

# Supporting Information

for

## *Imidazoquinones as antimalarial and anti-pneumocystis agents*

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## 1. HPLC traces for imidazoquinines 5

### 1.1. Elution conditions

The purity degrees of all compounds were checked by HPLC using a Merck Hitachi ELITE LaChrom equipped with an L-2130 pump, an L-2200 autosampler and an L-2455 diode-array detector. Samples were injected on a Merck Purospher STAR RP-18e 125 cm×4.6 mm (5µm) column equipped with a Merck Lichrocart pre-column (Merck, Germany). Analyses were run over 20 minutes at a 1 mL/min flow rate according to either A or B elution programs (see below). The traces were recorded at 265 nm.

**A** – isocratic elution with acetonitrile/aq. sodium acetate 0.05 M 40:60 (v/v).

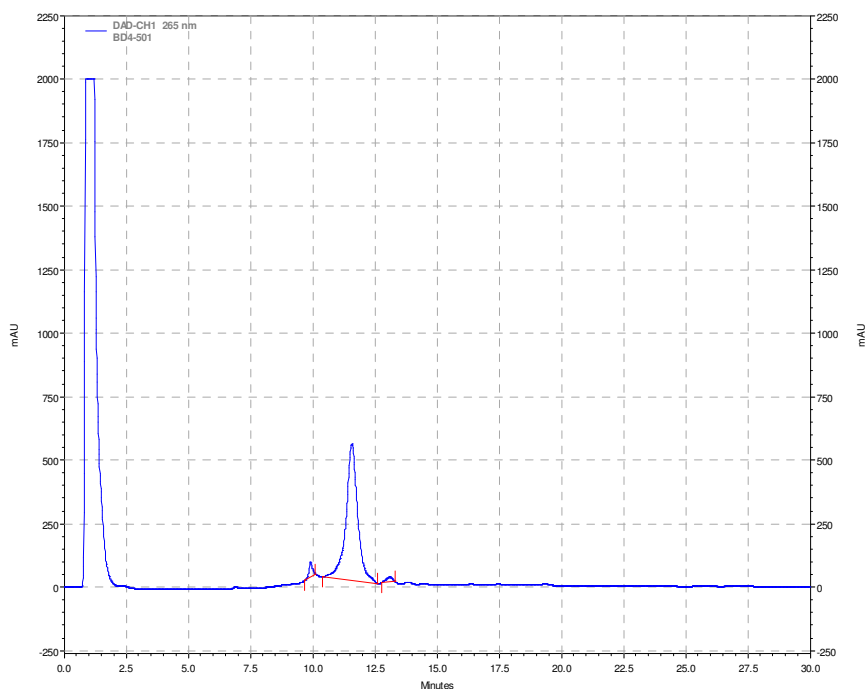
**B** – binary system with solvent C = 0.1% (v/v) aq. formic acid (solution C) and solvent D = acetonitrile.

Elution program: 0-3', 0% D (i.e., isocratic with 100% C); 3-5', 0 to 30% D; 5-15', 30 to 50% D; 15-20', 50% D (i.e., isocratic with C/D 1:1 v/v).

### 1.2. Chromatograms

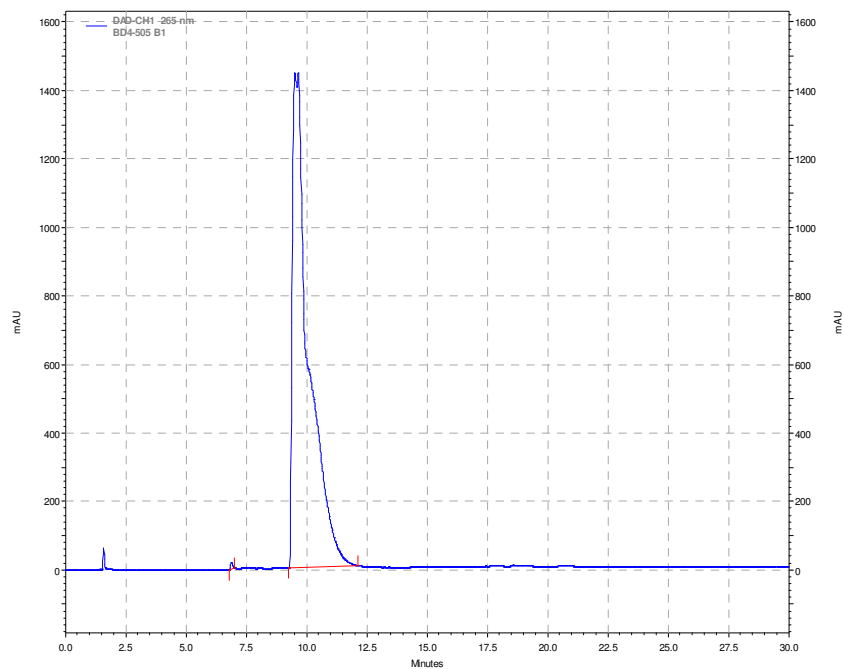
#### Compound 5a

<i>Solvent system</i>	<i>Retention time (min)</i>	<i>Purity (%)</i>
<i>B</i>	11.58	95.09



