

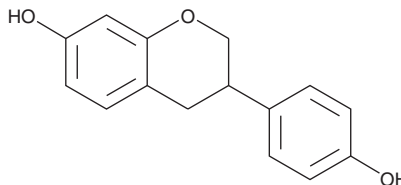
# PRODUCT INFORMATION



## (±)-Equol

Item No. 13184

**CAS Registry No.:** 94105-90-5  
**Formal Name:** 3,4-dihydro-3-(4-hydroxyphenyl)-2H-1-benzopyran-7-ol  
**MF:** C<sub>15</sub>H<sub>14</sub>O<sub>3</sub>  
**FW:** 242.3  
**Purity:** ≥98%  
**UV/Vis.:** λ<sub>max</sub>: 206, 225, 281 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

(±)-Equol is supplied as a crystalline solid. A stock solution may be made by dissolving the (±)-equol in the solvent of choice, which should be purged with an inert gas. (±)-Equol is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of (±)-equol in ethanol and DMSO is approximately 20 mg/ml and approximately 10 in DMF.

(±)-Equol is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, (±)-equol should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. (±)-Equol has a solubility of approximately 0.1 mg/ml in a 1:10 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

Equol is a nonsteroidal estrogen produced from the metabolism of the isoflavonoid phytoestrogen daidzein by human intestinal microflora.<sup>1,2</sup> The estrogen receptor (ER) binding activity of the naturally occurring (S)-enantiomer demonstrates greater affinity toward ERβ while the (R)-enantiomer demonstrates greater affinity towards ERα.<sup>1,2</sup> Synthesized as a racemic mixture, (±)-equol exhibits EC<sub>50</sub> values of 200 and 74 nM for human ERα and ERβ, respectively and induces breast cancer cell proliferation *in vitro* at concentrations as low as 100 nM.<sup>2,3</sup>

### References

1. Setchell, K.D.R., Clerici, C., Lephart, E.D., *et al.* S-equol, a potent ligand for estrogen receptor β, is the exclusive enantiomeric form of the soy isoflavone metabolite produced by human intestinal bacterial flora. *Am. J. Clin. Nutr.* **81(5)**, 1072-1079 (2005).
2. Muthyala, R.S., Ju, Y.H., Sheng, S., *et al.* Equol, a natural estrogenic metabolite from soy isoflavones: Convenient preparation and resolution of R- and S-equols and their differing binding and biological activity through estrogen receptors alpha and beta. *Bioorg. Med. Chem.* **12(6)**, 1559-1567 (2004).
3. Liu, H., Du, J., Hu, C., *et al.* Delayed activation of extracellular-signal-regulated kinase 1/2 is involved in genistein- and equol-induced cell proliferation and estrogen-receptor-α-mediated transcription in MCF-7 breast cancer cells. *J. Nutr. Biochem.* **21(5)**, 390-396 (2009).

#### 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