

# PRODUCT INFORMATION



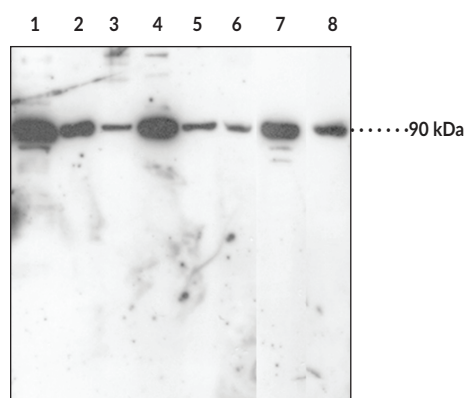
## Nrf2 (C-Term) Polyclonal Antibody

Item No. 10214

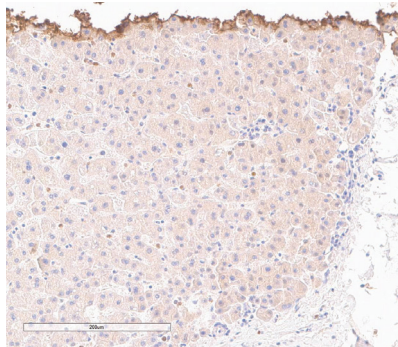
### Overview and Properties

<b>Contents:</b>	This vial contains 500 µl of peptide affinity-purified antibody.
<b>Synonyms:</b>	HEBP1, NF-E <sub>2</sub> -related factor 2, Nuclear Factor Erythroid 2-related factor 2
<b>Immunogen:</b>	Synthetic peptide from the C-terminal region of human Nrf2 protein
<b>Species Reactivity:</b>	(+) Vertebrate, mouse, rat
<b>Uniprot No.:</b>	Q16236
<b>Form:</b>	Liquid
<b>Storage:</b>	-20°C (as supplied)
<b>Stability:</b>	≥1 year
<b>Storage Buffer:</b>	PBS, pH 7.2, with 50% glycerol and 0.02% sodium azide
<b>Host:</b>	Rabbit
<b>Applications:</b>	Flow cytometry (FC), Immunocytochemistry (ICC), Immunofluorescence (IF), and Western blot (WB); the recommended starting dilution for FC and IF is 1:100 and 1:200 for WB. Suitable for ICC, working dilution should be determined empirically. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

### Images



Lane 1: HeLa cell lysate (50 µg)  
Lane 2: Mouse small intestine (50 µg)  
Lane 3: Mouse heart (50 µg)  
Lane 4: HepG2 cell lysate (50 µg)  
Lane 5: Rat liver (50 µg)  
Lane 6: Rat liver sample (50 µg)  
Lane 7: Mouse liver (50 µg)  
Lane 8: Mouse skeletal muscle (50 µg)



Immunohistochemistry analysis of formalin-fixed, paraffin-embedded (FFPE) human liver tissue after heat induced antigen retrieval in pH 6.0 citrate buffer. After incubation with Nrf2 (C-term) Polyclonal Antibody, (Item No. 10214), at a 1:120 dilution, slides were incubated with biotinylated secondary antibody, followed by alkaline phosphatase-streptavidin and chromogen (DAB).

WARNING  
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA  
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY  
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 09/15/2020

CAYMAN CHEMICAL  
1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA  
PHONE: [800] 364-9897  
[734] 971-3335  
FAX: [734] 971-3640  
CUSTSERV@CAYMANCHEM.COM  
WWW.CAYMANCHEM.COM

