

# 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 :  $\geq$  56 mg/mL (141.24 mM)

**Alternative Names:**

SCH 727965

**Observed Molecular Weight:**

396.49

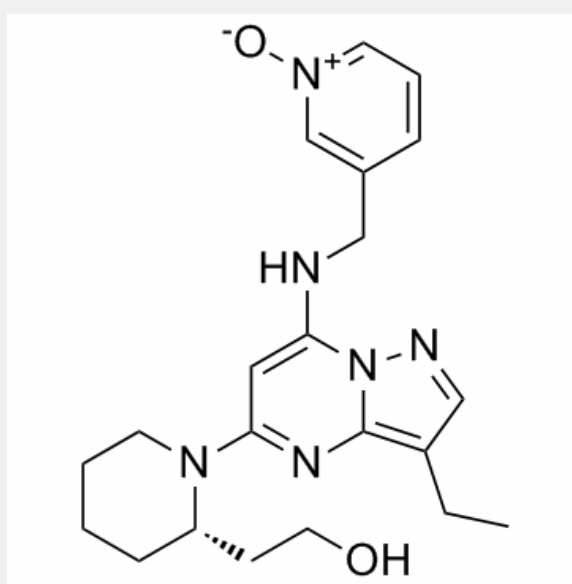
## Product Description

Dinaciclib is a potent and selective inhibitor of **CDKs**, with **IC<sub>50</sub>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)<sup>[1]</sup>

**In Vitro:** Dinaciclib (SCH 727965) is a potent DNA replication inhibitor that blocks thymidine (dThd) DNA incorporation in A2780 cells with an IC<sub>50</sub> 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<sup>[1]</sup>. 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<sup>[2]</sup>.

**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<sup>[1]</sup>. 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<sup>[2]</sup>.



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