
Product Data Sheet

Product Name: MK-7145
Cat. No.: GC32646

Chemical Properties

Cas. No. 1255204-84-2

SMILES O[C@H](C1=C(C)C2=C(C(OC2)=O)C=C1)CN3CCN(C[C@@H](C4=C(C)C5=C(C(OC5)=O)C=C4)O)CC3

Formula C₂₆H₃₀N₂O₆ M.Wt 466.53

Solubility Soluble in DMSO Storage Store at -20°C

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT, or blue ice upon request.

Structure

Background

MK-7145 is a ROMK inhibitor, with an IC₅₀ of 0.045 μM.

MK-7145 (Compound 12) is screened against other members of the Kir family of channels. It does not show any significant activity on Kir2.1, Kir2.3, Kir4.1, or Kir7.1 channels when tested at concentrations up to 30 μM. MK-7145 is also selective against other cardiac ion channels such as Cav1.2 and Nav1.5 (IC₅₀>30 μM). In a broad counterscreen panel conducted at Panlabs and including over 150 receptors, enzymes, and ion channels, MK-7145 only exhibits three activities at <10 μM: acetyl cholinesterase, ACES, IC₅₀=9.94 μM, somatostatin subtype 1, sst1 IC₅₀=2.63 μM, and human serotonin transporter, SERT, IC₅₀=0.12 μM. In a functional assay using HEK293 cells stably transfected with human SERT, uptake of 3H-serotonin is inhibited by MK-7145 with an IC₅₀ value of 2.40±0.32 μM (n=5). The superior ROMK potency and in vivo efficacy of MK-7145, coupled with the fact that MK-7145 is a substrate of human Pgp (human Mdr1 BAAB ratio=12), should be able to impart a significant safety window with respect to the SERT off-target activity.

Caution: Product has not been fully validated for medical applications. For research use only.

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[1]. Tang H, et al. Discovery of MK-7145, an Oral Small Molecule ROMK Inhibitor for the Treatment of Hypertension and Heart Failure. ACS Med Chem Lett. 2016 May 12;7(7):697-701.

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