

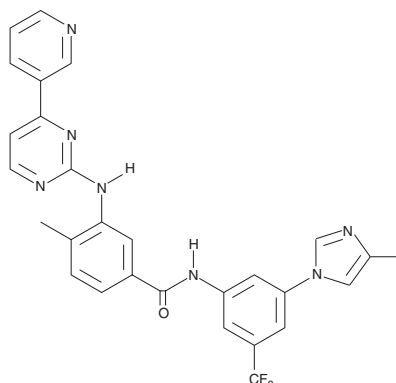
PRODUCT INFORMATION



Nilotinib

Item No. 10010422

CAS Registry No.: 641571-10-0
Formal Name: 4-methyl-N-[3-(4-methyl-1H-imidazol-1-yl)-5-(trifluoromethyl)phenyl]-3-[[4-(3-pyridinyl)-2-pyrimidinyl]amino]-benzamide
Synonym: AMN107
MF: C₂₈H₂₂F₃N₇O
FW: 529.5
Purity: ≥95%
UV/Vis.: λ_{max}: 262 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Nilotinib is supplied as a crystalline solid. A stock solution may be made by dissolving the nilotinib in the solvent of choice, which should be purged with an inert gas. Nilotinib is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of nilotinib in these solvents is approximately 2 mg/ml.

Description

Nilotinib is an inhibitor of wild-type and mutant Bcr-Abl (IC₅₀s = 15 and 9-400 nM, respectively).¹ It is selective for wild-type and mutant Bcr-Abl over Src and LYN (IC₅₀s = >5,000 nM for both). Nilotinib inhibits Bcr-Abl autophosphorylation and cell proliferation in Ba/F3 cells expressing wild-type or mutant Bcr-Abl (IC₅₀s = 7-155 and 13-51 nM, respectively). *In vivo*, nilotinib (1 mg/kg) reduces midbrain Bcr-Abl autophosphorylation, amyloid-β levels, and neuronal loss, as well as improves autophagosome clearance and reverses cognitive deficits in the Tg2576 transgenic mouse model of Alzheimer's disease.² It also reduces serum creatine levels, renal profibrotic gene expression, and tubulointerstitial damage, as well as increases survival in a rat model of 5/6 nephrectomy-induced chronic kidney disease.³ Formulations containing nilotinib have been used in the treatment of leukemia.

References

1. O'Hare, T., Walters, D.K., Stoffregen, E.P., *et al.* In vitro activity of Bcr-Abl inhibitors AMN107 and BMS-354825 against clinically relevant imatinib-resistant Abl kinase domain mutants. *Cancer Res* **65(11)**, 4500-4505 (2005).
2. La Barbera, L., Vedele, F., Nobili, A., *et al.* Nilotinib restores memory function by preventing dopaminergic neuron degeneration in a mouse model of Alzheimer's Disease. *Prog. Neurobiol.* **202**, 102031 (2021).
3. Iyoda, M., Shibata, T., Hirai, Y., *et al.* Nilotinib attenuates renal injury and prolongs survival in chronic kidney disease. *J. Am. Soc. Nephrol.* **22(8)**, 1486-1496 (2011).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897

[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM

WWW.CAYMANCHEM.COM