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Print Date: Feb 17th 2016

Certificate of Analysis

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Product Name: **Ki 20227** **Catalog No.: 4481** **Batch No.: 6**

CAS Number: 623142-96-1

IUPAC Name: *N*-[4-[(6,7-Dimethoxy-4-quinolinyl)oxy]-2-methoxyphenyl]-*N'*-[1-(2-thiazolyl)ethyl]urea

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: $C_{24}H_{24}N_4O_5S$

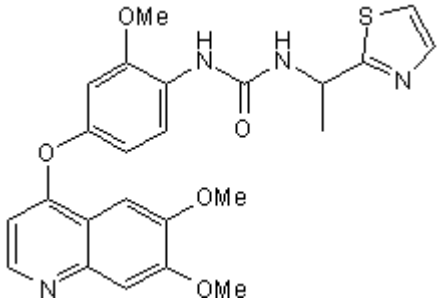
Batch Molecular Weight: 480.54

Physical Appearance: Pale yellow solid

Solubility: DMSO to 100 mM
ethanol to 10 mM with gentle warming

Storage: Store at +4°C

Batch Molecular Structure:



2. ANALYTICAL DATA

TLC: R_f = 0.36 (Dichloromethane:Methanol [9:1])

HPLC: Shows 99.6% purity

^{1}H NMR: Consistent with structure

Mass Spectrum: Consistent with structure

Microanalysis:

	Carbon	Hydrogen	Nitrogen
Theoretical	59.99	5.03	11.66
Found	59.92	5.05	11.64

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Description:

Inhibitor of c-Fms tyrosine kinase (M-CSFR, CSF1R) (IC_{50} values are 2, 12, 217 and 451 nM for c-Fms, VEGFR-2, PDGFRβ and c-Kit respectively). Does not inhibit Flt3, EGFR or c-Src. Suppresses osteoclast differentiation and osteolysis in a rat bone metastasis model.

Physical and Chemical Properties:

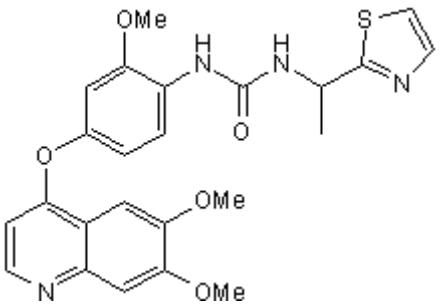
Batch Molecular Formula: $C_{24}H_{24}N_4O_5S$

Batch Molecular Weight: 480.54

Physical Appearance: Pale yellow solid

Minimum Purity: >97%

Batch Molecular Structure:



Storage: Store at +4°C

Solubility & Usage Info:

DMSO to 100 mM
ethanol to 10 mM with gentle warming

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. Our standard recommendations are:

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:

Ohno *et al* (2006) A c-fms tyrosine kinase inhibitor, Ki20227, suppresses osteoclast differentiation and osteolytic bone destruction in a bone metastasis model. Mol.Cancer Ther. ***5*** 2634. PMID: 17121910.

Ohno *et al* (2007) The orally-active and selective c-Fms tyrosine kinase inhibitor Ki20227 inhibits disease progression in a collagen-induced arthritis mouse model. Eur.J.Immunol. ***38*** 283. PMID: 18085662.

Kubota *et al* (2009) M-CSF inhibition selectively targets pathological angiogenesis and lymphangiogenesis. J.Exp.Med. ***206*** 1089. PMID: 19398755.