Sorafenib

#8705 Store at -20°C

☑ 10 mg

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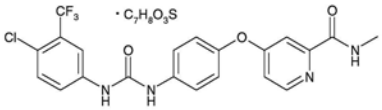
For Research Use Only. Not For Use In Diagnostic Procedures.

Background: Sorafenib, also known as Bay 43-9006, is a novel multikinase inhibitor that targets the RAF family of serine/threonine kinases and tyrosine kinase receptors involved in tumor progression and tumor angiogenesis, including: VEGFR-2 (IC_{50} = 90 nM), VEGFR-3 (IC_{50} = 20 nM), PDGFR- (IC_{50} = 57 nM), c-KIT (IC_{50} = 68 nM), and Flt3 (IC_{50} = 58 nM) (1). Research studies have demonstrated that sorafenib induces apoptosis in several tumor cell lines through the down-regulation of the antiapoptotic protein myeloid cell leukemia-1 (Mcl-1). Down-regulation of Mcl-1 by sorafenib is associated with the release of cytochrome c from mitochondria into the cytosol and caspase activation, leading to apoptotic cell death (2). STAT3 inhibition by sorafenib has been observed in multiple cell types (3-5).

Molecular Formula: $C_{21}H_{16}ClF_3N_4O_3 \bullet C_7H_8O_3S$

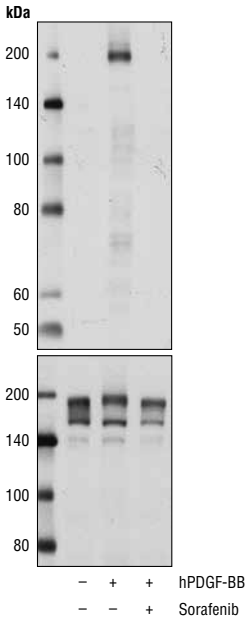


Molecular Weight: 637.03 g/mol

Solubility: Soluble in DMSO at 200 mg/ml; very poorly soluble in ethanol and water with maximum solubility in water ~10-20 µM.

Purity: >99%.

Directions for Use: Sorafenib is supplied as a lyophilized powder. For a 10 mM stock, reconstitute the 10 mg in 1.57 ml DMSO. Working concentrations and length of treatment can vary depending on the desired effect, but it is typically used as a pretreatment at 0.1-10 µM for 0.5-2 hr prior to treating with a stimulator. It can also be used alone, with varying treatment times lasting up to 24 hr.



Western blot analysis of extracts from NIH/3T3 cells, serum-starved overnight and untreated or treated with hPDGF-BB #8912 (100 ng/ml, 5 min) either with or without sorafenib pre-treatment (1 µM, 2 hr), using Phospho-PDGF Receptor β (Tyr1009) (42F9) Rabbit mAb #3124 (upper) or PDGF Receptor β (28E1) Rabbit mAb #3169 (lower).

Storage: Store lyophilized or in solution at -20°C, desiccated. In lyophilized form, the chemical is stable for 24 months. Once in solution, use within 3 months to prevent loss of potency. Aliquot to avoid multiple freeze/thaw cycles.

Background References:

(1) Wilhelm, S.M. et al. (2004) *Cancer Res* 64, 7099-109.

(2) Yu, C. et al. (2005) *Oncogene* 24, 6861-9.

(3) Zhao, W. et al. (2011) *Anticancer Drugs* 22, 79-88.

(4) Huang, S. and Sinicrope, F.A. (2010) *Mol Cancer Ther* 9, 742-50.

(5) Yang, F. et al. (2008) *Mol Cancer Ther* 7, 3519-26.

Applications Key: **W**—Western **IP**—Immunoprecipitation **IHC**—Immunohistochemistry **ChIP**—Chromatin Immunoprecipitation **IF**—Immunofluorescence **F**—Flow cytometry **E-P**—ELISA-Peptide

Species Cross-Reactivity Key: **H**—human **M**—mouse **R**—rat **Hm**—hamster **Mk**—monkey **Mi**—mink **C**—chicken **Dm**—D. melanogaster **X**—Xenopus **Z**—zebrafish **B**—bovine **Dg**—dog **Pg**—pig **Sc**—S. cerevisiae **Ce**—C. elegans **Hr**—horse **All**—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.