

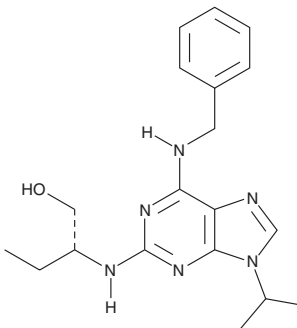
# Product Information



## (R)-Roscovitine

Catalog 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:** C<sub>19</sub>H<sub>26</sub>N<sub>6</sub>O  
**FW:** 354.5  
**Purity:** ≥98%  
**Stability:** ≥2 years at -20°C  
**Supplied as:** A crystalline solid



### Laboratory Procedures

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

(R)-Roscovitine is supplied as a crystalline solid. A stock solution may be made by dissolving the (R)-roscovitine in an organic solvent purged with an inert gas. (R)-Roscovitine is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of (R)-roscovitine in these solvents is approximately 10 mg/ml in ethanol and approximately 3 mg/ml in DMSO and DMF.

(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.

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 IC<sub>50</sub> value of 0.1 μM.<sup>1</sup> It also inhibits CDK7/cyclin H, CDK5/p35, and cell division cycle (cdc)/cyclin B with IC<sub>50</sub> values of 0.49, 0.16, and 0.65 μM, respectively.<sup>1-3</sup> (R)-Roscovitine inhibits the growth of rapidly proliferating cells with an average IC<sub>50</sub> value of 15.2 μM against a panel of 19 human tumor cell lines.<sup>1</sup> In murine models of polycystic kidney disease, (R)-roscovitine effectively inhibited disease progression at doses of 50-100 mg/kg.<sup>4</sup>

### References

1. McClue, S.J., Blake, D., Clarke, R., *et al.* *In vitro* and *in vivo* antitumor properties of the cyclin dependent kinase inhibitor CYC202 (R-roscovitine). *Int. J. Cancer* **102**, 463-468 (2002).
2. Meijer, L., Borgne, A., Mulner, O., *et al.* Biochemical and cellular effects of roscovitine, a potent and selective inhibitor of the cyclin-dependent kinases cdc2, cdk2 and cdk5. *Eur. J. Biochem.* **243**, 527-536 (1997).
3. Havlíček, L., Hanuš, J., Veselý, J., *et al.* Cytokinin-derived cyclin-dependent kinase inhibitors: Synthesis and cdc2 inhibitory activity of olomoucine and related compounds. *J. Med. Chem.* **40**, 408-412 (1997).
4. Bukanov, N.O., Smith, L.A., Klinger, K.W., *et al.* Long-lasting arrest of murine polycystic kidney disease with CDK inhibitor roscovitine. *Nature Letters* **444**, 949-952 (2006).

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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 under separate cover to the MSDS supervisor at your institution.

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