

# Imatinib

**Catalog No: tcsc0964** 

Available Sizes

**Size:** 1g

Size: 5g

Specifications

**CAS No:** 152459-95-5

#### Formula:

 $C_{29}H_{31}N_{7}O$ 

#### Pathway:

Protein Tyrosine Kinase/RTK; Protein Tyrosine Kinase/RTK; Autophagy; Protein Tyrosine Kinase/RTK

#### **Target:**

Bcr-Abl;PDGFR;Autophagy;c-Kit

#### **Purity / Grade:**

>98%

### Solubility: DMSO : 40 mg/mL (81.04 mM; Need ultrasonic and warming)

## Alternative Names:

STI571

**Observed Molecular Weight:** 

493.6

## **Product Description**

Imatinib is a known inhibitor of the **c-Kit**, **Bcr-Abl**, and **PDGFR** tyrosine kinases, inhibits the SLF-dependent activation of c-Kit<sup>wt</sup> kinase with  $IC_{50}$  of ~100 nM, which is similar to the concentration requires for inhibition of Bcr-Abl and PDGFR.



IC50 & Target: IC50: ~100 nM (c-Kit, Bcr-Abl, and PDGFR)<sup>[1]</sup>

*In Vitro:* Imatinib (STI571) inhibits c-Kit autophosphorylation, activation of MAPK, and activation of Akt without altering total protein levels of c-kit, MAPK, or Akt. The concentration that produces 50% inhibition for these effects is approximately 100 nM<sup>[1]</sup>. Imatinib (STI571) is very effective (in vitro IC<sub>50</sub> of 25 nM) against the chronic myeloid leukemia-causing kinase Bcr-Abl. Imatinib also efficiently inhibits Kit (in vitro IC<sub>50</sub>, 410 nM) and PDGFR (in vitro IC<sub>50</sub>, 380 nM)<sup>[2]</sup>. Imatinib (STI571) is a multi-target inhibitor of v-Abl, c-Kit and inhibits Bcr/Abl, v-Abl, Tel/Abl, the native PDGF $\beta$  receptor, and c-Kit, but it does not inhibit Src family kinases, c-Fms, Flt3, the EGFR or multiple other tyrosine kinases. Imatinib inhibits tyrosine phosphorylation and cell growth of Ba/F3 cells expressing Bcr/Abl, Tel/Abl, Tel/Abl, Tel/Arg with an IC<sub>50</sub> of approximately 0.5  $\mu$ M in each case, but it has no effect on untransformed Ba/F3 cells growing in IL-3 or on Ba/F3 cells transformed by Tel/JAK2<sup>[3]</sup>. The IC<sub>50</sub>s of Imatinib(STI571) is a multi-target inhibitor of v-Abl, c-Kit and on BON-1 and H727 cells after exposure for 48 h are 32.4 and 32.8  $\mu$ M, respectively<sup>[4]</sup>.

*In Vivo:* In the phosphorothioate antisense oligodeoxynucleotides (PS-ASODN) group, tumor growth is inhibited by 59.437%, which is markedly higher than in the Imatinib (STI571) is a multi-target inhibitor of v-Abl, c-Kit and group (11.071%) and liposome negative control group (2.759%). Telomerase activity is significantly lower (P[5]. Imatinib (25 mg/kg/day, p.o.) suppresses the growth of endometriotic tissue and reduces the number of ovarian follicles in a rat model. Imatinib effectively treats experimental endometriosis by its inhibitor effects on angiogenesis and cell proliferation<sup>[6]</sup>.



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