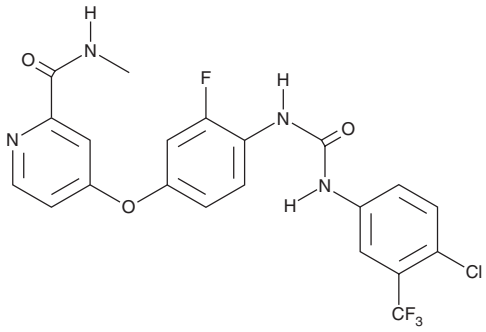
PRODUCT INFORMATION

Regorafenib

Item No. 18498

CAS Registry No.:	755037-03-7
Formal Name:	4-[4-[[[[4-chloro-3-(trifluoromethyl)phenyl]amino]carbonyl]amino]-3-fluorophenoxy]-N-methyl-2-pyridinecarboxamide
Synonym:	BAY 73-4506
MF:	$C_{21}H_{15}ClF_4N_4O_3$
FW:	482.8
Purity:	≥98%
UV/Vis.:	λ_{max}: 263 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

Regorafenib is supplied as a crystalline solid. A stock solution may be made by dissolving the regorafenib in the solvent of choice, which should be purged with an inert gas. Regorafenib is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of regorafenib in ethanol is approximately 14 mg/ml and approximately 30 mg/ml in DMSO and DMF.

Regorafenib is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, regorafenib should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Regorafenib has a solubility of approximately 0.3 mg/ml in a 1:2 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Regorafenib is an orally bioavailable multi-kinase inhibitor with anticancer activity.[1] It inhibits RET, C-RAF, VEGFR2, c-Kit, VEGFR1, and PDGFRβ with IC_{50} values of 1.5, 2.5, 4.2, 7, 13, and 22 nM, respectively. Regorafenib also inhibits B-RAF, VEGFR3, FGFR, and Tie2 (IC_{50}s = 28, 46, 202, and 311 nM, respectivey) as well as other kinases.[1-3] *In vivo*, regorafenib (10 mg/kg) reduces tumor size in the MDA-MB-231 breast and 786-O renal cancer mouse xenograft models.[1] It also reduces tumor microvessel area and inhibits tumor growth in a panel of mouse xenograft models. Formulations containing regorafenib have been used in the treatment of advanced gastrointestinal stromal tumors and metastatic colorectal cancer.

References

1. Wilhelm, S.M., Dumas, J., Adnane, L., *et al*. Regorafenib (BAY 73-4506): A new oral multikinase inhibitor of angiogenic, stromal and oncogenic receptor tyrosine kinases with potent preclinical antitumor activity. *Int. J. Cancer* **129(1)**, 245-255 (2011).
2. Uitdehaag, J.C.M., de Roos, J.A.D.M., van Doornmalen, A.M., *et al*. Comparison of the cancer gene targeting and biochemical selectivities of all targeted kinase inhibitors approved for clinical use. *PLoS One* **9(3)**, 1-13 (2014).
3. Ravi, S. and Singal, A.K. Regorafenib: An evidence-based review of its potential in patients with advanced liver cancer. *Core Evid.* **9**, 81-87 (2014).

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