SANTA CRUZ BIOTECHNOLOGY, INC.

8-oxoG DNA Lesion (483.15): sc-130914

BACKGROUND

DNA (deoxyribonucleic acid) is the hereditary material of all known living organisms and some viruses. Critical in the long-term storage of information as well as in development and functioning, DNA consists of two long, anti-parallel nucleotide polymers containing sugar backbones and phosphate groups that are held together by ester bonds, forming a double helix. 8-oxoG (8-oxoguanine) is a mutagenic lesion involved in oxidative DNA damage. 8-oxoG is able to mispair with adenine (A) during DNA replication, posing a threat to genome stability. All organisms express a minimum of two types of 8-oxoG-DNA glycosylase (OGG) in order to repair 8-oxoG.

REFERENCES

1. Hazra, T.K., et al. 1998. The presence of two distinct 8-oxoguanine repair enzymes in human cells: their potential complementary roles in preventing mutation. Nucleic Acids Res. 26: 5116-5122.
2. Boiteux, S. and le Page, F. 2001. Repair of 8-oxoguanine and Ogg1-incised apurinic sites in a CHO cell line. Prog. Nucleic Acid Res. Mol. Biol. 68: 95-105.
3. Hazra, T.K., et al. 2001. Multiple DNA glycosylases for repair of 8-oxoguanine and their potential *in vivo* functions. Prog. Nucleic Acid Res. Mol. Biol. 68: 193-205.
4. Kemeleva, E.A., et al. 2006. Immunofluorescent detection of 8-oxoguanine DNA lesions in liver cells from aging OXYS rats, a strain prone to overproduction of free radicals. Mutat. Res. 599: 88-97.
5. Russo, M.T., et al. 2007. Different DNA repair strategies to combat the threat from 8-oxoguanine. Mutat. Res. 614: 69-76.
6. Damsma, G.E. and Cramer, P. 2009. Molecular basis of transcriptional mutagenesis at 8-oxoguanine. J. Biol. Chem. 284: 31658-31663.

SOURCE

8-oxoG DNA Lesion (483.15) is a mouse monoclonal antibody raised against DNA containing 8-oxoG lesions.

PRODUCT

Each vial contains 200 µg IgM kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

8-oxoG DNA Lesion (483.15) is recommended for detection of 8-oxoG Lesions by 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).

Molecular Weight of 8-oxoG DNA Lesion: 165 kDa.

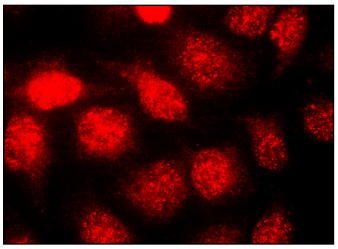
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

STORAGE

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

DATA



8-oxoG DNA Lesion (483.15): sc-130914. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization.

SELECT PRODUCT CITATIONS

1. Wolyniec, K., et al. 2012. The E6AP E3 ubiquitin ligase regulates the cellular response to oxidative stress. Oncogene 32: 3510-3519.
2. Tripathi, K., et al. 2016. Detection and evaluation of estrogen DNA-adducts and their carcinogenic effects in cultured human cells using biotinylated estradiol. Mol. Carcinog. 56: 1010-1020.
3. Gilmore, B.L., et al. 2017. Molecular analysis of BRCA1 in human breast cancer cells under oxidative stress. Sci. Rep. 7: 43435.
4. Ullah, I., et al. 2018. Dental pulp-derived stem cells can counterbalance peripheral nerve injury-induced oxidative stress and supraspinal neuroinflammation in rat brain. Sci. Rep. 8: 15795.
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7. Jiang, Z., et al. 2020. Oxidative DNA damage modulates DNA methylation pattern in human breast cancer 1 (BRCA1) gene via the crosstalk between DNA polymerase β and a *de novo* DNA methyltransferase. Cells 9: 225.
8. Iglesias-Pedraz, J.M. and Comai, L. 2020. Measurements of hydrogen peroxide and oxidative DNA damage in a cell model of premature aging. Methods Mol. Biol. 2144: 245-257.
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10. Kapralova, K., et al. 2020. Oxidative DNA damage, inflammatory signature, and altered erythrocytes properties in Diamond-Blackfan anemia. Int. J. Mol. Sci. 21: 9652.

RESEARCH USE

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