

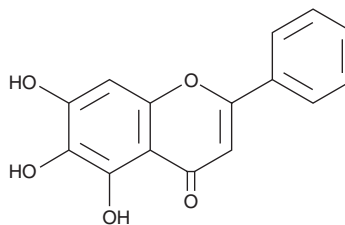
# PRODUCT INFORMATION



## Baicalein

Item No. 70610

**CAS Registry No.:** 491-67-8  
**Formal Name:** 5,6,7-trihydroxyflavone  
**MF:** C<sub>15</sub>H<sub>10</sub>O<sub>5</sub>  
**FW:** 270.2  
**Purity:** ≥95%  
**UV/Vis.:** λ<sub>max</sub>: 216, 277, 324 nm  
**Supplied as:** A crystalline solid  
**Storage:** -20°C  
**Stability:** ≥1 year



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

### Laboratory Procedures

Baicalein is supplied as a crystalline solid. A stock solution may be made by dissolving the baicalein in the solvent of choice. Baicalein is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of baicalein in these solvents is approximately 1.3, 28, and 52 mg/ml, respectively.

Baicalein is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, baicalein should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Baicalein has a solubility of approximately 26 mg/ml in a 1:1 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

Baicalein is a flavonoid originally isolated from the roots of *S. baicalensis* that has diverse biological activities.<sup>1</sup> It inhibits human platelet 12-lipoxygenase (12-LO) and human reticulocyte 15-LO-1 (IC<sub>50</sub>s = 0.64 and 1.6 μM, respectively) but is less potent at 15-LO-1 when the detergent Triton-X is present (IC<sub>50</sub> = 38 μM).<sup>2</sup> Baicalein inhibits lipid peroxidation, as assessed by production of thiobarbituric acid (TBARS; IC<sub>50</sub> = 5 μM), and inhibits growth of Huh-7, KIM-1, and HLF human hepatocellular carcinoma cells (IC<sub>50</sub>s = 17-70 μg/ml).<sup>3,4</sup> Baicalein increases intracellular calcium levels by increasing release from the endoplasmic reticulum and via PKC-dependent calcium channels in the plasma membrane, leading to increases in reactive oxygen species (ROS), caspase-9 and -3 activation, and apoptosis in ZR-75-1 human breast cancer cells.<sup>5</sup> Baicalein increases levels of peroxisome proliferator-activated receptor β/δ (PPARβ/δ) in BV-2 microglia and primary microglia and decreases the level of 12- and 15-LO products.<sup>6</sup> It also decreases symptoms of experimental autoimmune encephalomyelitis (EAE) in a mouse model of multiple sclerosis, when administered at a dose of 75 mg/kg per day.

### References

1. Shibata, K., Iwata, S., and Nakamura, M. *Acta Phytochimica* **1**, 105-139 (1923).
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3. Matsuzaki, Y., Korokawa, N., Terai, S., et al. *Jpn. J. Cancer Res.* **87**(2), 170-177 (1996).
4. Gao, D., Sakurai, K., Katoh, M., et al. *Biochem. Mol. Biol. Int.* **39**(2), 215-225 (1996).
5. Chang, H.-T., Chou, C.-F., Kuo, D.-H., et al. *J. Nat. Prod.* **78**(7), 1624-1634 (2015).
6. Xu, J., Zhang, Y., Xiao, Y., et al. *Cell Death Dis.* **4**, e569 (2013).

#### 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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