Revision 1

Store at -20C

#9084

Imatinib

5 mg

Cell Signaling TECHNOLOGY®

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Background

Imatinib is a tyrosine kinase (TK) inhibitor that is a relatively specific ATP-binding site antagonist of Bcr-Abl, PDGF receptor, and c-Kit TKs (1-3). Results are encouraging in chronic myeloid leukemia (CML) clinical trials and imatinib has become a paradigm for targeted cancer therapeutics (4-6). Signal transduction through phospho-tyrosine pathways has been studied extensively, and tyrosine phosphorylation has been linked to multiple cell growth and differentiation pathways (7-9). Because the observed leukemic state of CML is dependent on the intact Bcr-Abl tyrosine kinase activity, extensive work has been done to identify substrates of Bcr-Abl and thus possible mechanisms leading to a myeloid expansion. Many groups have characterized prominent tyrosine-phosphorylated protein substrates in both CML blasts and Bcr-Abl-expressing cell lines, including SHIP, c-Cbl, Dok, Shc, and CrkL (10-15). In addition, key signal transduction pathways involving PI3 kinase, Ras, Myc, and Stat5 are also activated in a Bcr-Abl kinase-dependent manner (16).

Molecular Formula

$C_{29}H_{31}N_7O + CH_4SO_3$

Molecular Weight

589.71 g/mol

Purity

>99%

CAS

220127-57-1

Solubility

Soluble in DMSO at 100mg/ml and H2O at 200mg/ml.

Storage

Store lyophilized or in solution at -20ºC, desiccated. Protect from light. In lyophilized form, the chemical is stable for 24 months. Once in solution, use within 3 months to prevent loss of potency. Aliquot to avoid multiple freeze/thaw cycles.

Directions for Use

Imatinib is supplied as a lyophilized powder. For a 10 mM stock, reconstitute the 5 mg in 847.9 µl DMSO. Working concentrations and length of treatment can vary depending on the desired effect, but it is typically used at 1-10 µM for 1-2 hours. Soluble in DMSO at 100 mg/ml; poorly soluble in ethanol. Soluble in water at 200 mg/ml.

Background References

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