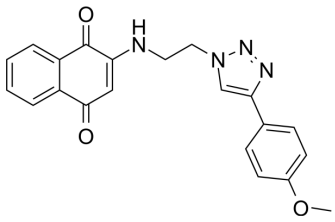
Antimalarial agent 25

Cat. No.:	HY-149938
CAS No.:	2944456-41-9
Molecular Formula:	$C_{21}H_{18}N_4O_3$
Molecular Weight:	374.39
Target:	Parasite
Pathway:	Anti-infection
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description

Antimalarial agent 25 is an orally active 1,4-naphthoquinones derivative with antimalarial activity. Antimalarial agent 25 shows cytotoxicity against P. falciparum. Antimalarial agent 25 inhibits P. burghei induced parasitemia in vivo[1].

In Vitro

Antimalarial agent 25 (compound 8) inhibits P. falciparum with IC_{50} of 4.2 μM, while shows CC_{50} on mammalian cells with CC50s of 289.2 μM (HepG2), and 400.6 μM (Vero), respectively[1].

Antimalarial agent 25 (compound 8) (15.62-1000 μM; 2 h) shows hemolytic activity below 40% at concentrations from 15.6 to 250 μM in uninfected human erythrocytes[1].

Antimalarial agent 25 (compound 8) (30-0.411 μg/mL; 48 h) causes morphological changes such as complete cytoplasmic degradation and loss of membrane integrity in the W2 strain of P. falciparum[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[1]

Cell Line:	W2 strain of P. falciparum (CQ-resistant)
Concentration:	30 - 0.411 μg/mL
Incubation Time:	48 h
Result:	Presented completely degraded cytoplasm with loss of membrane integrity, dense cytoplasm with some possible undefined organelles in degenerating stage, and a possible deteriorated food vacuole.

In Vivo

Antimalarial agent 25 (compound 8) (30 mg/kg; po; once daily for 4 consecutive days) shows antimalarial activity in female albino swiss mice[1].Antimalarial agent 25 (300 mg/kg; po; single dose) shows no significant pathological changes and histopathological damage in female mice[1].

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Animal Model:	Mice infected with Plasmodium berghei ANKA[1]
Dosage:	30 mg/kg
Administration:	Oral administration; for 4 consecutive days

Result:	Partly reduced P. berghei infection. Parasitemia decreased by 33% on the seventh day (post-treatment).

REFERENCES

[1]. Costa Souza RM, et al. Biological activity of 1,2,3-triazole-2-amino-1,4-naphthoquinone derivatives and their evaluation as therapeutic strategy for malaria control. Eur J Med Chem. 2023 Jul 5;255:115400.

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