

Product Specifications

Custom Oligo Synthesis, antisense oligos, RNA oligos, chimeric oligos, Fluorescent dyes, Affinity Ligands, Spacers & Linkers, Duplex Stabilizers, Minor bases, labeled oligos, Molecular Beacons, siRNA, phosphonates Locked Nucleic Acids (LNA); 2'-5' linked Oligos

Oligo Modifications

For research use only. Not for use in diagnostic procedures for clinical purposes.

8-Oxo dG

Category Minor Bases

Modification Code 8-Oxo-dG

Reference Catalog Number 26-6434

5 Prime Y

Internal Y

Molecular Weight(mw) 345.21

8-Oxo deoxyguanosine (8-Oxo dG)

8-Oxo-deoxyguanosine (8-Oxo-dG) is classified as an oxidized nucleotide, and is primarily used in studies of oxidative DNA damage and associated repair mechanisms. In the cell, 8-Oxo-dG DNA lesions are formed by reaction with reactive oxygen species (ROS) generated either via normal oxidative metabolic processes, UV ionizing radiation, or 2-nitropropane (an industrial solvent and component of tobacco smoke) (1). 8-Oxo-dG can potentially mispair with A (leading to G-to-T transversions) (2). As a single-base lesion, 8-Oxo-dG is removed by the base excision repair (BER) mechanism and the native guanine base restored (3). In the cell, 8-Oxo-dG does not appear to be strongly mutagenic (4). **References** 1. Feig, D.I., Sowers, L.C., Loeb, L.A. Reverse chemical mutagenesis: Identification of the mutagenic lesions resulting from reactive oxygen species-mediated damage to DNA. *Proc. Natl. Acad. Sci. USA.* (1994), **91**: 6609-6613.

2. Neeley, W.L., Essigmann, J.M. Mechanisms of formation, genotoxicity, and mutation of guanine oxidation products. *Chem. Res. Toxicol.* (2006), **19**: 491-505.

3. Nilsen, H., Krokan, H.E. Base excision repair in a network of defence and tolerance. *Carcinogenesis* (2001), **22**: 987-998. 4. Kalam, M.A., Haraguchi, K., Chandani, S., Loechler, E.L., Moriya, M., Greenberg, M.M., Basu, A.K Genetic effects of oxidative DNA damages: comparative mutagenesis of the imidazole ring-opened formamidopyrimidines (Fapy lesions) and 8-oxo-purines in simian kidney cells. *Nucleic Acids Res.* (2006), **34**: 2305-2315.

