Dasatinib

Broad-spectrum tyrosine kinase inhibitor

Dasatinib is a potent, orally active small-molecule inhibitor of multiple tyrosine kinases, including Bcr-Abl, Src family kinases, c-Kit, PDGFR, and EphA2. It inhibits Src, Abl, Lck, and c-Kit with an IC_{50} of 0.8 nM, 1 nM, 0.4 nM, and 79 nm, respectively. Originally developed as a second-generation treatment for chronic myeloid leukemia (CML), it is widely used in cancer research and cell signaling studies due to its broad kinase inhibition profile.

Key features and applications include:

- **Multi-Targeted Inhibition:** Blocks both receptor and non-receptor tyrosine kinases, including drug-resistant Bcr-Abl mutants.
- **Cancer Research:** Used to study leukemia, solid tumors, and kinase-driven malignancies.
- **Cell Signaling Studies:** Investigates pathways involving Src, Abl, and PDGFR signaling.
- **Immunology:** Modulates T-cell activation and natural killer (NK) cell function.
- **Fibrosis Models:** Explored for its anti-fibrotic effects in liver and lung disease models.
- **Autophagy & Apoptosis:** Induces programmed cell death and autophagy in various cancer cell lines.

Relevant disease states include:

- **Chronic Myeloid Leukemia (CML):** FDA-approved for treatment of CML, especially in cases resistant to imatinib.
- **Acute Lymphoblastic Leukemia (ALL):** Effective in Philadelphia chromosome-positive (Ph+) ALL.
- **Solid Tumors:** Investigated in breast, prostate, and pancreatic cancers for its anti-proliferative effects.
- **Fibrotic Diseases:** Studied for its potential to reduce fibrosis by targeting PDGFR and Src pathways.

- **Neurodegenerative Disorders:** Explored for neuroprotective effects via modulation of kinase signaling.

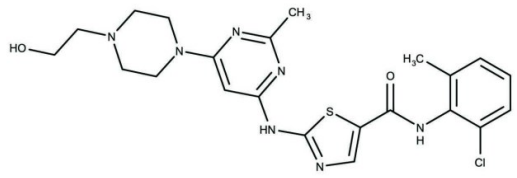
Ordering Information

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ENZ-CHM333-0025	25mg

Manuals, SDS & CofA

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Handling & Storage

Use/Stability	As indicated on product label or CoA when stored as recommended.
Short Term Storage	-20°C
Long Term Storage	-20°C
Shipping	Ambient Temperature

Regulatory Status

RUO - Research Use Only

Product Details

Alternative Name	BMS-354825, N-(2-Chloro-6-methylphenyl)-2-[[6-[4-(2-hydroxyethyl)-1-piperazinyl]-2-methyl-4-pyrimidinyl]amino]-5-thiazolecarboxamide
Appearance	White or off-white solid.
CAS	302962-49-8
Couple Target	Abl, c-Kit, p56lck tyrosine kinase, Src kinase
Couple Type	Inhibitor
Formula	$C_{22}H_{26}ClN_7O_2S$
Identity	Determined by NMR.
MW	488.01
Purity	≥98% (TLC)
Solubility	Soluble in DMSO (200 mg/mL).

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