# PRODUCT INFORMATION



## Description

---

Nuclear factor erythroid 2-related factor 2 (Nrf2) is a basic leucine zipper transcription factor encoded by *NFE2L2* in humans that regulates the cellular antioxidant response.<sup>1</sup> It is a 605-amino acid protein comprised of seven highly conserved Nrf2-ECH (Neh) homology domains.<sup>2,3</sup> Nrf2 contains a large central domain that recruits transcriptional co-activators, mediates heterodimerization with the transcription factor Maf, and can be phosphorylated by GSK3 or the ubiquitin ligase adapter protein  $\beta$ -TrCP.<sup>3,4</sup> The Nrf2 central domain is flanked by an N-terminal Neh2 domain that binds the negative regulator Kelch-like ECH-associated protein 1 (Keap1; Item No. 32035) and a C-terminal Neh3 domain that is required for transactivation.<sup>3</sup> Nrf2 is ubiquitously expressed and, under homeostatic conditions, associates with Keap1 in the cytoplasm, preventing Nrf2 nuclear translocation and promoting its ubiquitination and proteasomal degradation.<sup>2,5</sup> In the presence of xenobiotic electrophiles or oxidants, Keap1 releases Nrf2 which translocates to the nucleus, dimerizes with Maf, and induces the expression of a variety of cytoprotective genes that have antioxidant, anti-inflammatory, and metabolic functions.<sup>1,6,7</sup> Nrf2 siRNA knockdown increases DNA-crosslinking and apoptosis induced by cisplatin (Item No. 13119) in A549 cancer cells, indicating that Nrf2 contributes to chemoresistance.<sup>8</sup> Tumor Nrf2 levels are increased in patients with non-small cell lung cancer (NSCLC) and this increase is associated with poor overall survival.<sup>9</sup> Cayman's Nrf2 (C-Term) Polyclonal Antibody can be used for flow cytometry (FC), immunocytochemistry (ICC), immunofluorescence (IF), and Western blot (WB) applications. The antibody preferentially recognizes polyubiquitinated Nrf2 at 90 kDa from human, mouse, and rat samples.

## References

---

1. de la Vega, M.R., Chapman, E., and Zhang, D.D. NRF2 and the hallmarks of cancer. *Cancer Cell* **34**(1), 21-43 (2018).
2. Robledinos-Antón, N., Fernández-Ginés, R., Manda, G., *et al.* Activators and inhibitors of NRF2: A review of their potential for clinical development. *Oxid. Med. Cell. Longev.* 9372182 (2019).
3. Canning, P., Sorrell, F.J., and Bullock, A.N. Structural basis of Keap1 interactions with Nrf2. *Free Radic. Biol. Med.* **88**(Pt. B), 101-107 (2015).
4. Chen, Y., Inoyama, D., Kong, A.-N.T., *et al.* Kinetic analyses of Keap1-Nrf2 interaction and determination of the minimal Nrf2 peptide sequence required for Keap1 binding using surface plasmon resonance. *Chem. Biol. Drug Des.* **78**(6), 1014-1021 (2011).
5. Suzuki, T. and Yamamoto, M. Molecular basis of the Keap1-Nrf2 system. *Free Radic. Biol. Med.* **88**(Pt. B), 93-100 (2015).
6. Tonelli, C., Chio, I.I.C., and Tuveson, D.A. Transcriptional regulation by Nrf2. *Antioxid. Redox Signal.* **29**(17), 1727-1745 (2018).
7. Kang, M.-I., Kobayashi, A., Wakabayashi, N., *et al.* Scaffolding of Keap1 to the actin cytoskeleton controls the function of Nrf2 as key regulator of cytoprotective phase 2 genes. *Proc. Natl. Acad. Sci. USA* **101**(7), 2046-2051 (2004).
8. Homma, S., Ishii, Y., Morishima, Y., *et al.* Nrf2 enhances cell proliferation and resistance to anticancer drugs in human lung cancer. *Clin. Cancer Res.* **15**(10), 3423-3432 (2009).
9. Solis, L.M., Behrens, C., Dong, W., *et al.* Nrf2 and Keap1 abnormalities in non-small cell lung carcinoma and association with clinicopathologic features. *Clin. Cancer Res.* **16**(14), 3743-3753 (2010).