

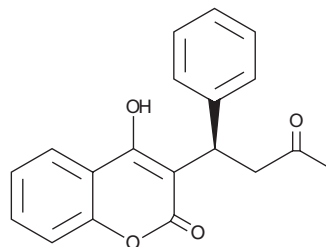
# Product Information



## (+)-Warfarin

Catalog No. 13526

**CAS Registry No.:** 5543-58-8  
**Formal Name:** 4-hydroxy-3-[(1R)-3-oxo-1-phenylbutyl]-2H-1-benzopyran-2-one  
**Synonym:** (R)-Warfarin  
**MF:** C<sub>19</sub>H<sub>16</sub>O<sub>4</sub>  
**FW:** 308.3  
**Purity:** ≥98%  
**Stability:** ≥2 years at -20°C  
**Supplied as:** A crystalline solid



### Laboratory Procedures

For long term storage, we suggest that (+)-warfarin be stored as supplied at -20°C. It should be stable for at least two years.

(+)-Warfarin is supplied as a crystalline solid. A stock solution may be made by dissolving the (+)-warfarin in an organic solvent purged with an inert gas. (+)-Warfarin is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of (+)-warfarin in ethanol is approximately 5 mg/ml and approximately 25 mg/ml in DMSO and DMF.

If aqueous stock solutions are required for biological experiments, they can best be prepared by diluting the organic solvent into aqueous buffers or isotonic saline. Ensure that 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.

Warfarin is an anti-coagulant used to prevent heart attacks, strokes, and the formation of blood clots. It interferes with the use of vitamin K in the required carboxylation of several vitamin K-dependent proteins in the clotting cascade, preventing the initiation of clotting. (+)-Warfarin differs from (-)-warfarin by being five times less potent as a vitamin K antagonist.<sup>1</sup> However the two isomers are metabolized *in vivo* by different pathways and (+)-warfarin has a longer terminal elimination half-life (35-58 hours) than (-)-warfarin (24-33 hours).<sup>2</sup>

### References

- Hirsh, J., Fuster, V., Ansell, J., *et al.* American Heart Association/American College of Cardiology Foundation guide to warfarin therapy. *J. Am. Coll. Cardiol.* **41**, 1633-1652 (2003).
- Ufer, M. Comparative pharmacokinetics of vitamin K antagonists warfarin, phenprocoumon and acenocoumarol. *Clin. Pharmacokinet.* **44**(12), 1227-1246 (2005).

### Related Products

(-)-Warfarin - Cat. No. 13531 • (±)-Warfarin - Cat. No. 13566 • (R)-(+)-Acenocoumarol - Cat. No. 9000336 • (S)-(-)-Acenocoumarol - Cat. No. 9000337  
• Acenocoumarol - Cat. No. 10010569

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**WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY: NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.**

### MATERIAL SAFETY DATA

This material should be considered hazardous until information to the contrary becomes available. Do not ingest, swallow, or inhale. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. This information contains some, but not all, of the information required for the safe and proper use of this material. Before use, the user must review the complete Material Safety Data Sheet, which has been sent via email to your institution.

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