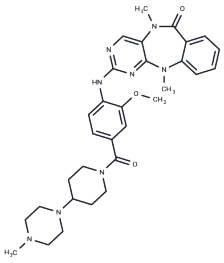
Data Sheet (Cat.No.T2246)

TargetMol

LRRK2-IN-1

Chemical Properties



CAS No. : 1234480-84-2

Formula: C31H38N8O3

Molecular Weight: 570.69

Appearance: no data available

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Biological Description

Description	LRRK2-IN-1 is an effective and selective LRRK2 inhibitor.
Targets(IC50)	Apoptosis,CDK,LRRK2
In vitro	In HEK 293 cells stably expressing GFP-LRRK2[G2019S], LRRK2-IN-1 alters the cytoplasmic localization of LRRK2. In human-derived neuroblastoma SHSY5Y cells and mouse Swiss 3T3 cells, LRRK2-IN-1 induces a similar dose-dependent Ser910 and Ser935 dephosphorylation and loss of 14-3-3 binding to endogenous LRRK2. [1] In transgenic C. elegans expressing human R1441C- and G2019S-LRRK2, LRRK2-IN1 rescues the behavioral deficit characteristic of dopaminergic impairment. [2] In mouse fibroblasts, LRRK2-IN1 reduces cell motility. [3] In AsPC-1 and HCT116 cell lines, LRRK2-IN-1 shows anti-proliferative and pro-apoptotic properties, induces G1 and G2/M cell cycle arrest and inhibits DCLK1 mRNA and protein expression. [4]
In vivo	In wild type male C57BL/6 mice, LRRK2-IN-1 (100 mg/kg, i.p.) inhibits Ser910 and Ser935 dephosphorylation of LRRK2 in the kidney, while no effects in the brain. [1]
Kinase Assay	IC50 determination: Active GST-LRRK2 (1326-2527), GST-LRRK2 [G2019S] (1326-2527), GST-LRRK2 [A2016T] (1326-2527) and GST-LRRK2 [A2016T+G2019S] (1326-2527) enzyme is purified with glutathione sepharose from HEK293 cell lysate 36 h following transient transfection of the appropriate cDNA constructs. Peptide kinase assays, performed in duplicate, are set up in a total volume of 40 µL containing 0.5 µg LRRK2 kinase (which at approximately 10% purity gives a final concentration of 8 nM) in 50 mM Tris/HCl, pH 7.5, 0.1 mM EGTA, 10 mM MgCl2, 20 µM Nictide, 0.1 µM [γ-32P]ATP (~500 cpm/pmol) and the indicated concentrations of inhibitor dissolved in DMSO. After incubation for 15 min at 30 °C, reactions are terminated by spotting 35 µL of the reaction mix onto P81 phosphocellulose paper and immersion in 50 mM phosphoric acid. Samples are washed extensively and the incorporation of [γ-32P]ATP into Nictide is quantified by Cerenkov counting. IC50 values are calculated with GraphPad Prism using non-linear regression analysis.
Cell Research	Cells are seeded into a 96-well tissue culture plate in triplicate. The cells are cultured in the presence of LRRK2-IN-1 with DMSO as a vehicle at 0, 0.31, 0.63, 1, 2, and 5, 10, and 20 µM. 48 h post treatment, 10 µL of TACS MTT Reagent (RND Systems) is added to each well and the cells are incubated at 37°C until dark crystalline precipitate became visible in the cells. 100 µL of 266 mM NH4OH in DMSO is then added to the wells and placed on

	a plate shaker at low speed for 1 minute. After shaking, the plate is allowed to incubate for 10 minutes protected from light and the OD550 for each well is read using a microplate reader. The results are averaged and calculated as a percentage of the DMSO (vehicle) control +/- the standard error of the mean.(Only for Reference)

Solubility Information

Solubility	Ethanol: 57 mg/mL (99.88 mM),Sonication is recommended. DMSO: 45 mg/mL (78.85 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.7523 mL	8.7613 mL	17.5226 mL
5 mM	0.3505 mL	1.7523 mL	3.5045 mL
10 mM	0.1752 mL	0.8761 mL	1.7523 mL
50 mM	0.035 mL	0.1752 mL	0.3505 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Reference

Deng X, et al. Nat Chem Biol. 2011, 7(4), 203-205.
Yan R, Li J J, Zhou Y, et al. Inhibition of DCLK1 down-regulates PD-L1 expression through Hippo pathway in human pancreatic cancer. Life Sciences. 2020, 241: 117150
Wan J, He Z, Peng R, et al.Injectable photocrosslinking spherical hydrogel-encapsulated targeting peptide-modified engineered exosomes for osteoarthritis therapy.Journal of Nanobiotechnology.2023, 21(1): 1-21.
Yao C, et al. Hum Mol Genet. 2013, 22(2), 328-344.
Caesar M, et al. Neurobiol Dis. 2013, 54, 280-288.
Weygant N, et al. Mol Cancer. 2014, 13, 103.
Yan R, Li J J, Zhou Y, et al. Inhibition of DCLK1 down-regulates PD-L1 expression through Hippo pathway in human pancreatic cancer[J]. Life Sciences. 2020, 241: 117150.