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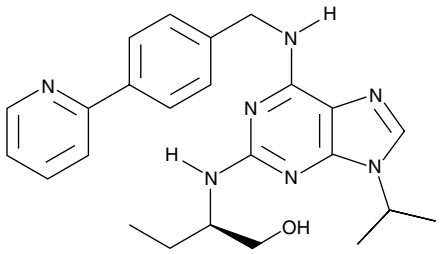
Product Information

(R)-CR8

Item No. 14006

CAS Registry No.: 294646-77-8
Formal Name: 2R-[[9-(1-methylethyl)-6-[[[4-(2-pyridinyl)phenyl]methyl]amino]-9H-purin-2-yl]amino]-1-butanol
MF: $C_{24}H_{29}N_7O$
FW: 431.5
Purity: ≥98%
Stability: ≥2 years at -20°C
Supplied as: A crystalline solid



Laboratory Procedures

For long term storage, we suggest that (R)-CR8 be stored as supplied at -20°C. It should be stable for at least two years.

(R)-CR8 is supplied as a crystalline solid. A stock solution may be made by dissolving the (R)-CR8 in the solvent of choice. (R)-CR8 is soluble in organic solvents such as ethanol and DMSO, which should be purged with an inert gas.

(R)-CR8 is sparingly soluble in aqueous solutions. To enhance aqueous solubility, dilute the organic solvent solution into aqueous buffers or isotonic saline. If performing biological experiments, ensure the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. 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.[1] (R)-CR8 is a second-generation analog of (R)-roscovitine (Item No. 10009569) that inhibits Cdk1/cyclin B, Cdk2/cyclin A, Cdk2/cyclin E, Cdk5/p25, and Cdk9/cyclin T with IC_{50} values of 0.09, 0.072, 0.041, 0.11, and 0.18 µM, respectively.[2,3] (R)-CR8 has 2- to 4-fold improved potency for the inhibition of CDKs over (R)-roscovitine and can inhibit the proliferation of various cancer cell lines with ~40-fold more potency than (R)-roscovitine (IC_{50}s ~ 0.39 *versus* 27.8 µM, respectively).[2,3] (R)-CR8 also inhibits casein kinase 1 (CK1δ/ε) with an IC_{50} value of 0.40 µM and inhibits GSK3α/β with an IC_{50} value of 12 µM.[2]

References

1. Bettayeb, K., Baunbaek, D., Delehouze, C., *et al.* CDK inhibitors roscovitine and CR8 trigger Mcl-I down-regulation and apoptotic cell death in neuroblastoma cells. *Genes Cancer* **1(4)**, 369-380 (2010).
2. Bettayeb, K., Oumata, N., Echalier, A., *et al.* CR8, a potent and selective, roscovitine-derived inhibitor of cyclin-dependent kinases. *Oncogene* **27**, 5797-5807 (2008).
3. Oumata, N., Bettayeb, K., Ferandin, Y., *et al.* Roscovitine-derived, dual-specificity inhibitors of cyclin-dependent kinases and casein kinases 1. *J. Med. Chem.* **51**, 5229-5242 (2008).

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