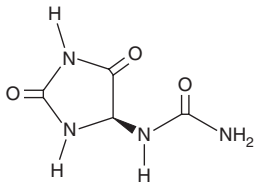
# PRODUCT INFORMATION

## Allantoin

*Item No. 30204*

**CAS Registry No.:** 97-59-6
**Formal Name:** N-(2,5-dioxo-4-imidazolidinyl)-urea
**Synonyms:** (±)-Allantoin, NSC 7606, SD 101, 5-Ureidohydantoin
**MF:** $C_4H_6N_4O_3$
**FW:** 158.1
**Purity:** ≥95%
**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

Allantoin is supplied as a crystalline solid. A stock solution may be made by dissolving the allantoin in the solvent of choice, which should be purged with an inert gas. Allantoin is soluble in the organic solvent DMSO at a concentration of approximately 1 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 allantoin can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of allantoin in PBS, pH 7.2, is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

Allantoin is a product of purine and uric acid metabolism.[1] It is formed through oxidation of uric acid by urate oxidase in most mammals but is formed only through non-enzymatic oxidation by free radicals in humans. Urinary levels of allantoin are increased prior to the onset of Alzheimer's disease symptoms in mice expressing mutations in amyloid precursor protein and tau (*APP/tau*) but not during the early/middle stage of the disease, indicating its potential use as a biomarker for predicting Alzheimer's disease onset.[2] Due to the formation of allantoin by free radicals in humans, increased urinary levels are a potential biomarker for oxidative stress status.[1]

### References


1. Martinez-Moral, M.-P., and Kannan, K. Allantoin as a marker of oxidative stress: Inter- and intraindividual variability in urinary concentrations in healthy individuals. *Environ. Sci. Technol. Lett.* **6**, 283-288 (2019).
2. Fukuhara, K., Ohno, A., Ota, Y., *et al.* NMR-based metabolomics of urine in a mouse model of Alzheimer's disease: Identification of oxidative stress biomarkers. *J. Clin. Biochem. Nutr.* **52(2)**, 133-138 (2013).





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