

# Pyridone 6

## Catalog No: tcsc1056



### Available Sizes

**Size:** 2mg

**Size:** 5mg

**Size:** 10mg

**Size:** 50mg

**Size:** 100mg



### Specifications

**CAS No:**

457081-03-7

**Formula:**

$C_{18}H_{16}FN_3O$

**Pathway:**

Epigenetics;Stem Cell/Wnt;JAK/STAT Signaling

**Target:**

JAK;JAK;JAK

**Purity / Grade:**

>98%

**Solubility:**

DMSO :  $\geq 31.25$  mg/mL (101.02 mM)

**Alternative Names:**

CMP 6;JAK Inhibitor

### Observed Molecular Weight:

309.34

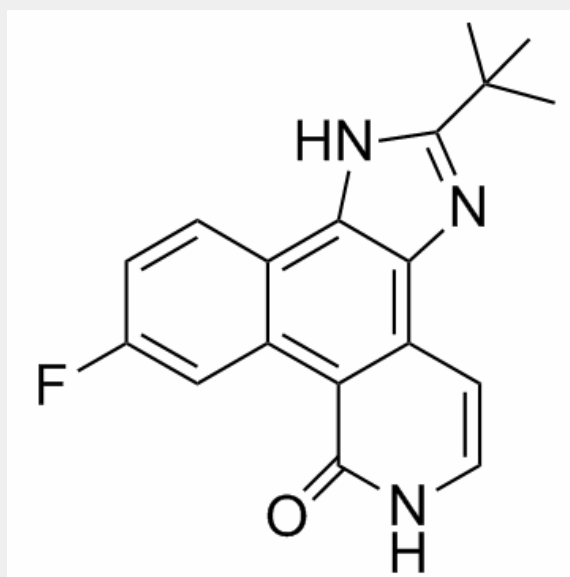
## Product Description

Pyridone 6 is a **pan-JAK** inhibitor, which potently inhibits the JAK kinase family, with **IC<sub>50</sub>**s of 1 nM for **JAK2** and **TYK2**, 5 nM for **JAK3**, and 15 nM for **JAK1**, while displaying significantly weaker affinities (130 nM to >10 mM) for other protein tyrosine kinases.

IC50 & Target: IC50: 1 nM (JAK2), 5 nM (JAK3), 15 nM (JAK1), 1 nM (TYK2)<sup>[1][2]</sup>

**In Vitro:** Pyridone 6 is tested as an inhibitor of 21 other protein kinases; Pyridone 6 inhibits these kinases with IC<sub>50</sub>s ranging from 130 nM to >10 μM. Pyridone 6 inhibits IL2 driven proliferation of CTLL cells with IC<sub>50</sub>=0.1 μM and IL4 driven proliferation with IC<sub>50</sub>=0.052 μM<sup>[1]</sup>. Pyridone 6 (P6) is shown to inhibit kinase by interacting within the ATP-binding cleft of each JAK. The IC<sub>50</sub> of Pyridone 6 is 3 nM for all of these cytokines; this is comparable to the reported IC<sub>50</sub>s of Pyridone 6 for JAK2, Tyk2, and JAK3. Pyridone 6 strongly inhibits Th2 and modestly inhibits Th1, whereas it enhances Th17 development when present within a certain range of concentrations. Pyridone 6 reduces IFN-γ and IL-13, whereas it enhances IL-17 and IL-22 expression. Pyridone 6 also inhibits both Th1 and Th2 development, whereas it promotes Th17 differentiation from naive T cells when present within a certain range of concentrations<sup>[2]</sup>.

**In Vivo:** Pyridone 6 (P6) delays the onset and reduced the magnitude of skin disease in an AD-like skin-disease model of NC/Nga mice. P6-nano strongly ameliorates atopic dermatitis (AD) in NC/Nga mice, exerting an effect comparable to that of betamethasone ointment, a commonly used drug, which also tested as a positive control. In contrast, empty polylactic acid with glycolic acid (PLGA) nanoparticles (C-nano) seemed to have no effect<sup>[2]</sup>.



All products are for RESEARCH USE ONLY. Not for diagnostic & therapeutic purposes!