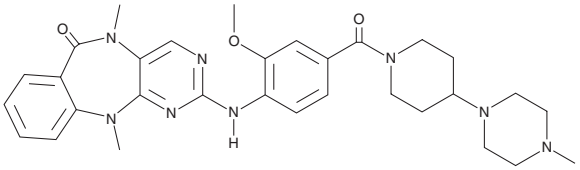
PRODUCT INFORMATION

LRRK2-IN-1

Item No. 18094

CAS Registry No.: 1234480-84-2
Formal Name: 5,11-dihydro-2-[[2-methoxy-4-[[4-(4-methyl-1-piperazinyl)- 1-piperidinyl] carbonyl] phenyl]amino]-5,11-dimethyl-6H-pyrimido[4,5-b][1,4] benzodiazepin-6-one
Synonym: Leucine-rich repeat kinase 2 IN-1
MF: $C_{31}H_{38}N_8O_3$
FW: 570.7
Purity: ≥95%
UV/Vis.: λ_{max}: 290, 390 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



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

Laboratory Procedures

LRRK2-IN-1 is supplied as a crystalline solid. A stock solution may be made by dissolving the LRRK2-IN-1 in the solvent of choice. LRRK2-IN-1 is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide, which should be purged with an inert gas. The solubility of LRRK2-IN-1 in these solvents is approximately 25, 16, and 20 mg/ml, respectively.

LRRK2-IN-1 is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, LRRK2-IN-1 should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. LRRK2-IN-1 has a solubility of approximately 0.5 mg/ml in a 1:1 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Leucine-rich repeat kinase 2 (LRRK2) is an enzyme that interacts with parkin, a ligase that is part of the ubiquitin-proteasome system that mediates the targeting of proteins for degradation. Loss of function of the parkin protein leads to dopaminergic cell death. The development of Parkinson's disease has been strongly associated with mutations in the LRRK2 gene that lead to increased kinase activity. LRRK2-IN-1 is a potent inhibitor of LRRK2 that inhibits both wild-type and G2019S mutant LRRK2 (IC_{50}s = 13 and 6 nM, respectively).[1] It is selective for LRRK2 over a large panel of other kinases. LRRK2-IN-1 treatment causes dephosphorylation of LRRK2, leading to its dissociation from 14-3-3 proteins, ubiquitination, and degradation.[1,2] Inhibitors of LRRK2, including LRRK2-IN-1, stimulate macroautophagy in H4 neuroglioma cells.[3]

References

1. Deng, X., Dzamko, N., Prescott, A., *et al. Nat. Chem. Biol.* **7(4),** 203-205 (2011).
2. Zhao, J., Molitor, T.P., Langston, J.W., *et al. Biochem. J.* **469**, 107-120 (2015).
3. Manzoni, C., Mamais, A., Dihanich, S., *et al. Biochem. Biophys. Acta.* **1833**, 2900-2910 (2013).

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