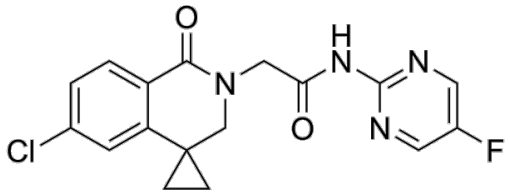
Product Data Sheet

Product Name: NT-0527
Cat. No.: GC79395

Chemical Properties

Cas. No.	2771019-10-2		
Formula	$C_{17}H_{14}ClFN_4O_2$	M.Wt	360.77
Solubility		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

NT-0527 is a selective, orally active, and brain-permeable NLRP3 inflammasome inhibitor. NT-0527 can specifically block the formation of the NLRP3 inflammasome, resulting in the reduction in the maturation and release of IL-1β, exhibit inhibition on CYP2C19. NT-0527 displays anti-inflammatory activity in the mouse LPS /ATP -induced peritonitis model. NT-0527 can be used for the research of neuroinflammatory disorders (Parkinson's disease, Alzheimer's disease, amyotrophic lateral sclerosis) and peripheral inflammatory disorders (type II diabetes, atherosclerosis, gout, etc.) associated with NLRP3 inflammasome [1].

Caution: Product has not been fully validated for medical applications. For research use only.
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In Vivo, NT-0527 (5 μM; carotid artery perfusion; 0.25-0.5 min) exhibits high brain permeability in male SD rat in situ brain perfusion model[1]. NT-0527 (10 mg/kg; oral gavage; single administration; 24 h) achieves an almost even distribution between blood and cerebrospinal fluid[1]. NT-0527 (1-100 mg/kg; oral gavage) dose-dependently inhibits peritoneal IL-1β production with significant effect at 10 mg/kg[1].

In Vitro, NT-0527 (0.001-10 μM; 90 min) disrupts the formation of NLRP3 inflammasome and reduces IL-1β release in a dose-dependent manner in human PBMCs, with IC_{50} values of 0.062 μM, 0.087 μM and 0.040 μM for ATP, MSU and CPPD stimulation, respectively[1]. NT-0527 (0.01-100 μM; 3.5 h) inhibits IL-1β production in a dose-dependent manner with a mean IC_{50} of 0.79 μM in human whole blood [1]. NT-0527 (250 nM, 1 μM; 30 min) significantly inhibits NLRP3-mediated IL-1β release in human PBMCs, acting as a specific NLRP3 inhibitor[1]. NT-0527 (5 μM) exhibits high passive permeability and an efflux ratio in Caco-2 monolayer cell model, and is not a substrate for efflux transporters[1]. NT-0527 (1 μM) shows extremely low intrinsic clearance in human liver microsomes and cryopreserved hepatocytes, while moderate to high intrinsic clearance in rat and mouse liver microsomes and cryopreserved hepatocytes, showing the metabolic clearance rate in human liver is much slower than that in rats and mice[1].

References:

[1]. Harrison D, et al. Profile of NT-0527, a brain penetrant NLRP3 Inflammasome inhibitor suitable as an in vivo tool compound for neuroinflammatory disorders. RSC Med Chem. 2025 Sep 4.

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