SANTA CRUZ BIOTECHNOLOGY, INC.

8-OHdG (K-20): sc-130085

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-hydroxy-guanosine 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

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2. Parker, A.R., et al. 2002. 8-hydroxyguanosine repair is defective in some microsatellite stable colorectal cancer cells. Cancer Res. 62: 7230-7233.
3. 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.
4. Winter, D.B., et al. 2003. Normal somatic hypermutation of Ig genes in the absence of 8-hydroxyguanine-DNA glycosylase. J. Immunol. 170: 5558-5562.
5. Russo, M.T., et al. 2004. Accumulation of the oxidative base lesion 8-hydroxyguanine in DNA of tumor-prone mice defective in both the MYH and OGG1 DNA glycosylases. Cancer Res. 64: 4411-4414.
6. Okugawa, Y., et al. 2006. UVA-induced degradation of 8-hydroxyguanine in oligonucleotide and the effect on its activities in yeast oligonucleotide transformation assay. Nucleic Acids Symp. Ser. 48: 287-288.
7. Watanabe, E., et al. 2006. Significance of 8-hydroxy-2'-deoxyguanosine levels in patients with idiopathic dilated cardiomyopathy. J. Card. Fail. 12: 527-532.
8. Noblitt, S.D., et al. 2007. The role of metal ion binding in generating 8-hydroxy-2'-deoxyguanosine from the nucleoside 2'-deoxyguanosine and the nucleotide 2'-deoxyguanosine-5'-monophosphate. J. Inorg. Biochem. 101: 536-542.
9. Kuo, H.W., et al. 2007. Urinary 8-hydroxy-2'-deoxyguanosine (8-OHdG) and genetic polymorphisms in breast cancer patients. Mutat. Res. 631: 62-68.

STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.

SOURCE

8-OHdG (K-20) is a goat polyclonal antibody raised against a 8-OHdG conjugate.

PRODUCT

Each vial contains 100 µl serum.

APPLICATIONS

8-OHdG (K-20) is recommended for detection of 8-OHdG modified proteins by immunofluorescence (starting dilution to be determined by researcher, dilution range 1:100-1:1000) and immunohistochemistry (including paraffin-embedded sections) (starting dilution to be determined by researcher, dilution range 1:100-1:1000.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 2) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

RESEARCH USE

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