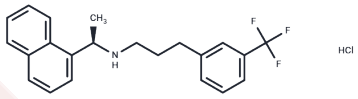
Data Sheet (Cat.No.T2406)

TargetMol

Cinacalcet hydrochloride

Chemical Properties



CAS No. : 364782-34-3

Formula: C22H23ClF3N

Molecular Weight: 393.87

Appearance: no data available

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

Biological Description

Description	Cinacalcet hydrochloride (AMG-073 hydrochloride) is a naphthalene derivative and calcimimetic agent that enhances the sensitivity of parathyroid gland calcium-sensing receptors to serum calcium, thereby reducing parathyroid hormone secretion and decreasing serum calcium in the treatment of parathyroid diseases.
Targets(IC50)	CaSR
In vitro	Significant dose-dependent reductions in serum calcium levels were observed at 4, 8, and 24 hours post-oral administration of AMG-073 at dosages of 3, 10, and 30 mg/kg. A transient decrease in serum phosphorus levels was noted only with the highest dosage of AMG-073. Oral administration of Cinacalcet HCl at 1, 3, 10, and 30 mg/kg in 20% sulfobutylether-β-cyclodextrin sodium to normal rats induced a significant dose-dependent reduction in PTH levels within 1 to 4 hours. By 8 hours post-dosing, a significant reduction in PTH levels was observed with 10 and 30 mg/kg doses compared to the control group, with this effect dissipating after 24 hours. Additionally, an increase in calcitonin levels accompanying PTH suppression was observed with 40 mg/kg AMG-073 in rats. Similar to normal rats, a rapid dose-dependent reduction in PTH and calcium levels was noted in five out of six nephrectomized rats following oral AMG-073 administration. Furthermore, oral administration of 5 and 10 mg/kg Cinacalcet HCl for 4 weeks significantly reduced the weight of the parathyroid gland compared to the control group.
In vivo	Cinacalcet HCl induces a concentration-dependent increase in cytoplasmic calcium levels in human embryonic kidney cells expressing the CaSR (Calcium-Sensing Receptor). Furthermore, in bovine parathyroid cells and a buffer containing 0.5 mM calcium, a concentration-dependent decrease in PTH (Parathyroid Hormone) levels was observed when treated with AMG 073 (Cinacalcet) concentrations ranging from 3 nM to 1 μM, achieving an IC50 of 27 nM.

Solubility Information

Solubility	DMSO: 50 mg/mL (126.95 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.5389 mL	12.6945 mL	25.3891 mL
5 mM	0.5078 mL	2.5389 mL	5.0778 mL
10 mM	0.2539 mL	1.2695 mL	2.5389 mL
50 mM	0.0508 mL	0.2539 mL	0.5078 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

Ureña P, et al. Kidney Int Suppl, 2003, (85), S91-96.
Wang C, Zhang Z, Liu D, et al.Restoring Colistin Sensitivity in Multidrug-Resistant Pathogenic E. coli Using Cinacalcet Hydrochloride.International Journal of Molecular Sciences.2024, 25(21): 11574.
Dong BJ. Clin Ther, 2005, 27(11), 1725-1751.