Dasatinib is a potent, ATP-competitive tyrosine kinase inhibitor. It is specific for SRC/ABL kinases, for example, ABL, SRC, LCK, and YES with IC\textsubscript{50} values of < 1.0, 0.5, 0.4 and 0.5 nM, respectively, and also demonstrates activity against c-KIT with an IC\textsubscript{50} = 5.0 nM (Lombardo et al.; Davis et al.) Dasatinib is a second-generation inhibitor of the oncogenic tyrosine kinase BCR-ABL with 325-fold more potency than imatinib, and is also able to inhibit imatinib-resistant BCR-ABL mutants (Tokarski et al.). It also inhibits a large number of other kinases (76 of 148 kinases tested) when screened at 10 \mu M (Carter et al.).

**Product Description**

Dasatinib is a potent, ATP-competitive tyrosine kinase inhibitor. It is specific for SRC/ABL kinases, for example, ABL, SRC, LCK, and YES with IC\textsubscript{50} values of < 1.0, 0.5, 0.4 and 0.5 nM, respectively, and also demonstrates activity against c-KIT with an IC\textsubscript{50} = 5.0 nM (Lombardo et al.; Davis et al.) Dasatinib is a second-generation inhibitor of the oncogenic tyrosine kinase BCR-ABL with 325-fold more potency than imatinib, and is also able to inhibit imatinib-resistant BCR-ABL mutants (Tokarski et al.). It also inhibits a large number of other kinases (76 of 148 kinases tested) when screened at 10 \mu M (Carter et al.).

**Molecular Name:** Dasatinib  
**Alternative Names:** BMS 354825, Sprycel  
**CAS Number:** 302962-49-8  
**Chemical Formula:** C\textsubscript{22}H\textsubscript{26}ClN\textsubscript{7}O\textsubscript{2}S  
**Molecular Weight:** 488.0 g/mol  
**Purity:** \geq 98%  
**Chemical Name:** N-(2-chloro-6-methylphenyl)-2-[[6-[4-(2-hydroxyethyl)-1-piperazinyl]-2-methyl-4-pyrimidinyl]amino]-5-thiazolecarboxamide

**Structure:**

![Dasatinib Structure](image)

**Properties**

**Physical Appearance:** A crystalline solid  
**Storage:** Product stable at -20°C as supplied. Protect from prolonged exposure to light. For product expiry date, please contact techsupport@stemcell.com.  
**Solubility:**  
- DMSO \leq 25 mM  
  For example, to prepare a 10 mM stock solution in DMSO, resuspend 10 mg in 2.05 mL of 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.

  Compound has low solubility in aqueous media. 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

CANCER RESEARCH
- Inhibits proliferation in cell lines derived from chronic myeloid leukemia (CML), prostate, breast, and colon tumors (Lombardo et al.).
- Inhibits proliferation of cells with imatinib-resistant BCR-ABL mutations (Shah et al.).
- Inhibits tumor growth and development of lymph node metastases in orthotopic nude mouse models of prostate cancer (Park et al.).
- Induces cell-cycle arrest and apoptosis and decreases growth in thyroid cancer cells (Chan et al.).
- Inhibits production of extracellular matrix proteins in dermal fibroblasts and prevents development of bleomycin-challenge-induced fibrosis in mice (Distler & Distler; Akhmetshina et al.).

References


Related Small Molecules

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

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