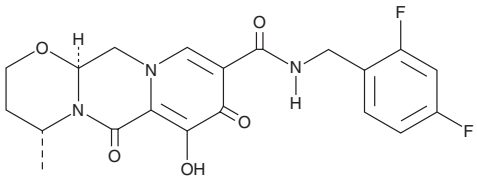
PRODUCT INFORMATION

Dolutegravir

Item No. 22191

CAS Registry No.: 1051375-16-6
Formal Name: (4R,12aS)-N-[(2,4-difluorophenyl)methyl]-3,4,6,8,12,12a-hexahydro-7-hydroxy-4-methyl-6,8-dioxo-2H-pyrido[1',2':4,5]pyrazino[2,1-b][1,3]oxazine-9-carboxamide
Synonyms: GSK1349572, S/GSK1349572
MF: $C_{20}H_{19}F_2N_3O_5$
FW: 419.4
Purity: ≥98%
UV/Vis.: λ_{max}: 259 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

Dolutegravir is supplied as a crystalline solid. A stock solution may be made by dissolving the dolutegravir in the solvent of choice. Dolutegravir is soluble in organic solvents such as DMSO and dimethyl formamide (DMF), which should be purged with an inert gas. Dolutegravir has a solubility of 2.5 and 5 mg/ml in DMSO and DMF, respectively. Doolutegravir is also slightly soluble in ethanol.

Dolutegravir is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, dolutegravir should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Dolutegravir has a solubility of approximately 0.20 mg/ml in a 1:4 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Dolutegravir is a potent inhibitor of HIV integrase with an IC_{50} value of 2.7 nM for HIV-1 integrase-catalyzed strand transfer *in vitro*.[1] It inhibits HIV-1 viral replication (EC_{50} = 0.51 nM) in peripheral blood mononuclear cells (PBMCs). The cytotoxic concentration (CC_{50}) values for dolutegravir in unstimulated and stimulated PBMCs are 189 and 52 µM, respectively, resulting in a therapeutic index of at least 9,400. It prevents replication of several HIV-1 strains (EC_{50}s = 0.36-2.1 nM) that are resistant to nucleoside reverse transcriptase inhibitors (NRTIs), non-nucleoside reverse transcriptase inhibitors (NNRTIs), and protease inhibitors and impairs their ability to infect CIP4 cells.[1,2] Formulations containing dolutegravir have been used to treat HIV-1 infection in humans.[3]

References

1. Kobyayshi, M., Yoshinaga, T., Seki, T., *et al. In vitro* antiretroviral properties of S/GSK1349572, a next-generation HIV integrase inhibitor. *Antimicrob. Agents and Chemother.* **55(2)**, 813-821 (2011).
2. Hare, S.A., Smith, S.J., Métifiot, M., *et al.* Structural and functional analyses of the second-generation integrase strand transfer inhibitor dolutegravir (S/GSK1349572). *Mol. Pharmacol.* **80(4)**, 565-572 (2011).
3. Venter, W.D.F., Clayden, P., and Serenata, C. The ADVANCE study: A groundbreaking trial to evaluate a candidate universal antiretroviral regimen. *Curr. Opin. HIV AIDS* **12(4)**, 351-354 (2017).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM