SANTA CRUZ BIOTECHNOLOGY, INC.

NRF-1 (H-300): sc-33771

BACKGROUND

Nuclear respiratory factor-1 (NRF-1) is a transcriptional activator that has been implicated in the nuclear control of respiratory chain expression in mammalian cells. The NRF-1 gene is expressed during oogenesis and during the early stages of embryogenesis. *In vitro* studies have implicated NRF-1 in the transcriptional expression of nuclear genes required for mitochondrial respiratory function, as well as for other fundamental cellular activities. While most isolated wild-type and NRF-1$^{+/-}$ blastocysts continue to develop normally *in vitro,* NRF-1$^{-/-}$ blastocysts lack this ability, despite their normal morphology. NRF-1 is specifically required in the maintenance of mtDNA and respiratory chain function during early embryogenesis. NRF-1 also plays a key role in cellular adaptation to energy demands by translating physiological signals into an increased capacity for generating energy. Additionally, NRF-1 is a major transcription factor that binds the promoter in brain and testis.

CHROMOSOMAL LOCATION

Genetic locus: NRF1 (human) mapping to 7q32.2; Nrf1 (mouse) mapping to 6 A3.3.

SOURCE

NRF-1 (H-300) is a rabbit polyclonal antibody raised against amino acids 204-503 mapping at the C-terminus of NRF-1 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-33771 X, 200 µg/0.1 ml.

APPLICATIONS

NRF-1 (H-300) is recommended for detection of NRF-1 long and short isoforms of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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).

NRF-1 (H-300) is also recommended for detection of NRF-1 long and short isoforms in additional species, including equine, canine and avian.

Suitable for use as control antibody for NRF-1 siRNA (h): sc-38105, NRF-1 siRNA (m): sc-38106, NRF-1 shRNA Plasmid (h): sc-38105-SH, NRF-1 shRNA Plasmid (m): sc-38106-SH, NRF-1 shRNA (h) Lentiviral Particles: sc-38105-V and NRF-1 shRNA (m) Lentiviral Particles: sc-38106-V.

NRF-1 (H-300) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.
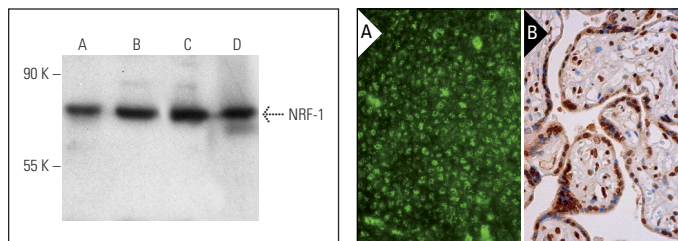
Molecular Weight of NRF-1: 68 kDa.

RESEARCH USE

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

STORAGE

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

DATA

NRF-1 (H-300): sc-33771. Western blot analysis of NRF-1 expression in U-2 OS (**A**), CCRF-CEM (**B**) and MOLT-4 (**C**) whole cell lysates and rat skeletal muscle tissue extract (**D**).

NRF-1 (H-300): sc-33771. Immunofluorescence staining of normal mouse lymph node frozen section showing nuclear staining (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human placenta tissue showing nuclear staining of trophoblastic cells (**B**).

SELECT PRODUCT CITATIONS

1. Piantadosi, C.A. and Suliman, H.B. 2006. Mitochondrial transcription factor A induction by redox activation of nuclear respiratory factor 1. J. Biol. Chem. 281: 324-333.

2. Faraonio, R. and Vergara, P. 2006. p53 suppresses the Nrf2-dependent transcription of antioxidant response genes. J. Biol. Chem. 281: 39776-39784.

3. Sanchis-Gomar, F., et al. 2013. PPARγ agonist pioglitazone does not enhance performance in mice. Drug Test. Anal. 6: 922-929.

4. Hart, N., et al. 2014. Resveratrol attenuates exercise-induced adaptive responses in rats selectively bred for low running performance. Dose Response 12: 57-71.

5. Khraiwesh, H., et al. 2014. Mitochondrial ultrastructure and markers of dynamics in hepatocytes from aged, calorie restricted mice fed with different dietary fats. Exp. Gerontol. 56: 77-88.

6. Wang, N., et al. 2014. Obesity accelerates ovarian follicle development and follicle loss in rats. Metabolism 63: 94-103.

7. Brioche, T., et al. 2014. Growth hormone replacement therapy prevents sarcopenia by a dual mechanism: improvement of protein balance and of antioxidant defenses. J. Gerontol. A Biol. Sci. Med. Sci. 69: 1186-1198.

8. Ortiz, F., et al. 2015. Melatonin blunts the mitochondrial/NLRP3 connection and protects against radiation-induced oral mucositis. J. Pineal Res. 58: 34-49.

MONOS Satisfaction Guaranteed

Try **NRF-1 (147.1): sc-101102**, our highly recommended monoclonal alternative to NRF-1 (H-300).