

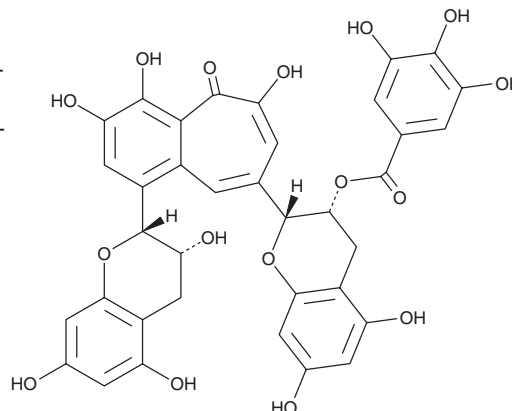
# PRODUCT INFORMATION



## Theaflavin-3-gallate

Item No. 31510

**CAS Registry No.:** 30462-34-1  
**Formal Name:** 3,4,5-trihydroxy-benzoic acid, (2R,3R)-2-[1-[(2R,3R)-3,4-dihydro-3,5,7-trihydroxy-2H-1-benzopyran-2-yl]-3,4,6-trihydroxy-5-oxo-5H-benzocyclohepten-8-yl]-3,4-dihydro-5,7-dihydroxy-2H-1-benzopyran-3-yl ester  
**Synonyms:** TF<sub>2A</sub>, Theaflavin Monogallate A  
**MF:** C<sub>36</sub>H<sub>28</sub>O<sub>16</sub>  
**FW:** 716.6  
**Purity:** ≥98%  
**Supplied as:** A crystalline solid  
**Storage:** -20°C  
**Stability:** ≥4 years  
**Item Origin:** Plant/*Camellia sinensis*



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

Theaflavin-3-gallate is supplied as a crystalline solid. A stock solution may be made by dissolving the theaflavin-3-gallate in the solvent of choice, which should be purged with an inert gas. Theaflavin-3-gallate is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of theaflavin-3-gallate in ethanol and DMSO is approximately 10 mg/ml and approximately 25 mg/ml in DMF.

Theaflavin-3-gallate is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, theaflavin-3-gallate should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Theaflavin-3-gallate has a solubility of approximately 0.1 mg/ml in a 1:6 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

Theaflavin-3-gallate is a polyphenolic flavonoid that has been found in black tea (*C. sinensis*) and has diverse biological activities.<sup>1-3</sup> It scavenges singlet oxygen and hydrogen peroxide, as well as superoxide and hydroxide radicals (IC<sub>50</sub>s = 0.86, 0.45, 21.7, and 32.49 μM, respectively), in cell-free assays.<sup>1</sup> Theaflavin-3-gallate is cytotoxic to, and induces apoptosis in, OVCAR-3 and A2780/CP70 ovarian cancer, but not non-cancerous IOSE 364 ovarian epithelial, cells when used at concentrations of 20 and 40 μM.<sup>2</sup> It reduces oxazolone-induced ear edema and serum and ear levels of TNF-α, IFN-γ, and IL-12 in an oxazolone-sensitized mouse model of delayed-type hypersensitivity when administered at a dose of 50 mg/kg.<sup>3</sup>

### References

1. Wu, Y.-y., Li, W., Xu, Y., *et al.* Evaluation of the antioxidant effects of four main theaflavin derivatives through chemiluminescence and DNA damage analyses. *J. Zhejiang. Univ. Sci. B.* **12**(9), 744-751 (2011).
2. Gao, Y., Rankin, G.O., Tu, Y., *et al.* Inhibitory effects of the four main theaflavin derivatives found in black tea on ovarian cancer cells. *Anticancer Res.* **36**(2), 643-651 (2016).
3. Yoshino, K., Yamazaki, K., and Sano, M. Preventive effects of black tea theaflavins against mouse type IV allergy. *J. Sci. Food Agric.* **90**(12), 1983-1987 (2010).

#### 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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