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# Sorafenib

Store at -20C  
#8705

10 mg

**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<sub>50</sub> = 90 nM), VEGFR-3 (IC<sub>50</sub> = 20 nM), PDGFR- (IC<sub>50</sub> = 57 nM), c-KIT (IC<sub>50</sub> = 68 nM), and Flt3 (IC<sub>50</sub> = 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<sub>21</sub>H<sub>16</sub>ClF<sub>3</sub>N<sub>4</sub>O<sub>3</sub> • C<sub>7</sub>H<sub>8</sub>O<sub>3</sub>S

## Molecular Weight

637.03 g/mol

## Purity

>99%

## CAS

475207-59-1

## Solubility

Soluble in DMSO at 200mg/ml.

## Storage

Store lyophilized or in solution at -20°C. In lyophilized form, the chemical is stable for 24 months. Once in solution, use within 3 months to prevent loss of potency.

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

## 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.

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