Table S1: Comparison of inhibitory activity of 12 known antimalarial drugs on immature and mature stages of the *P. falciparum* gametocytes as obtained from different assay platforms on different gametocyte stages.

| Compound         | IC₅₀ (nM) | NF₅₄<sup>Pf<sub>16</sub></sup> luciferase (48 h)<sup>a</sup> | Mitotracker (SALSA)<sup>b</sup> | NF₅₄<sup>Pf<sub>16</sub></sup> luciferase (72 h)<sup>&</sup><sup>c</sup><sup>d</sup> | Immature | Mature | Stage II | Stage III | Stage IV | Stage V | Immature<sup>&</sup> | Late stage<sup>e</sup> |
|------------------|----------|---------------------------------------------------------------|--------------------------------|---------------------------------------------------|----------|--------|----------|----------|----------|---------|----------|-----------------|
| DHA              | 20.5     | 2103                                                          | 2.7                            | 6.7                                               | 2.1      | >5000  | 0.9      | 91.5     |
| OZ439            | 20       | >5000                                                          | 5.2                            | 3.4                                               | 2        | >5000  | ND       | ND       |
| Chloroquine      | 5.92     | >5000                                                          | 98                             | >5000                                             | >5000    | >5000  | 76.75    | ND       |
| Amodiaquine      | 54       | >5000                                                          | 8.8                            | 107                                               | 2460     | 1780   | 189.71   | ND       |
| Piperazine        | 108      | 4000                                                          | 14                             | 31                                                | 4000     | 4000   | ND       | ND       |
| Pyronaridine      | 27       | 938                                                           | 10                             | 126                                               | 2579     | 2075   | 168.09   | 4914.3   |
| Lumefantrine      | 9.88     | 2382                                                          | 13                             | 15                                                | 599      | 520    | 7.82     | ND       |
| Methylene Blue    | 62.7     | 396                                                           | 15                             | 13                                                | 258      | 258    | 29.64    | 38.3     |
| Atovaquone        | >5000    | 1000                                                          | >5000                          | >5000                                             | >5000    | >5000  | >10 000  | ND       |
| Pyrimethamine     | >5000    | >5000                                                         | >5000                          | >5000                                             | >5000    | >5000  | >40 000  | ND       |
| Sulfadoxine       | >5000    | >5000                                                         | >5000                          | >5000                                             | >5000    | >5000  | ND       | ND       |
| Tafenoquine       | 3988     | 5000                                                          | 3680                           | 3730                                              | 3484     | 2449   | 3628     | 2505.1   |

<sup>a</sup> Data obtained from the assay platform developed here (48 h incubation)
<sup>b</sup> Data obtained from the SALSA assay in Plouffe et al. 2016 (72 h incubation)
<sup>c</sup> Data as published in Lucantoni et al. 2013 (72 h incubation)
<sup>d</sup> Data as published in Lucantoni et al. 2016 (72 h incubation)