SANTA CRUZ BIOTECHNOLOGY, INC.

8-OHdG (E-8): sc-393871

BACKGROUND

DNA or RNA damage can hinder the ability of a cell to carry out its function and can significantly increase the likelihood of tumor formation. One of the causes of damaged DNA and RNA is oxidation of the bases. 8-hydroxy-2'-deoxyguanosine, 8-hydroxyguanine (8-OHdG) and 8-hydroxyguanosine are all markers of oxidative damage to RNA and DNA. 8-hydroxy-2'-deoxyguanosine is produced by reactive oxygen and nitrogen species, including hydroxyl radical and peroxynitrite. 8-hydroxyguanine is one of the major base lesions involved in mutagenesis and is caused by ionizing radiation and radiomimetic agents. 8-hydroxyguanosine induces a transversion of G to T in DNA, which may be mutagenic. Markers of DNA and RNA damage are useful research tools when studying the effects of this type of damage.

REFERENCES

1. Musarrat, J., et al. 1996. Prognostic and aetiological relevance of 8-hydroxyguanosine in human breast carcinogenesis. Eur. J. Cancer 32A: 1209-1214.
2. Abe, T., et al. 2002. Alteration of 8-hydroxyguanosine concentrations in the cerebrospinal fluid and serum from patients with Parkinson's disease. Neurosci. Lett. 336: 105-108.

SOURCE

8-OHdG (E-8) is a mouse monoclonal antibody raised against 8-hydroxy-2'-deoxyguanosine (8-OHdG)-BCP conjugate of synthetic origin.

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.

8-OHdG (E-8) is available conjugated to agarose (sc-393871 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-393871 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; and to either phycoerythrin (sc-393871 PE), fluorescein (sc-393871 FITC) or Alexa Fluor® 488 (sc-393871 AF488) or Alexa Fluor® 647 (sc-393871 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM.

APPLICATIONS

8-OHdG (E-8) is recommended for detection of 8-OHdG (8-hydroxy-2'-deoxyguanosine) by 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).

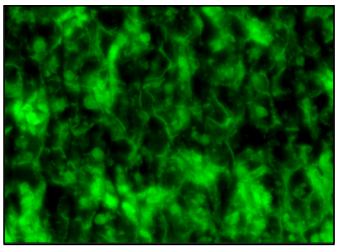
RECOMMENDED SUPPORT REAGENTS

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. 2) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

STORAGE

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

DATA



8-OHdG (E-8): sc-393871. Immunofluorescence staining of formalin-fixed, paraffin-embedded red snapper liver tissue showing 8-OHdG staining in hepatocytes. Kindly provided by Saydur Rahman, Ph.D., Marine Science Institute, University of Texas.

SELECT PRODUCT CITATIONS

1. Rai, P., et al. 2015. Hyperglycemia enhances kidney cell injury in HIVAN through down-regulation of vitamin D receptors. Cell. Signal. 27: 460-469.
2. Hou, D., et al. 2017. Berberine induces oxidative DNA damage and impairs homologous recombination repair in ovarian cancer cells to confer increased sensitivity to PARP inhibition. Cell Death Dis. 8: e3070.
3. Hou, D., et al. 2018. Increased oxidative stress mediates the antitumor effect of PARP inhibition in ovarian cancer. Redox Biol. 17: 99-111.
4. Tian, C., et al. 2019. Therapeutic effects of Nrf2 activation by bardoxolone methyl in chronic heart failure. J. Pharmacol. Exp. Ther. 371: 642-651.
5. Ma, H., et al. 2020. Inhibition of thyroid hormone signaling protects retinal pigment epithelium and photoreceptors from cell death in a mouse model of age-related macular degeneration. Cell Death Dis. 11: 24.
6. Bu, J., et al. 2020. Hyperlipidemia affects tight junctions and pump function in the corneal endothelium. Am. J. Pathol. 190: 563-576.
7. Han, X., et al. 2020. Autolysosomal degradation of cytosolic chromatin fragments antagonizes oxidative stress-induced senescence. J. Biol. Chem. 295: 4451-4463.
8. Lin, C.Y., et al. 2020. Suppression of drug-resistant non-small-cell lung cancer with inhibitors targeting minichromosomal maintenance protein. J. Med. Chem. 63: 3172-3187.
9. Wang, B., et al. 2020. D609 protects retinal pigmented epithelium as a potential therapy for age-related macular degeneration. Signal Transduct. Target. Ther. 5: 20.
10. Karayigit, M.O. and Dincel, G.C. 2020. Role of ADAMTS-13 and nNOS expression in neuropathogenesis of listeric encephalitis of small ruminants. Biotech. Histochem. 95: 584-596.

RESEARCH USE

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