



LD Biopharma, Inc.
7384 Trade Street, Suite B
San Diego, CA 92121
Tel: 858-876-8266
<http://www.ldbiopharma.com>

- PRODUCT DATA SHEET -

Name of Product: Recombinant Human **NRF2** Protein
Catalog Number: HTF-2084
Manufacturer: LD Biopharma, Inc. USA

Introduction

Human NRF2 gene encodes a transcription factor which is a member of a small family of basic leucine zipper (bZIP) proteins. NRF2 binds to antioxidant response (ARE) elements in the promoter regions of target genes. It is important for the coordinated up-regulation of genes in response to oxidative stress. NRF2 may be involved in the transcriptional activation of genes of the beta-globin cluster by mediating enhancer activity of hypersensitive site 2 of the beta-globin locus control region. This proteins may also be involved in response to injury and inflammation which includes the production of free radicals.

Full-length human NRF2 cDNA (604aa, Isoform-I, derived from BC011558) was constructed with codon optimization using gene synthesis technology and expressed with a small T7-His-TEV cleavage site Tag (29aa) fusion at its N-terminal. It 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: NRF2 (NFE2L2; HEBP1; IMDDHH)
Accession Number: NP_006155.2
Species: Human
Size: 30 µg / Vial
Composition: 0.3 mg/ml, sterile-filtered, in 20 mM pH 8.0 Tris-HCl Buffer, with proprietary formulation of NaCl, KCl, EDTA, Sucrose, DTT and others.
Storage: In Liquid. Keep at -80°C for long term storage. Product is stable at 4 °C for at least two weeks.

Key References

Valerio Azzimato, et al., *Liver macrophages inhibit the endogenous antioxidant response in obesity-associated insulin resistance.*
Science Translation Medicine, 26:Feb.Vol.12, Issue 532, eaaw9709. (2020)



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Yuan Z, et al., *NRF2 overexpression in mesenchymal stem cells induces stem-cell marker expression and enhances osteoblastic differentiation* Biochem. Biophys. Res. Commun. 491 (1), 228-235 (2017)

Vaamonde-Garcia C, et al., *The nuclear factor-erythroid 2-related factor / heme oxygenase-1 axis is critical for the inflammatory features of type 2 diabetes-associated osteoarthritis*. J. Biol. Chem. 292 (35), 14505-14515 (2017)

Perez-Leal O, et al., *Pharmacological stimulation of nuclear factor (erythroid-derived 2)-like 2 translation activates antioxidant responses*. J. Biol. Chem. 292 (34), 14108-14121 (2017)

Applications

1. May be used for in vitro NRF2 mediated gene transcription regulation study in response to oxidative stress for various cell types by intracellular delivery of this NRF2 protein with protein delivery reagent such as ProFectin reagent kit.
2. May be used as specific substrate protein for kinase, and ubiquitin (Sumo pathway) related enzyme functional screening assays.
3. Potential biomarker protein / therapeutic target protein for various metabolic pathway regulation, such as anti-Aging, diabetes, and NAFLD treatment drug development.
4. As native human NRF2 immunogen for specific its antibody production.

Quality Control

Purity: > 90% by SDS-PAGE.

Recombinant Human NRF2 Protein Sequence (70.9 kD)

MASMTGGQQMGRGHHHHHENLYFOGGEFMDLELPPPGLPSQQDMDLIDILWRQDIDLGVSREV
FDFSQRRKEYELEKQKKLEKERQEQLQKEQEKAFFAQLQLDEETGEFLPIQPAQHIQSETSGSA
NYSQVAHIPKSDALYFDDCMQLLAQTFFVDDNEVSSATFQSLVPDIPGHIESPVFIATNQAQS
PETSVAQVAPVDLDGMQQDIEQVWEELLSIPELQCLNIENDKLVETTMVPSPEAKLTEVDNYHF
YSSIPSMEKEVGNCSPHFLNAFEDSFSSILSTEDPNQLTVNSLNSDATVNTDFGDEFYSAFIAE
PSISNSMPSPATLHSLSELLNGPIDVSDLSLCKAFNQNHPESTAEFNDSDSGISLNTSPSVAS
PEHSVESSSYGDTLLGLSDSEVEELDSAPGSVKQNGPKTPVHSSGDMVQPLSPSQGQSTHVHDA
QCENTPPEKELPVSPGHRKTPFTKDKHSSRLEAHLTRDELRAKALHIPFPVEKIINLPVVDNFEM
MSKEQFNEAQLALIRDIRRRGKNKVAQAQNCRKRKLENIVELEQDLHDHLKDEKEKLLKEKGENDK
SLHLLKKQLSTLYLEVFSMLRDEDGKPYSPSEYSLQQTRDGNVFLVPKSKKPDVKKN