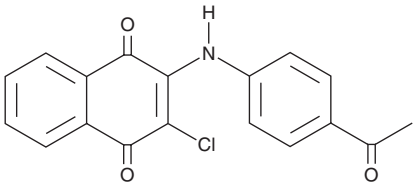
PRODUCT INFORMATION

NQ301

Item No. 21958

CAS Registry No.:	130089-98-4
Formal Name:	2-[(4-acetylphenyl)amino]-3-chloro-1,4-naphthalenedione
MF:	$C_{18}H_{12}ClNO_3$
FW:	325.8
Purity:	≥98%
UV/Vis.:	λ_{max}: 233, 305, 474 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

NQ301 is supplied as a crystalline solid. A stock solution may be made by dissolving the NQ301 in the solvent of choice, which should be purged with an inert gas. NQ301 is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of NQ301 in these solvents is approximately 2, 14, and 16 mg/ml, respectively.

Description

NQ301 is a naphthoquinone with diverse biological activities, including antiplatelet, antithrombotic, anti-inflammatory, and antimicrobial properties.[1-4] It inhibits rabbit platelet aggregation induced by the thromboxane A_2 receptor agonist U-46619 (Item No. 16450) *in vitro* (IC_{50} = 0.58 µM) and inhibits the conversion of arachidonic acid to thromboxane B_2 in rabbit platelets in a concentration-dependent manner.[1] It also inhibits human platelet aggregation induced by ADP, collagen, epinephrine, and the calcium ionophore A23187 *in vitro* (IC_{50}s = 3.21, 15.69, 8.44, and 44.2 µM, respectively).[2] NQ301 (50 and 100 mg/kg) increases tail bleeding time and exhibits a protective effect against pulmonary thrombosis in mice. It inhibits the protein tyrosine phosphatase CD45 with an IC_{50} value of 0.29 µM.[3] NQ301 (3 mg/kg) inhibits ovalbumin-induced footpad swelling in a mouse model of delayed-type hypersensitivity. It is also active against *C. albicans*, *A. niger*, *B. subtilis*, *S. aureus*, *E. coli*, and *P. aeruginosa* (MICs = 12.5-50 µg/ml).[4]

References

1. Jin, Y.-R., Cho, M.-R., Lee, K.-S., *et al.* An antithrombotic agent, NQ301, inhibits thromboxane A_2 receptor and synthase activity in rabbit platelets. *Basic Clin. Pharmacol. Toxicol.* **97(3)**, 162-167 (2005).
2. Kang, W.-S., Ryu, C.-K., Chung, K.-H., *et al.* Antiplatelet and antithrombotic activities of NQ301, 2-chloro-3-(4-acetophenyl)-amino-1,4-naphthoquinone. *Biol. Pharm. Bull.* **22(12)**, 1284-1287 (1999).
3. Perron, M.D., Chowdhury, S., Aubry, I., *et al.* Allosteric noncompetitive small molecule selective inhibitors of CD45 tyrosine phosphatase suppress T-cell receptor signals and inflammation in vivo. *Mol. Pharmacol.* **85(4)**, 553-563 (2014).
4. Ryu, C.-K. and Kim, D.-H. The antimicrobial activities of some 1,4-naphthalenediones (III). *Arch. Pharm. Res.* **16(2)**, 161-163 (1993).

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