

OGG1/2 (H-300): sc-33181

BACKGROUND

8-oxoguanine (8-oxoG), an oxidized form of guanine, is produced by reactive oxygen species in both DNA and nucleotide pools during normal aging. Accumulation of 8-oxoG increases the occurrence of A:T to C:G or G:C to T:A transversion mutation, because 8-oxoG forms a stable basepair with adenine as well as with cytosine. OGG1 (for 8-oxoG DNA glycosylase, also designated MMH) is a DNA repair enzyme that corrects these mutations. Inactivation of the OGG1 gene leads to a mutator phenotype, characterized by the increase in G:C to T:A transversions. The OGG1 gene encodes eight isoforms (OGG1A-C, OGG2A-E) which result from alternative splicing of a single messenger RNA. The OGG1A splice variant is the most prevalent form and localizes to the nucleus, whereas the OGG2A splice variant is targeted to the mitochondrion.

REFERENCES

- Shibutani, S., et al. 1991. Insertion of specific bases during DNA synthesis past the oxidation-damaged base 8-oxodG. *Nature* 349: 431-434.
- Cheng, K.C., et al. 1992. 8-hydroxyguanine, an abundant form of oxidative DNA damage, causes GT and AC substitutions. *J. Biol. Chem.* 267: 166-172.
- Ames, B.N., et al. 1993 Oxidants, antioxidants and the degenerative diseases of aging. *Proc. Natl. Acad. Sci. USA* 90: 7915-7922.
- Hayakawa, M., et al. 1993. Age-associated damage in mitochondrial DNA in human hearts. *Mol. Cell. Biochem.* 119: 95-103.
- Nishioka, K., et al. 1999. Expression and differential intracellular localization of two major forms of human 8-oxoguanine DNA glycosylase encoded by alternatively spliced OGG1 mRNAs. *Mol. Biol. Cell* 10: 1637-1652.
- Boiteux, S., et al. 2000. The human OGG1 gene: structure, functions and its implication in the process of carcinogenesis. *Arch. Biochem. Biophys.* 377: 1-8.

CHROMOSOMAL LOCATION

Genetic locus: OGG1 (human) mapping to 3p25.3; Ogg1 (mouse) mapping to 6 E3.

SOURCE

OGG1/2 (H-300) is a rabbit polyclonal antibody raised against amino acids 1-300 mapping at the N-terminus of OGG1 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.

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.

APPLICATIONS

OGG1/2 (H-300) is recommended for detection of all OGG1 and OGG2 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

OGG1/2 (H-300) is also recommended for detection of all OGG1 and OGG2 isoforms in additional species, including bovine.

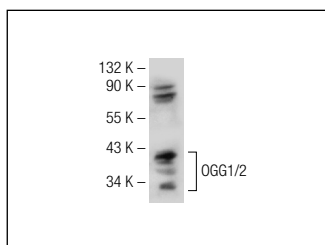
Suitable for use as control antibody for OGG1/2 siRNA (h): sc-43983, OGG1 siRNA (m): sc-44850, OGG1/2 shRNA Plasmid (h): sc-43983-SH, OGG1 shRNA Plasmid (m): sc-44850-SH, OGG1/2 shRNA (h) Lentiviral Particles: sc-43983-V and OGG1 shRNA (m) Lentiviral Particles: sc-44850-V.

Molecular Weight of OGG-1: 38 kDa.

Molecular Weight of OGG-2: 36 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200 or Jurkat whole cell lysate: sc-2204.

DATA



OGG1/2 (H-300): sc-33181. Western blot analysis of OGG1/2 expression in HeLa whole cell lysate.

SELECT PRODUCT CITATIONS

- Hill, J.W., et al. 2008. OGG1 is degraded by calpain following oxidative stress and cisplatin exposure. *DNA Repair* 7: 648-654.
- Yadav, V.R., et al. 2013. Pharmacologic suppression of inflammation by a diphenyldifluoroketone, EF24, in a rat model of fixed-volume hemorrhage improves survival. *J. Pharmacol. Exp. Ther.* 347: 346-356.

PROTOCOLS

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