

Recombinant Rat NF2L2 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP52213

Size: 10ug, 100ug

Protein Name: Nuclear factor erythroid 2-related factor 2 (NF-E2-related factor 2) (NFE2-related factor 2) (Nuclear factor, erythroid derived 2, like 2)

Synonym: Nfe2l2, Nrf2

UniProt ID: O54968

UniProt Link: www.uniprot.org/uniprotkb/O54968/entry

Species Source: Rat

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 604 AA

Molecular Weight: 68 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MMDLELPPPGQLQSQQDMDLIDILWRQDIDLGVSREVFDFSQRQKDYELEKQKKLEKERQEQLQKEQ
EKAFFAQLQLDEETGEFLPIQPAQHIQTDTSGSVSYSQVAHIPKQDALYFEDCMQLLAETFPFVDDHE
VSSPTFQSLALDIPSHVESSVFTTPDQAQSLDSSLETAMTDLSSIQQDMEQVWQELFSIPELQCLNTE
NKQQAETTTVPSPEATLTMDSNYHFYSSIPSLEKEVDSCSPHFLHGFEDSFSSILSTDDASQLNSLD
SNPTLNTDFGDEFYSAFLAEPSSGGGSMPSAAISQSLSELLGGPIEGCDLSLCKAFNQKHTEGTVEF
NDSDSGISLNTSPSRASPEHSVESSIYGDPPPFGSDSEMEELDSAPGSVKQNGPKAQPTHSSGDTV
QPLSPAQGHSAAVHESQCENTTKKEVPVSPGHQKVPFTKDKHSSRLEAHLTRDELRAKALHIPFPVE
KIINLPVDDFNEMMSKEQFNEAQLALIRDIRRGKNKVAQAQNCRKRLKENIVELEQDLGHLKDEREKL
LREKGENDRNHLHLKRKLSTLYLEVFSMLRDEDGKPYPSPSEYSLQQTRDGNVFLVPKSKKPDTKKN

3. Buffer Composition

Liquid format: PBS-based buffer containing 50% glycerol. Glycerol concentration can be customized upon customer request; please state special requirements when placing your order.

Lyophilized format: Buffer before lyophilization is PBS supplemented with 6% trehalose.

4. Storage Conditions

Upon receipt, store the product at -20 °C or -80 °C. Aliquot the product for on-demand use to preserve protein activity and prevent denaturation and inactivation caused by repeated freeze-thaw cycles.

5. Product Description

This product is recombinant Nuclear factor erythroid 2-related factor 2 (NF-E2-related factor 2) (NFE2-related factor 2) (Nuclear factor, erythroid derived 2, like 2) produced using the HEK293T eukaryotic cell expression system. It is suitable for in-vitro functional assays, protein-protein interaction studies, antibody preparation and other biomedical research applications.

Protein Function: Transcription factor that plays a key role in the response to oxidative stress: binds to antioxidant response (ARE) elements present in the promoter region of many cytoprotective genes, such as phase 2 detoxifying enzymes, and promotes their expression, thereby neutralizing reactive electrophiles (PubMed:16314513). In normal conditions, ubiquitinated and degraded in the cytoplasm by the BCR(KEAP1) complex. In response to oxidative stress, electrophile metabolites inhibit activity of the BCR(KEAP1) complex, promoting nuclear accumulation of NFE2L2/NRF2, heterodimerization with one of the small Maf proteins and binding to ARE elements of cytoprotective target genes. The NFE2L2/NRF2 pathway is also activated in response to selective autophagy: autophagy promotes interaction between KEAP1 and SQSTM1/p62 and subsequent inactivation of the BCR(KEAP1) complex, leading to NFE2L2/NRF2 nuclear accumulation and expression of cytoprotective genes (By similarity). The NFE2L2/NRF2 pathway is also activated during the unfolded protein response (UPR), contributing to redox homeostasis and cell survival following endoplasmic reticulum stress (By similarity). May also 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 (By similarity). Also plays an important role in the regulation of the innate immune response. It is a critical regulator of the innate immune response and survival during sepsis by maintaining redox homeostasis and restraint of the dysregulation of pro-inflammatory signaling pathways like MyD88-dependent and -independent and TNF signaling. Suppresses macrophage inflammatory response by blocking pro-inflammatory cytokine transcription and the induction of IL6. Binds to the proximity of pro-inflammatory genes in macrophages and inhibits RNA Pol II recruitment. The inhibition is independent of the Nrf2-binding motif and reactive oxygen species level (By similarity). Represses antiviral cytosolic DNA sensing by suppressing the expression of the adapter protein STING1 and decreasing responsiveness to STING1 agonists while increasing susceptibility to infection with DNA viruses (By similarity).

Subcellular Localization: Cytoplasm, cytosol . Nucleus . Note=Cytosolic under unstressed conditions: ubiquitinated and degraded by the BCR(KEAP1) E3 ubiquitin ligase complex. Translocates into the nucleus upon induction by electrophilic agents that inactivate the BCR(KEAP1) E3 ubiquitin ligase complex.

6. Notes

- Avoid repeated freeze-thaw cycles to maintain protein stability and biological activity.
- Please specify special buffer-composition requirements at the time of order placement.
- For research use only. Not intended for clinical diagnosis, therapeutic use or commercial manufacturing.