

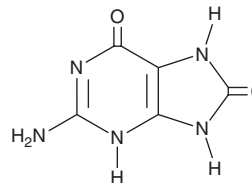
PRODUCT INFORMATION



8-Oxoguanine

Item No. 44854

CAS Registry No.: 5614-64-2
Formal Name: 2-amino-7,9-dihydro-1H-purine-6,8-dione
Synonyms: 2-Amino-6,8-dihydroxypurine, 7,8-Dihydro-8-oxoguanine, 8-Hydroxyguanine, NSC 22720
MF: C₅H₅N₅O₂
FW: 167.1
Purity: ≥95%
Supplied as: A 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-Oxoguanine is supplied as a solid. 8-Oxoguanine is slightly soluble in aqueous solutions. To enhance aqueous solubility, dilute the organic solvent solution into aqueous buffers or isotonic saline. If performing biological experiments, ensure the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. We do not recommend storing the aqueous solution for more than one day.

Description

8-Oxoguanine is an oxidized form of the purine base guanine (Item No. 34248).¹ It is formed by oxidative degradation of DNA by hydroxyl radicals and has commonly been used as a measure of oxidative stress in biological systems.²⁻⁴ 8-Oxoguanine accumulates in the hippocampal DNA and RNA of senescence-accelerated prone mouse 8 (SAMP8) mice, which display early aging and cognitive decline.⁵ The levels of 8-oxoguanine are also increased in the mitochondrial and nuclear DNA of various brain regions in postmortem tissue from patients with Alzheimer's disease, but increased urinary levels of 8-oxoguanine are positively correlated with increased survival in patients with stage III or IV cancer receiving radiotherapy.^{6,7}

References

1. Wang, J., Xiong, S., Xie, C., *et al.* Increased oxidative damage in nuclear and mitochondrial DNA in Alzheimer's disease. *2005* **93(4)**, 953-962 (2005).
2. 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).
3. Jaruga, P., Zastawny, T.H., Skokowski, J., *et al.* Oxidative DNA base damage and antioxidant enzyme activities in human lung cancer. *FEBS Lett.* **341**, 59-64 (1994).
4. Zastawny, T.H., Altman, S.A., Randers-Eichhorn, L., *et al.* DNA base modifications and membrane damage in cultured mammalian cells treated with iron ions. *Free Radic. Biol. Med.* **18**, 1013-1022 (1995).
5. Zheng, J.-D., Hei, A.-L., Zuo, P.-P., *et al.* Age-related alterations in the expression of MTH2 in the hippocampus of the SAMP8 mouse with learning and memory deterioration. *J. Neurol. Sci.* **287(1-2)**, 188-196 (2009).
6. Roszkowski, K. and Olinski, R. Urinary 8-oxoguanine as a predictor of survival in patients undergoing radiotherapy. *Cancer Epidemiol. Biomarkers Prev.* **21**, 629-634 (2012).
7. Wang, J., Xiong, S., Xie, C., *et al.* Increased oxidative damage in nuclear and mitochondrial DNA in Alzheimer's disease. *2005* **93(4)**, 953-962 (2005).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

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CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897
[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM