SANTA CRUZ BIOTECHNOLOGY, INC.

Nrf2 (437C2a): sc-81342

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The NF-E2 DNA binding protein is composed of two subunits, p45 and MafK. 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, Jun B and Jun D) 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 its repressor protein, Keap1.

CHROMOSOMAL LOCATION

Genetic locus: NFE2L2 (human) mapping to 2q31.2.

SOURCE

Nrf2 (437C2a) is a mouse monoclonal antibody raised against a recombinant protein corresponding to an internal region of Nrf2 of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 1.0% stabilizer protein.

APPLICATIONS

Nrf2 (437C2a) is recommended for detection of Nrf2 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for Nrf2 siRNA (h): sc-37030, Nrf2 shRNA Plasmid (h): sc-37030-SH and Nrf2 shRNA (h) Lentiviral Particles: sc-37030-V.

Molecular Weight (predicted) of Nrf2 isoforms: 68/66/65 kDa.

Molecular Weight (observed) of Nrf2: 61 kDa.

Molecular Weight of poly-ubiquitinated Nrf2: 100 kDa.

Positive Controls: THP-1 nuclear extract: sc-24963 or Jurkat whole cell lysate: sc-2204.

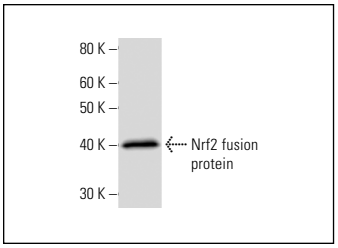
RECOMMENDED SUPPORT REAGENTS

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).

STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

DATA



Nrf2 (437C2a): sc-81342. Western Blot analysis of human recombinant Nrf2 fusion protein.

SELECT PRODUCT CITATIONS

1. Garbin, U., et al. 2009. Cigarette smoking blocks the protective expression of Nrf2/ARE pathway in peripheral mononuclear cells of young heavy smokers favouring inflammation. PLoS ONE 4: e8225.
2. Zhang, Y., et al. 2017. Simvastatin attenuates renal ischemia/reperfusion injury from oxidative stress via targeting Nrf2/HO-1 pathway. Exp. Ther. Med. 14: 4460-4466.
3. Yin, Y., et al. 2018. miR-144-3p regulates the resistance of lung cancer to cisplatin by targeting Nrf2. Oncol. Rep. 40: 3479-3488.
4. Yu, K., et al. 2019. Melatonin reduces androgen production and upregulates Heme Oxygenase-1 expression in granulosa cells from PCOS patients with hypoestrogenia and hyperandrogenia. Oxid. Med. Cell. Longev. 2019: 8218650.
5. Cheleschi, S., et al. 2019. MicroRNA-34a and microRNA-181a mediate visfatin-induced apoptosis and oxidative stress via NFκB pathway in human osteoarthritic chondrocytes. Cells 8: 874.
6. Frandsen, J., et al. 2020. Neural glyoxalase pathway enhancement by morin derivatives in an Alzheimer's disease model. ACS Chem. Neurosci. 11: 356-366.
7. Khurana, N., et al. 2020. Bardoxolone-Methyl (CDDO-Me) suppresses androgen receptor and its splice-variant AR-V7 and enhances efficacy of enzalutamide in prostate cancer cells. Antioxidants 9: 68.
8. Georgiou-Siafis, S.K., et al. 2020. Formation of novel N-acetylcysteine-hemin adducts abrogates hemin-induced cytotoxicity and suppresses the NRF2-driven stress response in human pro-erythroid K562 cells. Eur. J. Pharmacol. 880: 173077.

RESEARCH USE

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