

NFE2L2 Blocking Peptide (N-term)

Synthetic peptide
Catalog # BP7275a

Specification

NFE2L2 Blocking Peptide (N-term) - Product Information

Primary Accession [O16236](#)
Other Accession [O54968](#), [Q60795](#), [NP_006155](#)

NFE2L2 Blocking Peptide (N-term) - Additional Information

Gene ID 4780

Other Names

Nuclear factor erythroid 2-related factor 2, NF-E2-related factor 2, NFE2-related factor 2, HEBP1, Nuclear factor, erythroid derived 2, like 2, NFE2L2, NRF2

Target/Specificity

The synthetic peptide sequence is selected from aa 45-59 of HUMAN NFE2L2

Format

Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

Storage

Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

Precautions

This product is for research use only. Not for use in diagnostic or therapeutic procedures.

NFE2L2 Blocking Peptide (N-term) - Protein Information

Name NFE2L2 {ECO:0000303|PubMed:29018201, ECO:0000312|HGNC:HGNC:7782}

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: [11035812](http://www.uniprot.org/citations/11035812), PubMed: [19489739](http://www.uniprot.org/citations/19489739), PubMed: [29018201](http://www.uniprot.org/citations/29018201), PubMed: [31398338](http://www.uniprot.org/citations/31398338)). In normal conditions, ubiquitinated and degraded in the cytoplasm by the BCR(KEAP1) complex (PubMed: [11035812](http://www.uniprot.org/citations/11035812), PubMed: [15601839](http://www.uniprot.org/citations/15601839), PubMed: [29018201](http://www.uniprot.org/citations/29018201)). 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 (PubMed:19489739, PubMed:29590092). 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 (PubMed:20452972). 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 (PubMed:7937919). Also plays an important role in the regulation of the innate immune response and antiviral cytosolic DNA sensing. 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-alpha signaling (By similarity). Suppresses macrophage inflammatory response by blocking pro-inflammatory cytokine transcription and the induction of IL6 (By similarity). 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 (PubMed:30158636). Once activated, limits the release of pro-inflammatory cytokines in response to human coronavirus SARS-CoV-2 infection and to virus-derived ligands through a mechanism that involves inhibition of IRF3 dimerization. Also inhibits both SARS-CoV-2 replication, as well as the replication of several other pathogenic viruses including Herpes Simplex Virus-1 and-2, Vaccinia virus, and Zika virus through a type I interferon (IFN)- independent mechanism (PubMed:33009401).

Cellular Location

Cytoplasm, cytosol. Nucleus {ECO:0000255|PROSITE-ProRule:PRU00978, ECO:0000269|PubMed:11035812, ECO:0000269|PubMed:15601839, ECO:0000269|PubMed:21196497, ECO:0000269|PubMed:29983246}. Note=Cytosolic under unstressed conditions: ubiquitinated and degraded by the BCR(KEAP1) E3 ubiquitin ligase complex (PubMed:15601839, PubMed:21196497). Translocates into the nucleus upon induction by electrophilic agents that inactivate the BCR(KEAP1) E3 ubiquitin ligase complex (PubMed:21196497)

Tissue Location

Widely expressed. Highest expression in adult muscle, kidney, lung, liver and in fetal muscle

NFE2L2 Blocking Peptide (N-term) - Protocols

Provided below are standard protocols that you may find useful for product applications.

- [Blocking Peptides](#)

NFE2L2 Blocking Peptide (N-term) - Images

NFE2L2 Blocking Peptide (N-term) - Background

NFE2 (MIM 601490), NFE2L1 (MIM 163260), and NFE2L2 comprise a family of human basic leucine zipper (bZIP) transcription factors. They share highly conserved regions that are distinct from other bZIP families, such as JUN (MIM 165160) and FOS (MIM 164810), although remaining regions have diverged considerably from each other (Chan et al., 1995).

NFE2L2 Blocking Peptide (N-term) - References

Zhao,X., Stroke 38 (12), 3280-3286 (2007) Li,M.H., J. Biol. Chem. 282 (39), 28577-28586 (2007)