

Nrf1 (E-4): sc-365651

BACKGROUND

The NF-E2 DNA binding protein is composed of two subunits, p45 and MafK, and it regulates expression of globin genes in developing erythroid cells through interaction with Maf recognition elements (MAREs). A family of NF-E2 related proteins, which are collectively known as the Cap "n" collar (CNC) family and include Nrf1 (also designated TCF11), Nrf2 and Nrf3, are bZIP transcription factors that heterodimerize with Maf proteins to bind MARE sequences. The Nrf proteins also bind the antioxidant response element (ARE) and are implicated in the regulation of detoxification enzymes and the oxidative stress response. They do so by heterodimerizing with Jun family members (c-Jun, JunB and JunD) to activate gene expression, specifically the detoxifying enzyme, NQO1. Nrf2 is widely expressed and is thought to translocate to the nucleus after treatment with xenobiotics and antioxidants, which stimulate its release from a repressor protein Keap1. Nrf3 is highly expressed in placenta, B cells and monocytes.

CHROMOSOMAL LOCATION

Genetic locus: NFE2L1 (human) mapping to 17q21.32; Nfe2l1 (mouse) mapping to 11 D.

SOURCE

Nrf1 (E-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 121-157 near the N-terminus of Nrf1 of human origin.

PRODUCT

Each vial contains 200 µg IgG₃ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-365651 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

Nrf1 (E-4) is recommended for detection of Nrf1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Nrf1 (E-4) is also recommended for detection of Nrf1 in additional species, including canine and bovine.

Suitable for use as control antibody for Nrf1 siRNA (h): sc-43575, Nrf1 siRNA (m): sc-43576, Nrf1 shRNA Plasmid (h): sc-43575-SH, Nrf1 shRNA Plasmid (m): sc-43576-SH, Nrf1 shRNA (h) Lentiviral Particles: sc-43575-V and Nrf1 shRNA (m) Lentiviral Particles: sc-43576-V.

Molecular Weight of Nrf1 bZIP region: 30 kDa.

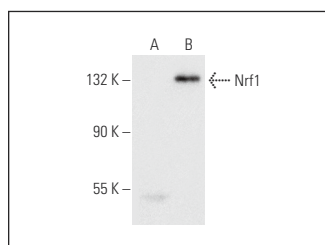
Molecular Weight of glycosylated Nrf1: 65-120 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, NIH/3T3 whole cell lysate: sc-2210 or Nrf1 (h2): 293T Lysate: sc-171305.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



Nrf1 (E-4): sc-365651. Western blot analysis of Nrf1 expression in non-transfected: sc-117752 (A) and human Nrf1 transfected: sc-171305 (B) 293T whole cell lysates



Nrf1 (E-4): sc-365651. Immunoperoxidase staining of formalin fixed, paraffin-embedded human oral mucosa tissue showing cytoplasmic staining of squamous epithelial cells.

SELECT PRODUCT CITATIONS

- Cigliano, A., et al. 2017. Deregulated c-Myc requires a functional HSF1 for experimental and human hepatocarcinogenesis. *Oncotarget* 8: 90638-90650.
- Hämäläinen, M., et al. 2019. NRF1 and NRF2 mRNA and protein expression decrease early during melanoma carcinogenesis: an insight into survival and microRNAs. *Oxid. Med. Cell. Longev.* 2019: 2647068.
- Lai, Y., et al. 2020. Restoration of L-OPA1 alleviates acute ischemic stroke injury in rats via inhibiting neuronal apoptosis and preserving mitochondrial function. *Redox Biol.* 34: 101503.
- Wang, Y., et al. 2021. Biological and epigenetic alterations of mitochondria involved in cellular replicative and hydrogen peroxide-induced premature senescence of human embryonic lung fibroblasts. *Ecotoxicol. Environ. Saf.* 216: 112204.
- Idrees, M., et al. 2025. PPARGC1A regulates transcriptional control of mitochondrial biogenesis in early bovine embryos. *Front. Cell Dev. Biol.* 12: 1531378.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.