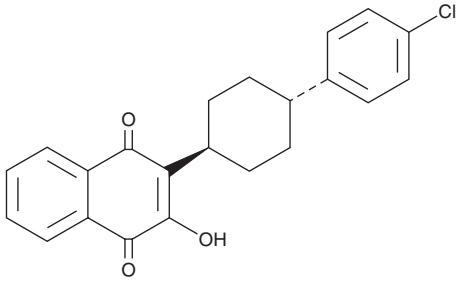
PRODUCT INFORMATION

Atovaquone

Item No. 23802

CAS Registry No.:	95233-18-4
Formal Name:	2-[*trans*-4-(4-chlorophenyl)cyclohexyl]-3-hydroxy-1,4-naphthalenedione
Synonyms:	BW 566C, BW 556C-80
MF:	$C_{22}H_{19}ClO_3$
FW:	366.8
Purity:	≥98%
UV/Vis.:	λ_{max}: 203, 220, 253, 284 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

Atovaquone is supplied as a crystalline solid. A stock solution may be made by dissolving the atovaquone in the solvent of choice. Atovaquone is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of atovaquone in DMSO and DMF is approximately 1 mg/ml. Atovaquone is also slightly soluble in ethanol.

Atovaquone is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, atovaquone should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Atovaquone has a solubility of approximately 0.16 mg/ml in a 1:5 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Atovaquone is a broad-spectrum antiprotozoal agent that is active against *Plasmodium*, *Toxoplasma*, and *Babesia*, among other protozoa.[1] It inhibits complex III activity on dihydroorotate in isolated *P. falciparum* and *P. yoelii* mitochondria more potently than in rat liver mitochondria (EC_{50}s = 0.95, 0.94, and 510 nM, respectively) and depolarizes the mitochondrial membrane in *P. yoelii*-infected mouse erythrocytes (EC_{50} = 260 nM).[2,3] Atovaquone also inhibits transport mediated by human breast cancer resistance protein (BCRP) and P-glycoprotein in membrane vesicles (IC_{50}s = 0.23 and 6.8 µM, respectively).[4] It inhibits the growth of *T. gondii* in MRC-5 human lung fibroblasts *in vitro* (IC_{50} = ~64 nM) and increases mean survival of *T. gondii*-infected mice from 5.5 to 21.2 days when administered at a dose of 100 mg/kg per day.[5] Formulations containing atovaquone have been used in the treatment of *Pneumocystis* pneumonia and toxoplasmosis as well as in combination with proguanil in the treatment of malaria and babesiosis.

References

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2. Fry, M. and Pudney, M. *Biochem. Pharmacol.* **43(7)**, 1545-1553 (1992).
3. Srivastava, I.K., Rottenberg, H., and Vaidya, A.B. *J. Biol. Chem.* **272(7)**, 3961-3966 (1997).
4. Rijpma, S.R., van den Heuvel, J.J., van der Velden, M., *et al. Malar. J.* **13(359)**, (2014).
5. Romand, S., Pudney, M., and Derouin, F. *Antimicrob. Agents Chemother.* **37(11)**, 2371-2378 (1993).

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