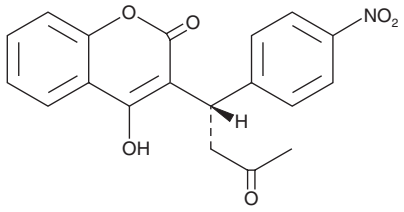
PRODUCT INFORMATION

(S)-Acenocoumarol

Item No. 9000336

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:	$C_{19}H_{15}NO_6$
FW:	353.3
Purity:	≥98%
UV/Vis.:	λ_{max}: 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

(S)-Acenocoumarol is supplied as a crystalline solid. A stock solution may be made by dissolving the (S)-acenocoumarol in the solvent of choice, which should be 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 02, 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.

Description

(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).[1] 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.[1] 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).

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