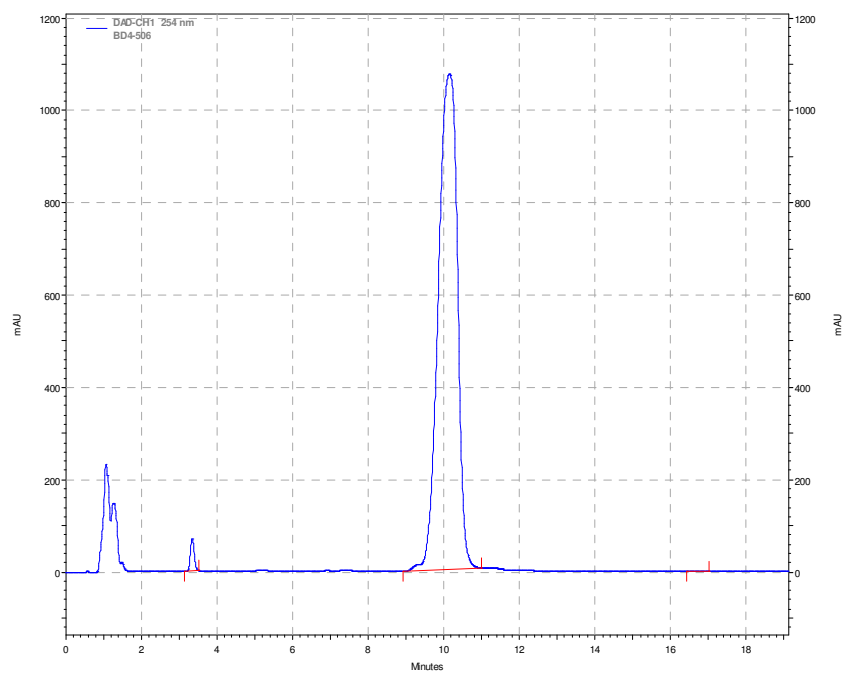
**Compound 5b**

<i>Solvent system</i>	<i>Retention time (min)</i>	<i>Purity (%)</i>
<i>B</i>	<i>9.67</i>	<i>99.84</i>



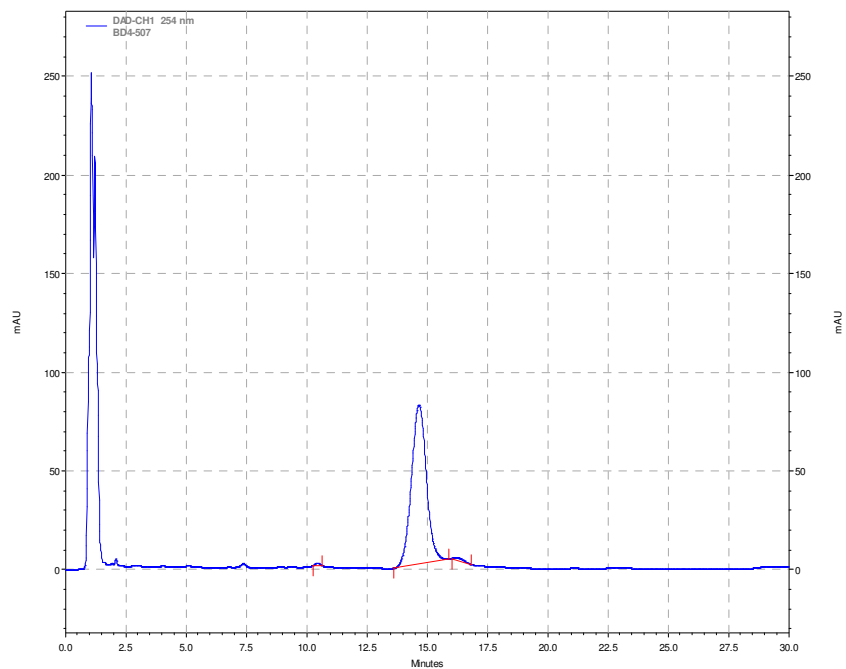
**Compound 5c**

<i>Solvent system</i>	<i>Retention time (min)</i>	<i>Purity (%)</i>
<i>A</i>	<i>10.15</i>	<i>98.72</i>



