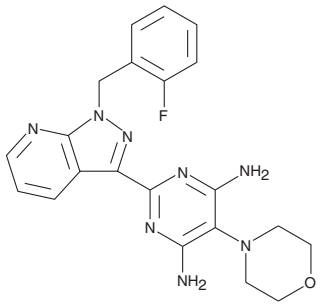
PRODUCT INFORMATION

BAY 41-8543

Item No. 10011131

CAS Registry No.: 256498-66-5
Formal Name: 2-[1-[(2-fluorophenyl)methyl]-1H-pyrazolo[3,4-b]pyridin-3-yl]-5-(4-morpholinyl)-4,6-pyrimidinediamine
MF: $C_{21}H_{21}FN_8O$
FW: 420.4
Purity: ≥98%
UV/Vis.: λ_{max}: 212, 327 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

BAY 41-8543 is supplied as a crystalline solid. A stock solution may be made by dissolving the BAY 41-8543 in the solvent of choice, which should be purged with an inert gas. BAY 41-8543 is soluble in dimethyl formamide (DMF). The solubility of BAY 41-8543 in this solvent is approximately 3 mg/ml.

BAY 41-8543 is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, BAY 41-8543 should first be dissolved in DMF and then diluted with the aqueous buffer of choice. BAY 41-8543 has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Soluble guanylate cyclase (sGC) is the primary cellular receptor for nitric oxide (NO). NO binds and activates a heme group in sGC, initiating the conversion of GTP to the second messenger cyclic GMP (cGMP). BAY 41-8543 is a heme-dependent stimulator of sGC, increasing the activity of recombinant sGC dose-dependently, from 0.1 nM to 100 µM, up to 92-fold.[1] Surprisingly, NO donors synergize with BAY 41-8543 in stimulating recombinant sGC.[1] BAY 41-8543 relaxes vessels and inhibits platelet aggregation *in vitro* at nM concentrations.[1] *In vivo*, BAY 41-8543 decreases blood pressure dose-dependently, prolongs bleeding time, and reduces thrombosis.[2] Inhalation of microparticles containing BAY 41-8543 increases pulmonary vasodilation without changing mean arterial pressure, suggesting that agonists of sGC may be efficacious in treating pulmonary hypertension.[3]

References

1. Stasch, J.-P., Alonso-Alija, C., Apeler, H., *et al.* Pharmacological actions of a novel NO-independent guanylyl cyclase stimulator, BAY 41-8543: *In vitro* studies. *Br. J. Pharmacol.* **135(2)**, 333-343 (2002).
2. Stasch, J.-P., Dembowsky, K., Perzborn, E., *et al.* Cardiovascular actions of a novel NO-independent guanylyl cyclase stimulator, BAY 41-8543: *In vivo* studies. *Br. J. Pharmacol.* **135(2)**, 344-355 (2002).
3. Evgenov, O.V., Kohane, D.S., Bloch, K.D., *et al.* Inhaled agonists of soluble guanylate cyclase induce selective pulmonary vasodilation. *Am. J. Respir. Crit. Care Med.* **176(11)**, 1138-1145 (2007).

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