Web: www.taiclone.com
Tel: +886-2-2735-9682
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Fedratinib

Catalog No: tcsc0052

Available Sizes

Size: 5mg

Size: 10mg

Size: 50mg

Size: 100mg

Specifications

CAS No:
936091-26-8

Formula:
$C_{27}H_{36}N_6O_3S$

Pathway:
Epigenetics;Stem Cell/Wnt;JAK/STAT Signaling

Target:
JAK;JAK;JAK

Purity / Grade:
>98%

Solubility:
DMSO : ≥ 42 mg/mL (80.05 mM)

Alternative Names:
TG-101348;SAR 302503

Observed Molecular Weight:
524.68

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Product Description

Fedratinib (TG-101348) is a selective inhibitor of **JAK2** with an **IC_{50}** of 3 nM, showing 35- and 334-fold selectivity over JAK1 and JAK3, respectively.

IC50 & Target: IC50: 3 nM (JAK2)[1]

In Vitro: Fedratinib (TG-101348) significantly inhibits JAK2 V617F, Flt3, and Ret with IC_{50} of 3 nM, 15 nM, and 48 nM, respectively. TG101348 has an IC_{50} appr 300-fold higher for the closely related JAK3 and is a less potent inhibitor of the JAK1 and TYK2 family members. Fedratinib (TG-101348) inhibits proliferation of a human erythroblast leukemia (HEL) cell line that harbors the JAK2V617F mutation, as well as a murine pro-B cell line expressing human JAK2V617F (Ba/F3 JAK2V617F), with IC_{50} of 305 nM and 270 nM, respectively. Fedratinib (TG-101348) also inhibits proliferation of parental Ba/F3 cells to a comparable level, with IC_{50} of appr 420 nM. Fedratinib (TG-101348) treatment reduces STAT5 phosphorylation at concentrations that parallel the concentrations required to inhibit cell proliferation. Fedratinib (TG-101348) induces apoptosis in both HEL and Ba/F3 JAK2V617F cells in a dose-dependent manner. Fedratinib does not show proapoptotic activity in control normal human dermal fibroblasts at concentrations up to 10 μM, and the antiproliferative IC_{50} against fibroblasts is >5 μM[1]. Fedratinib (TG-101348) treatment decreases GATA-1 expression, which is associated with erythroid-skewing of JAK2V617F+ progenitor differentiation, and inhibits STAT5 as well as GATA S310 phosphorylation[2]. Fedratinib (TG-101348) inhibits the proliferation of HMC-1.1 (KITV560G) cells, with somewhat lower potency than HMC-1.2 (KITD816V, KITV560G) cells, with IC_{50} of 740 nM and 407 nM, respectively[3].

In Vivo: Fedratinib (TG-101348) has potential for efficacious treatment of JAK2V617F-associated myeloproliferative diseases (MPD). In treated animals, there is a statistically significant reduction in hematocrit and leukocyte count, a dose-dependent reduction/elimination of extramedullary hematopoiesis, and, at least in some instances, evidence for attenuation of myelofibrosis, correlated with surrogate endpoints, including reduction/elimination of JAK2V617F disease burden, suppression of endogenous erythroid colony formation, and in vivo inhibition of JAK-STAT signal transduction. There are no apparent toxicities and no effect on T cell number[1]. Oral administration of Fedratinib (TG-101348) (120 mg/kg) significantly inhibits PV progenitor erythroid differentiation in vivo[2].