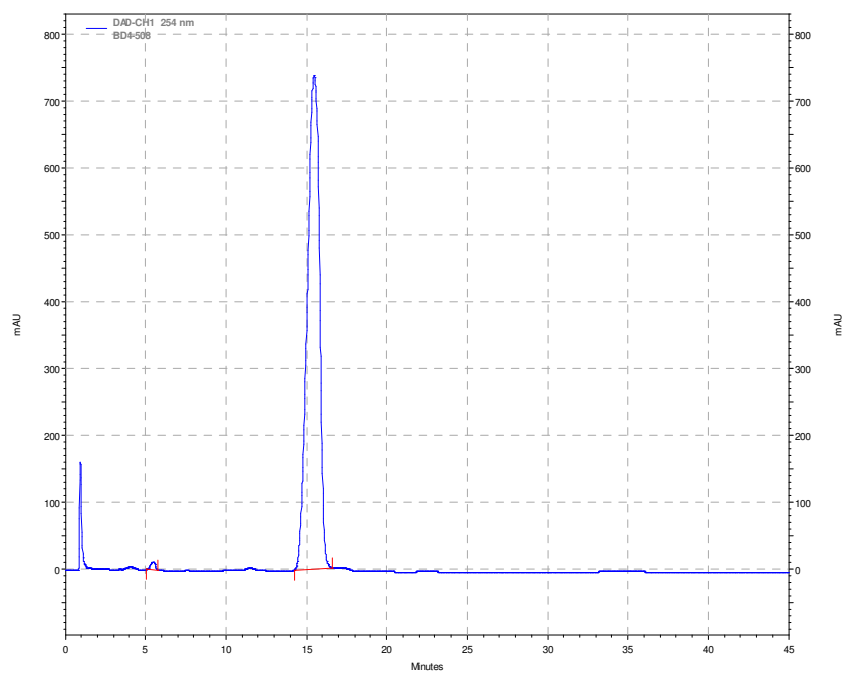
**Compound 5d**

<b>Solvent system</b>	<b>Retention time (min)</b>	<b>Purity (%)</b>
A	14.67	98.62



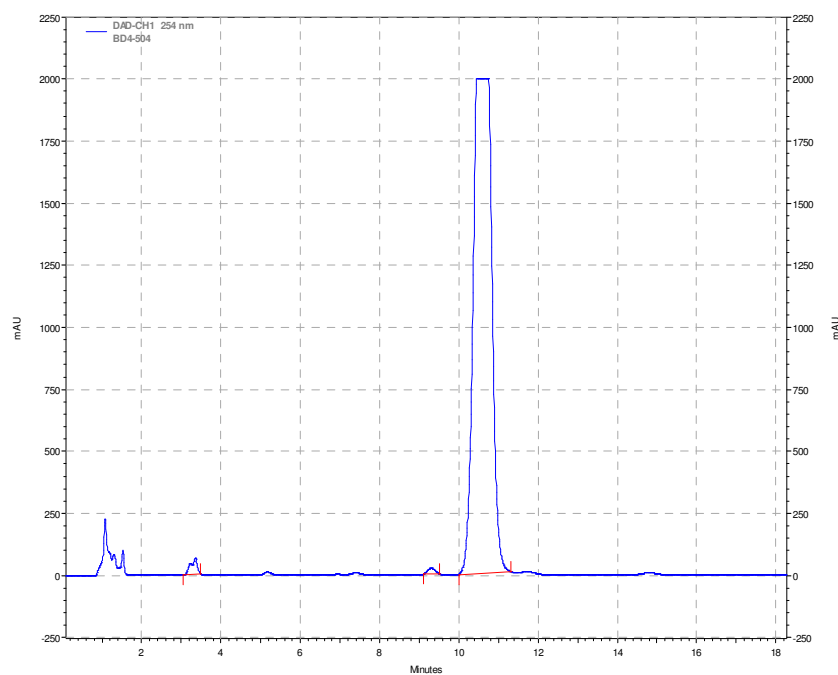
**Compound 5e**

<b>Solvent system</b>	<b>Retention time (min)</b>	<b>Purity (%)</b>
A	15.48	99.39



