

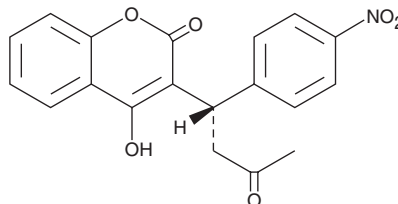
# Product Information



## (S)-(-)-Acenocoumarol

Catalog No. 9000337

**CAS Registry No.:** 66556-78-3  
**Formal Name:** 4-hydroxy-3-[(1S)-1-(4-nitrophenyl)-3-oxobutyl]-2H-1-benzopyran-2-one  
**Synonyms:** (S)-(-)-Acenocoumarin, (S)-(-)-Nicoumalone  
**MF:** C<sub>19</sub>H<sub>15</sub>NO<sub>6</sub>  
**FW:** 353.3  
**Purity:** ≥98%  
**Stability:** ≥2 years at -20°C  
**Supplied as:** A crystalline solid



### Laboratory Procedures

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

(S)-(-)-Acenocoumarol is supplied as a crystalline solid. A stock solution may be made by dissolving the (S)-(-)-acenocoumarol in an organic solvent purged with an inert gas. (S)-(-)-Acenocoumarol is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of (S)-(-)-acenocoumarol in these solvents is approximately 0.2, 10, and 20 mg/ml, respectively.

(S)-(-)-Acenocoumarol is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, (S)-(-)-acenocoumarol should first be dissolved in DMF and then diluted with the aqueous buffer of choice. (S)-(-)-Acenocoumarol has a solubility of approximately 0.25 mg/ml in a 1:3 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Acenocoumarol is a short-lived oral anticoagulant, which, like warfarin, functions by inhibiting vitamin K epoxide reductase. It has higher intrinsic anti-coagulant potency than warfarin and phenprocoumon, when evaluated *in vitro*. Acenocoumarol has a single chiral center that gives rise to two different enantiomeric forms. (S)-(-)-Acenocoumarol has a shorter plasma elimination half-life (1.8 hours) and faster plasma clearance (28.5 L/hour), compared to the (R)-(+)-enantiomer (6.6 hours, 1.9 L/hour).<sup>1</sup> The S-enantiomer undergoes extensive first-pass metabolism during absorption from the gastrointestinal tract, whereas (R)-(+)-acenocoumarol is rapidly absorbed and provides essentially complete oral bioavailability.<sup>1</sup> Perhaps related to these pharmacokinetic characteristics, (S)-(-)-acenocoumarol is less potent *in vivo* as an anti-coagulant than the (R)-(+)-enantiomer. As the clearance of acenocoumarol is ~20-fold faster than that for warfarin, the plasma concentrations of acenocoumarol are substantially lower than those for warfarin in patients receiving long-term treatment.

### Reference

1. Ufer, M. Comparative pharmacokinetics of vitamin K antagonists warfarin, phenprocoumon and acenocoumarol. *Clin. Pharmacokinet.* **44**(12), 1227-1246 (2005).

### Related Products

(+)-Warfarin - Cat. No. 13526 • (-)-Warfarin - Cat. No. 13531 • (±)-Warfarin - Cat. No. 13566 • (R)-(+)-Acenocoumarol - Cat. No. 9000336 • 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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