Imatinib is a first generation tyrosine kinase inhibitor that is used in the treatment of chronic myelogenous leukemia (CML), gastrointestinal stromal tumors, and other cancers. It selectively targets certain tyrosine kinases, including ABL, platelet-derived growth factor receptor (PDGFR), and KIT (Druker 2008; Müller). This product is supplied as the mesylate salt of the molecule.

**Molecular Name:** Imatinib (Mesylate)

**Alternative Names:** CGP57148B; Gleevec; Glivec; STI-571

**CAS Number:** 220127-57-1

**Chemical Formula:** C_{29}H_{31}N_{7}O · CH_{4}SO_{3}

**Molecular Weight:** 589.7 g/mol

**Purity:** ≥ 98%

**Chemical Name:** methanesulfonic acid; 4-[(4-methylpiperazin-1-yl)methyl]-N-[4-methyl-3-[(4-pyridin-3-ylpyrimidin-2-yl)amino]phenyl]benzamide

**Structure:**

![Imatinib Structure](image)

**Properties**

**Physical Appearance:** A crystalline solid

**Storage:** Product stable at -20°C as supplied. Protect from prolonged exposure to light. Stable as supplied for 12 months from date of receipt.

**Solubility:**
- PBS (pH 7.2) ≤ 3.3 mM
- DMSO ≤ 20 mM
- Absolute ethanol ≤ 330 µM

For example, to prepare a 10 mM stock solution in DMSO, resuspend 25 mg in 4.24 mL of fresh DMSO.

Prepare stock solution fresh before use. Information regarding stability of small molecules in solution has rarely been reported, however, as a general guide we recommend storage in DMSO at -20°C. Aliquot into working volumes to avoid repeated freeze-thaw cycles. The effect of storage of stock solution on compound performance should be tested for each application.

For use as a cell culture supplement, stock solution should be diluted into culture medium immediately before use. Avoid final DMSO concentration above 0.1% due to potential cell toxicity.
Published Applications

DIFFERENTIATION
- Inhibits proliferation of primary cultured human mesenchymal stem cells, and promotes adipogenic over osteogenic differentiation (Fierro et al.).
- Induces osteoblast differentiation in cultured osteoblastic cells, and reduces osteoclastogenesis in mouse bone marrow cultures (O’Sullivan et al.).

CANCER RESEARCH
- In CML, Imatinib inhibits the oncoprotein BCR-ABL, the product of the Philadelphia chromosome gene fusion (Carroll et al.; Druker et al. 1996).
- Inhibits autonomous erythropoiesis in peripheral blood mononuclear cells isolated from patients with polycythemia vera (Oehler et al.).

References


Related Small Molecules

For a complete list of small molecules available from STEMCELL Technologies, visit www.stemcell.com/smallmolecules or contact us at techsupport@stemcell.com.

This product is hazardous. Please refer to the Safety Data Sheet (SDS).