

Certificate of Analysis

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Product Name: Sorafenib

Catalog No.: 6814

Batch No.: 2

CAS Number: 284461-73-0

IUPAC Name: 4-[4-[[[4-Chloro-3-(trifluoromethyl)phenyl]amino]carbonyl]amino]phenoxy]-N-methyl-2-pyridinecarboxamide

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₂₁H₁₆ClF₃N₄O₃

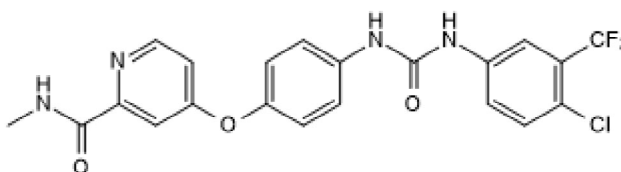
Batch Molecular Weight: 464.82

Physical Appearance: White solid

Solubility: DMSO to 20 mM

Storage: Store at -20°C

Batch Molecular Structure:



2. ANALYTICAL DATA

HPLC: Shows 99.2% purity

¹H NMR: Consistent with structure

Mass Spectrum: Consistent with structure

Microanalysis:

	Carbon Hydrogen Nitrogen		
Theoretical	54.26	3.47	12.05
Found	54.01	3.38	11.73

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

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Product Information

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Description:

Sorafenib is a potent Raf inhibitor (IC₅₀ values are 6, 22 and 38 nM for Raf-1, wild-type BRAF and V599E BRAF mutant, respectively). Also inhibits mVEGFR-2, mVEGFR-3, mPDGFR-β, Flt-3, cKIT and VEGFR-2 (IC₅₀ values are 15, 20, 57, 58, 68 and 90 nM, respectively). Inhibits MAPK pathway in colon, pancreatic and breast cancer cells expressing mutant KRAS and mutant or wt BRAF in vitro. Exhibits antitumor activity in colon, breast and non small-cell lung cancer xenograft models. Also induces ferroptosis in hepatocellular carcinoma cells in vitro.

Physical and Chemical Properties:

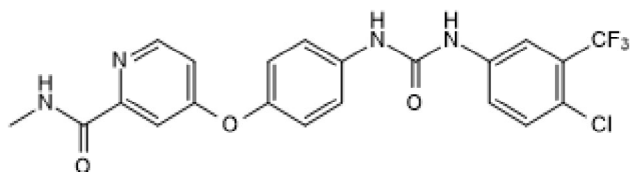
Batch Molecular Formula: C₂₁H₁₆ClF₃N₄O₃

Batch Molecular Weight: 464.82

Physical Appearance: White solid

Minimum Purity: ≥98%

Batch Molecular Structure:



Storage: Store at -20°C

Solubility & Usage Info:

DMSO to 20 mM

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. *Unless contradicted by product-specific protocols or instructions, our standard recommendations apply:

SOLIDS: Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

SOLUTIONS: We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

References:

Lachaier *et al* (2014) Sorafenib induces ferroptosis in human cancer cell lines originating from different solid tumors. *Anticancer Res.* **34** 6417. PMID: 25368241.

Wilhelm *et al* (2004) BAY 43-9006 exhibits broad spectrum oral antitumor activity and targets the RAF/MEK/ERK pathway and receptor tyrosine kinases involved in tumor progression and angiogenesis. *Cancer Res.* **64** 7099. PMID: 15466206.

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