

Nrf1 (G-5): sc-515360

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 (G-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 747-772 at the C-terminus of Nrf1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-515360 X, 200 µg/0.1 ml.

Nrf1 (G-5) is available conjugated to agarose (sc-515360 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-515360 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515360 PE), fluorescein (sc-515360 FITC), Alexa Fluor® 488 (sc-515360 AF488), Alexa Fluor® 546 (sc-515360 AF546), Alexa Fluor® 594 (sc-515360 AF594) or Alexa Fluor® 647 (sc-515360 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-515360 AF680) or Alexa Fluor® 790 (sc-515360 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-515360 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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STORAGE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

APPLICATIONS

Nrf1 (G-5) 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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.

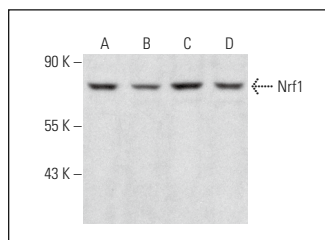
Nrf1 (G-5) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of Nrf1 bZIP region: 30 kDa.

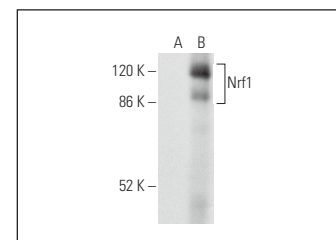
Molecular Weight of glycosylated Nrf1: 65-120 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, K-562 whole cell lysate: sc-2203 or Nrf1 (h): 293T Lysate: sc-111140.

DATA



Nrf1 (G-5): sc-515360. Western blot analysis of Nrf1 expression in K-562 (A), NIH/3T3 (B), Sol8 (C) and RPE-J (D) whole cell lysates.



Nrf1 (G-5): sc-515360. Western blot analysis of Nrf1 expression in non-transfected: sc-117752 (A) and human Nrf1 transfected: sc-111140 (B) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

- Shou, J.W., et al. 2019. Berberine protects C17.2 neural stem cells from oxidative damage followed by inducing neuronal differentiation. *Front. Cell. Neurosci.* 13: 395.
- Gundu, C., et al. 2022. GSK2606414 attenuates PERK/p-eIF2 α /ATF4/CHOP axis and augments mitochondrial function to mitigate high glucose induced neurotoxicity in N2A cells. *Curr. Res. Pharmacol. Drug Discov.* 3: 100087.
- Zhou, Y., et al. 2023. Honokiol alleviated neurodegeneration by reducing oxidative stress and improving mitochondrial function in mutant SOD1 cellular and mouse models of amyotrophic lateral sclerosis. *Acta Pharm. Sin. B* 13: 577-597.
- Takenaka, Y., et al. 2023. Temporal inhibition of the electron transport chain attenuates stress-induced cellular senescence by prolonged disturbance of proteostasis in human fibroblasts. *FEBS J.* 290: 3843-3857.

RESEARCH USE

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