Web: www.taiclone.com
Tel: +886-2-2735-9682
Email: order@taiclone.com

Dinaciclib

Catalog No: tcsc0541

Available Sizes

Size: 5mg

Size: 10mg

Size: 50mg

Size: 100mg

Specifications

CAS No:
779353-01-4

Formula:
$C_{21}H_{28}N_6O_2$

Pathway:
Cell Cycle/DNA Damage

Target:
CDK

Purity / Grade:
>98%

Solubility:
DMSO : ≥ 56 mg/mL (141.24 mM)

Alternative Names:
SCH 727965

Observed Molecular Weight:
396.49

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Product Description

Dinaciclib is a potent and selective inhibitor of **CDK**s, with **IC_{50}**s of 1, 1, 3, and 4 nM for **CDK2**, **CDK5**, **CDK1**, and **CDK9** activity, respectively.

IC50 & Target: IC50: 1 nM (CDK2), 1 nM(CDK5), 3 nM(CDK1), 4 nM(CDK9)[1]

In Vitro: Dinaciclib (SCH 727965) is a potent DNA replication inhibitor that blocks thymidine (dThd) DNA incorporation in A2780 cells with an IC_{50} of 4 nM. Dinaciclib (100 nM) inhibits phosphorylation of the retinoblastoma (Rb) tumor suppressor protein and induces accumulation of the p85 PARP caspase cleavage product[1]. In vitro cell growth of pancreatic cancer cells is inhibited by Dinaciclib (SCH727965) in a dose-dependent manner. Upon incubation with Dinaciclib for 72 h, the GI50s are approximately 10 and 20 nM for MIAPaCa-2 and Pa20C cells, respectively. These results are consistent with studies of Dinaciclib in other cancer cell lines. In soft agar assays, 5 to 10 nM of Dinaciclib significantly reduces colony formation and anchorage independent growth of MIAPaCa-2 cells. Moreover, in vitro cell migration of Pa20C and MIAPaCa-2 cells is significantly reduced by Dinaciclib-concentrations starting from 2-5 nM, as demonstrated using BD FluoroChrom, modified Boyden Chamber and wound healing assays[2].

In Vivo: Dinaciclib (8, 16, 32, and 48 mg/kg, i.p.) results in tumor inhibition by 70%, 70%, 89%, and 96%, respectively; Dinaciclib (SCH 727965) is well tolerated, and the maximum body weight loss in the highest dosage group is 5%. Dinaciclib has a short plasma half-life in mouse. A dose of 5 mg/kg Dinaciclib given i.p. in mice is associated with a plasma half-life of ~0.25 hour[1]. Treatment with Dinaciclib (SCH727965) given as twice weekly i.p. doses of 40 mg/kg for 4 weeks causes significant tumor growth inhibition (TGI) in 10/10 (100%) of low-passage subcutaneous pancreatic xenografts tested[2].