

#9084 Store at -20°C

Imatinib

5 mg



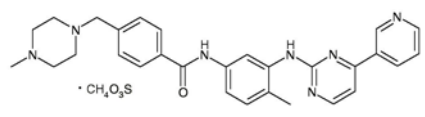
Orders ■ 877-616-CELL (2355)
orders@cellsignal.com
Support ■ 877-678-TECH (8324)
info@cellsignal.com
Web ■ www.cellsignal.com

rev. 06/04/19

For Research Use Only. Not For Use In Diagnostic Procedures.

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 phosphotyrosine 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: C₂₅H₃₁N₇O + CH₄SO₃

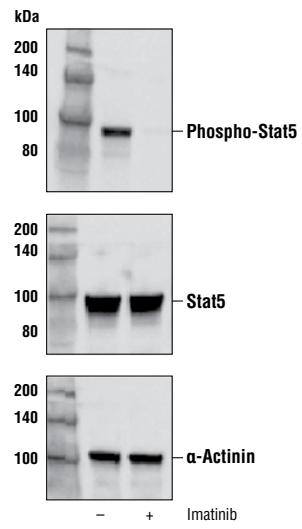


Molecular Weight: 589.71 g/mol

Solubility: Soluble in DMSO at 100 mg/ml; poorly soluble in ethanol. Soluble in water at 200 mg/ml.

Purity: >99%.

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.



Western blot analysis of extracts from K562 cells, untreated (-) or treated with Imatinib (10µM for 1 hr), using Phospho-Stat5 (Tyr694) (C11C5) Rabbit mAb #9359 (upper), Stat5 (D3N2B) Rabbit mAb #25656 (middle), and α-Actinin (D6F6) XP® Rabbit mAb #6487 (lower).

Storage: Store lyophilized or in solution at -20°C, 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.

Background References:
(1) Buchdunger, E. et al. (1996) *Cancer Res* 56, 100-4.
(2) Heinrich, M.C. et al. (2000) *Blood* 96, 925-32.
(3) Druker, B.J. et al. (1996) *Nat Med* 2, 561-6.
(4) Mauro, M.J. and Druker, B.J. (2001) *Curr Oncol Rep* 3, 223-7.
(5) Druker, B.J. et al. (2001) *N Engl J Med* 344, 1031-7.
(6) Druker, B.J. et al. (2001) *N Engl J Med* 344, 1038-42.
(7) Blume-Jensen, P. and Hunter, T. (2001) *Nature* 411, 355-65.
(8) Ullrich, A. and Schlessinger, J. (1990) *Cell* 61, 203-12.
(9) Cantley, L.C. et al. (1991) *Cell* 64, 281-302.
(10) ten Hoeve, J. et al. (1994) *Blood* 84, 1731-6.
(11) Matsuguchi, T. et al. (1994) *J Biol Chem* 269, 5016-21.
(12) Carpino, N. et al. (1997) *Cell* 88, 197-204.
(13) Sattler, M. et al. (1997) *Oncogene* 15, 2379-84.
(14) Di Cristofano, A. et al. (1998) *J Biol Chem* 273, 4827-30.
(15) Wisniewski, D. et al. (1999) *Blood* 93, 2707-20.
(16) Kabarowski, J.H. and Witte, O.N. (2000) *Stem Cells* 18, 399-408.

© 2014 Cell Signaling Technology, Inc. Cell Signaling Technology® is a trademark of Cell Signaling Technology, Inc.

Applications Key: W—Western IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E-P—ELISA—Peptide
Species Cross-Reactivity Key: H—human M—mouse R—rat Hm—hamster Mk—monkey Mi—mink C—chicken Dm—D. melanogaster X—Xenopus Z—zebrafish B—bovine
Dg—dog Pg—pig Sc—S. cerevisiae Ce—C. elegans Hr—horse All—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.