(R)-Roscovitine
Item No. 10009569

CAS Registry No.: 186692-46-6
Formal Name: 2-[[9-(1-methylethyl)-6-[(phenylmethyl)amino]-9H-purin-2-yl]amino]-1-butanol
MF: C₁₉H₂₆N₆O
FW: 354.5
Purity: ≥98%
UV/Vis.: λₘₐₓ: 231, 291 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥2 years

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

(R)-Roscovitine is supplied as a crystalline solid. A stock solution may be made by dissolving the (R)-roscovitine in the solvent of choice. (R)-Roscovitine is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide, which should be purged with an inert gas. The solubility of (R)-roscovitine in these solvents is approximately 30, 50, and 3 mg/ml, respectively.

(R)-Roscovitine is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, (R)-roscovitine should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. (R)-Roscovitine has a solubility of approximately 0.3 mg/ml in a 1:2 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Cyclin-dependent kinases (CDKs) are key regulators of cell cycle progression and are therefore promising targets for cancer therapy. (R)-Roscovitine is a potent inhibitor of Cdk2/cyclin E with an IC₅₀ value of 0.1 µM. It also inhibits Cdk7/cyclin H, Cdk5/p35, and cell division cycle (cdc)/cyclin B with IC₅₀ values of 0.49, 0.16, and 0.65 µM, respectively. (R)-Roscovitine inhibits the growth of rapidly proliferating cells with an average IC₅₀ value of 15.2 µM against a panel of 19 human tumor cell lines. In murine models of polycystic kidney disease, (R)-roscovitine effectively inhibited disease progression at doses of 50-100 mg/kg.

References