

# Ref-1 (C-20): sc-334

## BACKGROUND

The role of transcription factors in the regulation of gene expression is well established. Although the activity of these factors can be regulated by phosphorylation, evidence has indicated regulation of DNA binding mediated by changes in reduction-oxidation (redox) status. Mutational analysis has identified a single conserved cysteine residue mapping within the DNA binding domains of Fos and Jun. Chemical oxidation or modification of this cysteine residue inhibits the DNA binding activity of Fos and Jun. A similar mode of regulation has been recently proposed for other nuclear transcription factors. Oxidation is reversible by these compounds or by a cellular redox/DNA repair protein identified originally as Ref-1 (redox factor 1). Ref-1 is identical to a previously characterized DNA repair enzyme designated HAP1, APE or APEX.

## CHROMOSOMAL LOCATION

Genetic locus: APEX1 (human) mapping to 14q11.2; Apex1 (mouse) mapping to 14 C1.

## SOURCE

Ref-1 (C-20) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping at the C-terminus of Ref-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.

Blocking peptide available for competition studies, sc-334 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-334 X, 200 µg/0.1 ml.

## APPLICATIONS

Ref-1 (C-20) is recommended for detection of Ref-1 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Ref-1 (C-20) is also recommended for detection of Ref-1 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for Ref-1 siRNA (h): sc-29470, Ref-1 siRNA (m): sc-36401, Ref-1 shRNA Plasmid (h): sc-29470-SH, Ref-1 shRNA Plasmid (m): sc-36401-SH, Ref-1 shRNA (h) Lentiviral Particles: sc-29470-V and Ref-1 shRNA (m) Lentiviral Particles: sc-36401-V.

Ref-1 (C-20) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of Ref-1: 37 kDa.

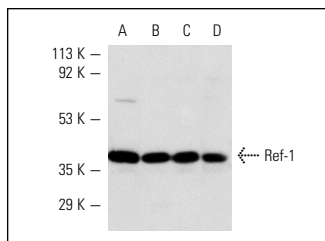
## STORAGE

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.

## DATA



Ref-1 (C-20): sc-334. Western blot analysis of Ref-1 expression in Y79 (A), HeLa (B), C32 (C) and NIH/3T3 (D) nuclear extracts.

## SELECT PRODUCT CITATIONS

- Hirota, K., et al. 1997. AP-1 transcriptional activity is regulated by a direct association between thioredoxin and Ref-1. *Proc. Natl. Acad. Sci. USA* 94: 3633-3638.
- Nicholl, I.D., et al. 1997. Reconstitution of human base excision repair with purified proteins. *Biochemistry* 36: 7557-7566.
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- Jakubikova, J., et al. 2006. Effect of isothiocyanates on nuclear accumulation of NF-κB, Nrf2, and thioredoxin in caco-2 cells. *J. Agric. Food Chem.* 54: 1656-1662.
- Narciso, L., et al. 2007. Terminally differentiated muscle cells are defective in base excision DNA repair and hypersensitive to oxygen injury. *Proc. Natl. Acad. Sci. USA* 104: 17010-17015.
- Qu, J., et al. 2007. Nitric oxide controls nuclear export of APE1/Ref-1 through S-nitrosation of cysteines 93 and 310. *Nucleic Acids Res.* 35: 2522-2532.
- Merluzzi, S., et al. 2008. TRAF2 and p38 are involved in B cells CD40-mediated APE/Ref-1 nuclear translocation: a novel pathway in B cell activation. *Mol. Immunol.* 45: 76-86.
- Son, Y.O., et al. 2009. Apoptosis-inducing factor plays a critical role in caspase-independent, pyknotic cell death in hydrogen peroxide-exposed cells. *Apoptosis* 14: 796-808.



Try **Ref-1 (C-4): sc-17774** or **Ref-1 (H-6): sc-55498**, our highly recommended monoclonal alternatives to Ref-1 (C-20). Also, for AC, HRP, FITC, PE, Alexa Fluor<sup>®</sup> 488 and Alexa Fluor<sup>®</sup> 647 conjugates, see **Ref-1 (C-4): sc-17774**.