

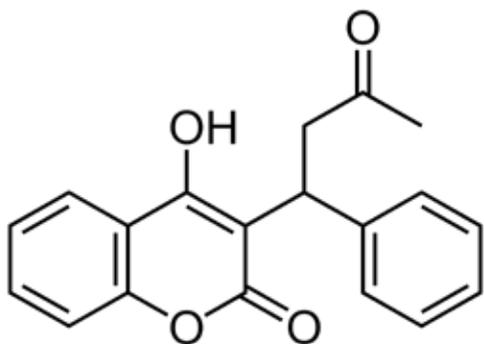
# Warfarin

## Available forms of warfarin:

- W0269 (±)-Warfarin
- W0272 S-(-)-Warfarin (>99% ee)
- W0273 R-(+)-Warfarin (>99% ee)
- W0270 (±)-Warfarin Sodium Clathrate
- W0274 S-(-)-Warfarin Sodium (>99% ee)
- W0275 R-(+)-Warfarin Sodium (>99% ee)

(±)-**Warfarin (W0269)** is an anticoagulant used to prevent the formation and migration of blood clots in blood vessels. Warfarin is one of the most commonly used anticoagulant compounds in clinical practice. Warfarin prevents blood clot formation by inhibiting subunit 1 of the vitamin K epoxide reductase complex<sup>1</sup>. As this enzyme is responsible for recycling oxidized vitamin K to its reduced form to stimulate signaling pathways involved in coagulation, inhibition of vitamin K epoxide reductase lower functional vitamin K levels and prevents the formation of coagulation factors II, VII, IX, and X.

LKT Laboratories carries racemic warfarin as well as optically active enantiomers **S-(-)-Warfarin (W0272)** and **R-(+)-Warfarin (W0273)**, both >99% ee. The two enantiomers are metabolized differently and yield different potencies; the S-enantiomer displays higher efficacy in the prevention of coagulation by a 5:1 ratio<sup>2</sup>. LKT Laboratories also carries the salt forms of these compounds, including (±)-**Warfarin Sodium Clathrate (W0269)**, **S-(-)-Warfarin Sodium (W0272)**, and **R-(+)-Warfarin Sodium**.



W0269 Warfarin

Warfarin has several shortcomings as an anticoagulant. The onset of action for warfarin is relatively slow and requires 1-2 days before effects are observed. This compound is sensitive to a wide variety of genetic polymorphisms and is metabolized by cytochrome P450 2C9; it also interacts with many other medications and foods<sup>3</sup>. As a result, dosage is highly variable among subjects, requiring diligent activity monitoring on an individual basis.

## References:

1. Wallin R, Martin LF. J Clin Invest. 1985 Nov;76(5):1879-84.
2. Hirsh J, Fuster V, et al. J Am Coll Cardiol. 2003 May 7;41(9):1633-52.
3. Tabrizi AR, Zehnbauer BA, Borecki IB, et al. J Am Coll Surg. 2002 Mar;194(3):267-73.

