## 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 | $8-O x o-d G$ |
| Reference Catalog Number | $26-6434$ |
| 5 Prime | Y |
| 3 Prime | Y |
| Internal | Y |
| Molecular Weight(mw) | 345.21 |



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.

