

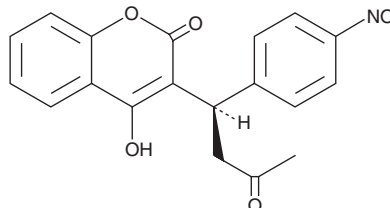
# PRODUCT INFORMATION



## (R)-Acenocoumarol

Item No. 9000337

**CAS Registry No.:** 66556-77-2  
**Formal Name:** 4-hydroxy-3-[(1R)-1-(4-nitrophenyl)-3-oxobutyl]-2H-1-benzopyran-2-one  
**Synonyms:** (R)-Acenocoumarin, (R)-Nicoumalone  
**MF:** C<sub>19</sub>H<sub>15</sub>NO<sub>6</sub>  
**FW:** 353.3  
**Purity:** ≥98%  
**UV/Vis.:** λ<sub>max</sub>: 291 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

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

(R)-Acenocoumarol is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, (R)-acenocoumarol should first be dissolved in DMF and then diluted with the aqueous buffer of choice. (R)-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.

### Description

Acenocoumarol is a short-lived oral anti-coagulant, which, like warfarin, functions by inhibiting vitamin K epoxide reductase. It has higher intrinsic anticoagulant potency than warfarin and phenprocoumon, when evaluated *in vitro*. Acenocoumarol has a single chiral center that gives rise to two different enantiomeric forms. (R)-Acenocoumarol has a longer plasma elimination half-life (6.6 hours) and slower plasma clearance (1.9 L/hour), compared to the (S)-enantiomer (1.8 hours, 28.5 L/hour).<sup>1</sup> The R-enantiomer is rapidly absorbed from the gastrointestinal tract with essentially complete oral bioavailability, whereas (S)-acenocoumarol undergoes extensive first-pass metabolism.<sup>1</sup> Perhaps related to these pharmacokinetic characteristics, (R)-acenocoumarol is more potent *in vivo* as an anti-coagulant than the (S)-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).

**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.

**WARRANTY AND LIMITATION OF REMEDY**  
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 04/10/2024

### 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