

Product Data Sheet

Product Name: BAY 41-2272

Cat. No.: GC10192

Chemical Properties

Cas. No. 256376-24-6

Chemical Name 5-cyclopropyl-2-(1-(2-fluorobenzyl)-1H-pyrazolo[3,4-b]pyridin-3-yl)pyrimidin-4-amine

SMILES FC1=CC=CC=C1CN2N=C(C3=CC=CN=C23)C(N=C4N)=NC=C4C5CC5

Formula $C_{20}H_{17}FN_6$ M.Wt 360.39

Solubility DMF: 16.6 mg/ml, DMF:PBS(pH 7.2) (1:6): 0.14 mg/ml, DMSO: 12.5 mg/ml, Ethanol: 0.16 mg/ml
Storage Store at -20°C

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution: ship with blue ice. All other available sizes: ship with RT, or blue ice upon request.

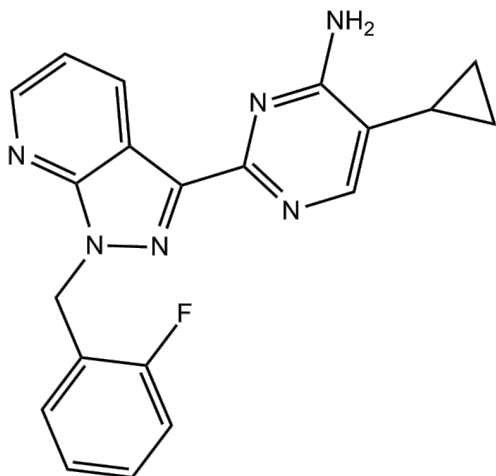
Caution: Product has not been fully validated for medical applications. For research use only.

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Structure



Background

BAY 41-2272 is an activator of nitric oxide-sensitive guanylyl cyclase (NO-sensitive GC) with EC₅₀ values of 0.3 $\mu\text{mol/L}$ and 3 $\mu\text{mol/L}$ in the presence and absence of 100 nmol/L DEA-NO, respectively [1].

NO-sensitive GC catalyzes the cGMP formation. It is generally considered as the most important receptor of the signaling molecule NO. The NO/cGMP pathway plays a role in many physiological processes such as the inhibition of platelet aggregation and the relaxation of smooth muscle [1].

In platelets, GSNO at 3 $\mu\text{mol/L}$ (a submaximally effective concentration) was used to assess a possible sensitizing effect of BAY 41-2272 on NO-sensitive GC. The cGMP response resulted from the application of NO at this concentration in the absence of BAY 41-2272 was only marginal. In the presence of BAY 41-2272 at 100 $\mu\text{mol/L}$, treatment with GSNO at 3 $\mu\text{mol/L}$ resulted in a rapid increase in cGMP up to 1000 pmol/10⁹ platelets [1].

The sGC/NO system was implicated in the pathogenesis of erectile dysfunction. Intravenous treatment with BAY 41-2272 at 1 mg/kg induced only a very weak erection in rabbits, with a maximal length of exposed mucosa of about 3mm at 10 min, and the effect lasted for approximate 30 minutes.

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SNP is a NO donor. Simultaneous administration of SNP potentiated the effect of BAY 41-2272. Intravenous treatment with SNP at 0.2 mg/kg resulted in a short-lasting erection of about 5~10 minutes, and a peak length of uncovered penile mucosa of 5 mm. Administration with BAY 41-2272 at 1 mg/kg IV followed by SNP at 0.2 mg/kg IV 5 minutes later, resulted in lengths of ensuing erection with a mean of 15 mm, longer than lengths resulted from treatments with two compounds separately [2].

References:

- [1]. Mullershausen F, Russwurm M, Friebe A, et al. Inhibition of phosphodiesterase type 5 by the activator of nitric oxide-sensitive guanylyl cyclase BAY 41-2272. *Circulation*, 2004, 109(14): 1711-1713.
- [2]. Bischoff E, Schramm M, Straub A, et al. BAY 41-2272: a stimulator of soluble guanylyl cyclase induces nitric oxide-dependent penile erection in vivo. *Urology*, 2003, 61(2): 464-467.

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