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PRODUCT INFORMATION

8-Hydroxy-2'-deoxyguanosine
Item No. 89320

CAS Registry No.:	88847-89-6
Formal Name:	2'-deoxy-7,8-dihydro-8-oxo-guanosine
Synonyms:	7,8-dihydro-8-oxo-2'-Deoxyguanosine,
	8-oxo-2'-Deoxyguanosine,
	8-oxo-7,8-dihydro-2'-Deoxyguanosine,
	8-oxo-dG, 8-Hydroxydeoxyguanosine,
	8-OH-dG, 8-Oxodeoxyguanosine
MF:	$C_{10}H_{13}N_5O_5$
FW:	283.2
Purity:	≥98%
UV/Vis.:	λ_{max}: 249, 296 nm
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥4 years
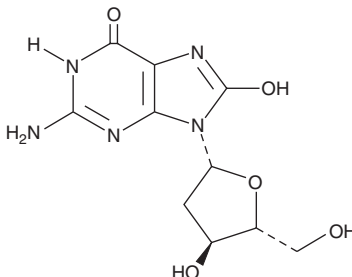
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

8-Hydroxy-2'-deoxyguanosine is supplied as a crystalline solid. A stock solution may be made by dissolving the 8-hydroxy-2'-deoxyguanosine in the solvent of choice, which should be purged with an inert gas. 8-Hydroxy-2'-deoxyguanosine is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of 8-hydroxy-2'-deoxyguanosine in these solvents is approximately 20 and 30 mg/ml, respectively. The solubility of 8-hydroxy-2'-deoxyguanosine in 0.1 M HCl is approximately 10 mg/ml.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of 8-hydroxy-2'-deoxyguanosine can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of 8-hydroxy-2'-deoxyguanosine in PBS (pH 7.2) is approximately 3 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

8-Hydroxy-2'-deoxyguanosine is produced by oxidative damage of DNA by reactive oxygen and nitrogen species, including hydroxyl radical and peroxynitrite. It serves as a measure of oxidative stress in biological systems.[1-4]

References

1. Floyd, R.A. Role of oxygen free radicals in carcinogenesis and brain ischemia. *FASEB J.* **4(9)**, 2587-2597 (1990).
2. Beckman, K.B. and Ames, B.N. Oxidative decay of DNA. *J. Biol. Chem.* **272(32)**, 19633-19636 (1997).
3. Spencer, J.P.E., Jenner, A., Chimel, K., *et al.* DNA strand breakage and base modification induced by hydrogen peroxide treatment of human respiratory tract epithelial cells. *FEBS Lett.* **374(2)**, 233-236 (1995).
4. Epe, B., Ballmaier, D., Roussyn, I., *et al.* DNA damage by peroxynitrite characterized with DNA repair enzymes. *Nucleic Acids Res.* **24(21)**, 4105-4110 (1996).