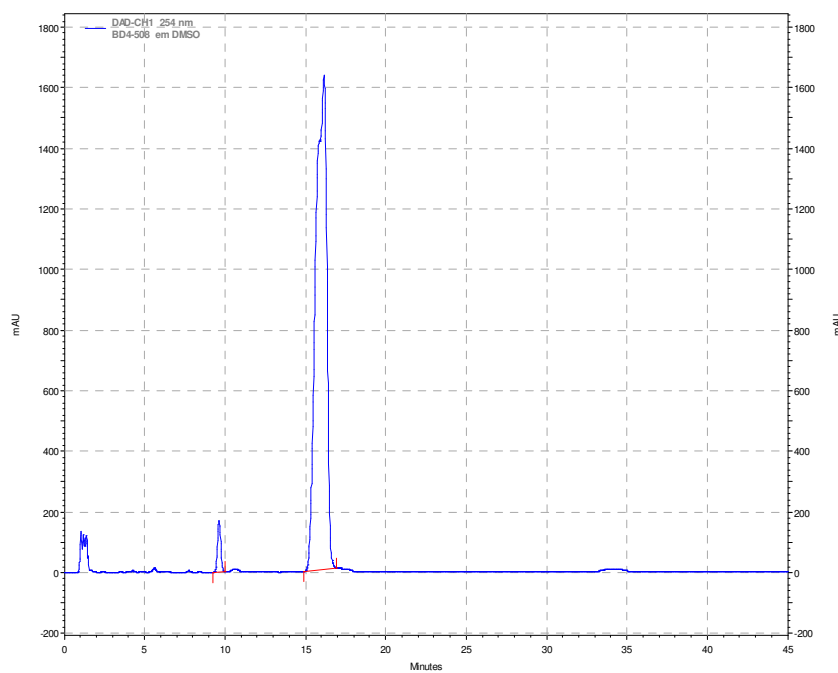
**Compound 5f**

<b>Solvent system</b>	<b>Retention time (min)</b>	<b>Purity (%)</b>
A	10.45	98.31



