**Supplemental Figure 1.** Mean serum plasma levels (± SD) of **A**) albendazole and **B**) albendazole sulfone. Serum levels were measured as described in the materials and methods.

**Supplementary methods.** The half-life (T1/2) was estimated as ln(2)/ke where ke is the elimination rate constant calculated from the log linear regression of the concentration-time data in the terminal phase. The area under the concentration-time curve from time 0 to the time of last quantifiable concentration (AUC0-t) and the area under the concentration-time curve from time 0 to infinity (AUC0-∞), calculated as the last quantifiable concentration divided by ke, were estimated using a linear-log trapezoidal method. Apparent clearance (CL/F) was estimated as dose/ AUC0-∞, and apparent volume of distribution (Vz/F) was estimated as dose/(ke\*AUC0-∞). In both circumstances, for albendazole metabolites, dose was adjusted for molecular weight differences relative to the parent. When the adjusted R2 was less than 0.85, the parameter was not estimated (NE). Tmax estimates were compared between treatment groups using an independent samples median test. All other pharmacokinetic parameters were natural log-transformed and compared between treatment groups using t-tests. Statistics were performed in SPSS 21 (IBM).

For the drug-drug interaction analysis, individual DEC, ALBSO, and ALBSO2 exposure parameters (Cmax, AUC0-t, AUC0-∞) were natural log transformed. Then, for each parameter, a 90% confidence interval was constructed, in accordance with an independent samples t-test implemented in SPSS 20 (IBM, Armonk, New York, USA), for the difference in means of the ln-transformed parameters between the two study regimens (three drug vs. two drug). The point estimate and limits of each 90% CI were then exponentiated to yield a 90% CI for the ratio (three drug/two drug) of geometric means for each parameter/analyte combination.

**Supplementary Table 1.** Summary of pharmacokinetic parameters for Diethylcarbamazine (DEC), Albendazole (ALB) and its metabolites Albendazole Sulfoxide (ALBSO) and Albendazole Sulfone (ALBSO2), and Ivermectin (IVM) when administered in either a two drug combination (DEC 6mg/kg + ALB 200mg) or a three drug combination (DEC 6mg/kg + IVM 6ug/kg + ALB 200mg).

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Parameter | DEC | | ALB | | ALBSO | | ALBSO2 | | IVM |
| 2-drug | 3-drug | 2-drug | 3-drug | 2-drug | 3-drug | 2-drug | 3-drug | 3-drug |
| T1/2 (hr) | 13.3 (23.6) | 14.6 (23.3) | 2.4 (28.6) | 2.5 (32) | 11.8 (33.9) | 11 (53.3) | 9.6 (29.1) | 9.5 (48) | 46.5 (38.7) |
| Tmax (hr)a | 2.5 (1,4) | 3 (1,6) | 2 (1,4) | 2 (1,6) | 4 (2,8) | 4 (1,12) | 6 (3,8) | 6 (1,12) | 6 (4,8) |
| Cmax (ng/mL) | 1631.3 (20.6) | 1797.5 (13.1) | 9.9 (70.1) | 16 (71.9) | 141.3 (50.6) | 147.6 (61.9) | 9.9 (49.6) | 9.1 (82.8) | 57 (27.6) |
| AUC0-t (hr\*ng/mL) | 26718 (33.7) | 27564 (26.3) | 25.1 (90.2) | 40.7 (80.2) | 2319 (48.1) | 2378 (94) | 102 (70.6) | 107 (142.4) | 1286 (27.7) |
| AUC0-∞ (hr\*ng/mL) | 27336 (34.5) | 28181 (27.2) | 64.6 (56.4) | NE | 2540 (44.4) | 2098 (112.5) | 191 (50.7) | 149 (138.1) | 1816 (46.3) |
| Vz/F (L) | 102.8 (31.9) | 119 (40.8) | 10773 (89.5) | NE | 1419.8 (36.7) | 1609 (74) | 16249 (44.9) | 20507 (77.6) | 415.5 (33.3) |
| CL/F (L/hr) | 5.3 (24.3) | 5.6 (27.4) | 3097 (87.7) | NE | 83.5 (63.5) | 101.1 (73.5) | 1174 (76.1) | 1499 (87.2) | 6.2 (37.4) |

Data are geometric mean (CV%) unless otherwise indicated. T1/2 terminal half-life, Tmax time of maximum plasma concentration, Cmax maximum plasma concentration, AUC area under the concentration-time curve, Vz/F apparent volume of distribution, CL/F apparent clearance.

a median (range)

**Supplementary Table 2.** Geometric mean ratios of Cmax, AUC0-t, and AUC0-∞ for the three analytes Diethylcarbamazine (DEC), Albendazole Sulfoxide (ALBSO) and Albendazole Sulfone (ALBSO2), between participants who received Ivermectin (IVM) and those who did not.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | | n with IVM | n without IVM | Ratio of geometric mean (with IVM/without IVM) | lower 90% CI | upper 90% CI |
| DEC | Cmax | 12 | 12 | 110.2 | 98.4 | 123.4 |
| AUC0-t | 12 | 12 | 103.2 | 82.7 | 128.7 |
| AUC0-∞ | 12 | 12 | 103.1 | 82.3 | 129.1 |
| ABZSO | Cmax | 12 | 12 | 104.4 | 69.4 | 157.2 |
| AUC0-t | 12 | 12 | 102.6 | 60.2 | 174.8 |
| AUC0-∞ | 10 | 11 | 82.6 | 47.6 | 143.4 |
| ABZSO2 | Cmax | 12 | 12 | 92.1 | 57 | 148.9 |
| AUC0-t | 12 | 12 | 104.2 | 46.6 | 233.1 |
| AUC0-∞ | 10 | 8 | 78.5 | 37.3 | 165.4 |

Supplementary Figure 1



**A**

**B**