiquitin (Sumo pathway) related enzyme functional screening assays.
5. Potential biomarker protein for diagnostic application in cancer treatment or monitoring cell mechanical / ER stress.
6. As immunogen for specific antibody production.

Quality Control

Purity: > 90% by SDS-PAGE.

Recombinant Protein Sequence

MASMTGGQQMGRGHHHHHHENLYFQGGEFGLRAGGTLGRAGAGRGAPEGPGPSGGAQGGSIHSG
RIAAVHNVPLSVLIRPLPSVLDPAKVQSLVDTIREDPDSVPPIDVLWIKGAQGGDYFYSGGCH
RYAAYQQLQRETIPAKLVQSTLSDLRVYLGASTPDLQ