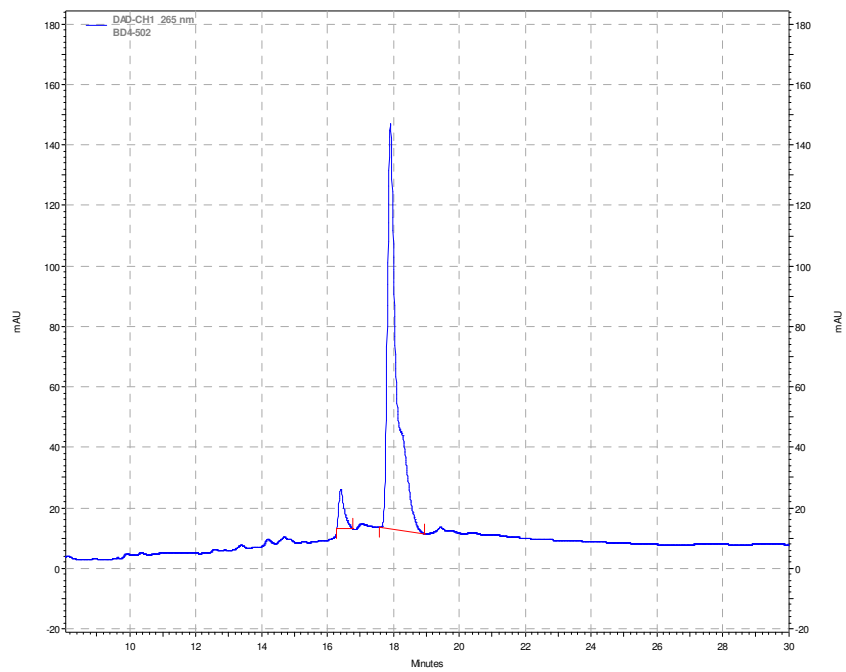
**Compound 5g**

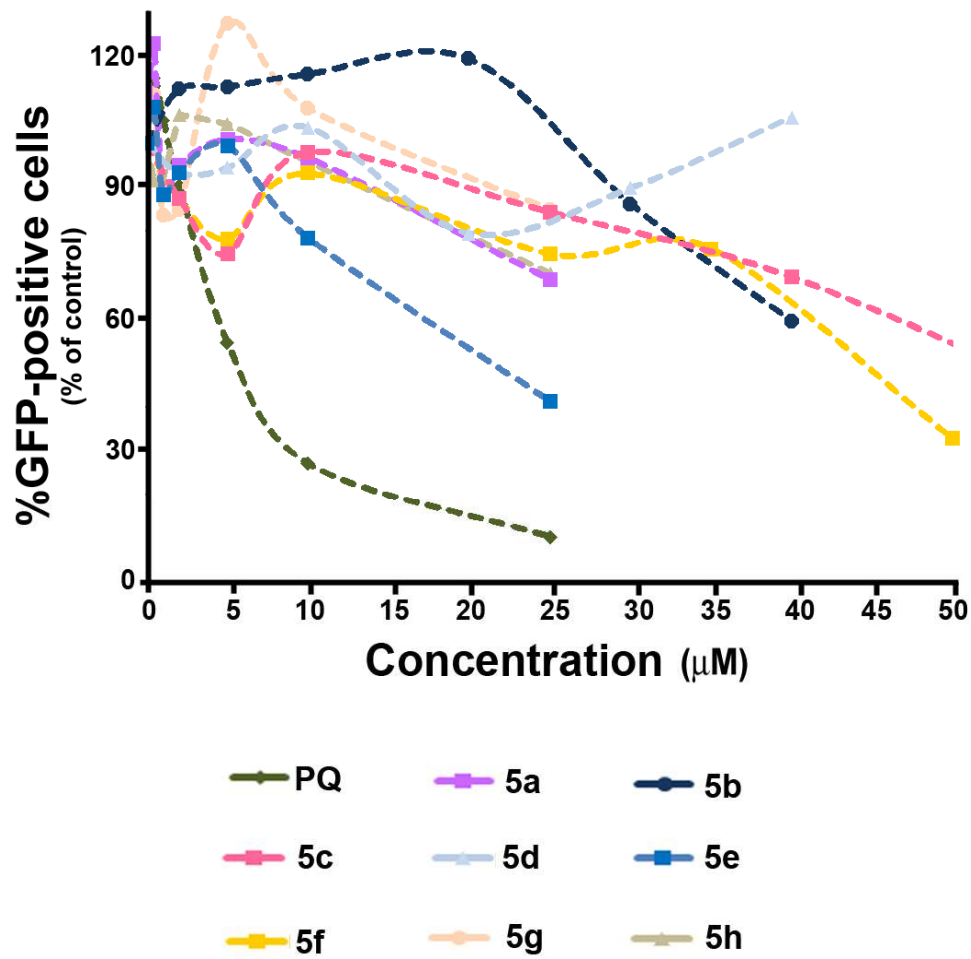
<b>Solvent system</b>	<b>Retention time (min)</b>	<b>Purity (%)</b>
A	16.17	96.98



**Compound 5h**

<i>Solvent system</i>	<i>Retention time (min)</i>	<i>Purity (%)</i>
<i>B</i>	<i>17.91</i>	<i>94.56</i>





**Figure S1.** Flow cytometry-based *Plasmodium* liver stage infection assay of dose-dependencies of percentage of infected cells in the presence of increasing concentrations of the various compounds tested, relative to that of solvent-treated samples in the same experiment.

**Table S1.** Relevant parameters for preliminary ADME profiling of imidazoquinones **5a-h** (data for parent PQ, **1**, and for precursor imidazolidin-4-ones **4a,b** are also included for comparison).

Compd	$t_{1/2}$ /days <sup>a</sup>	LogP <sup>b</sup>	logS (solubility in mg/L) <sup>b</sup>	Drug score <sup>c</sup>	Molecular Weight (g/mol)
<b>1</b>	-	2.76	-3.66 (56.4)	0.48	259
<b>4a</b>	> 3	3.07	-3.94 (40.5)	0.81	356
<b>4b</b>		3.25	-4.10 (29.8)	0.76	370
<b>5a</b>	> 3	2.19	-3.44 (150)	0.81	413
<b>5b</b>		2.49	-3.57 (120)	0.77	427
<b>5c</b>		2.93	-3.99 (46.5)	0.43	455
<b>5d</b>		3.36	-4.25 (26.6)	0.33	469
<b>5e</b>		3.40	-4.20 (29.7)	0.56	469
<b>5f</b>		2.94	-4.62 (11.7)	0.57	487
<b>5g</b>		3.60	-4.97 (5.40)	0.56	503
<b>5h</b>		2.54	-3.57 (110)	0.78	427

<sup>a</sup> in 80% human plasma at 37 °C;

<sup>b</sup> estimated by the ALOGPS 2.1 algorithm;<sup>45</sup>

<sup>c</sup> estimated by the Osiris Property Explorer;<sup>46</sup>