**Supplementary Figure legends**

**Fig S1. Reduction of CaMKII activity in *S. mansoni* SWAP when treated with varying concentrations of the inhibitors, (A) STSP and (B) 1NAPP1.** Percentage CaMKII activity as compared to the activity of untreated *S. mansoni* SWAP (0.028 µg/µl).

STSP= Staurosporine, 1NAPP1= 1-Naphthyl PP1. n=3.

**Fig S2. Mammalian cytotoxicity, NFF cells.** Effect of PZQ, STSP, 1NAPP1 and inhibitor/PZQ combinations on NFF cells. The red lines indicate the LD50 concentration (See Table 2 for LD50 values). PZQ= Praziquantel, STSP= Staurosporine, 1NAPP1= 1-Naphthyl PP1. n=3.

**Fig S3. Mammalian cytotoxicity, Huh 7 cells.** Effect of PZQ, STSP, 1NAPP1 and inhibitor/PZQ combinations on Huh 7 cells. STSP= Staurosporine, 1 NAAP1= 1-Naphthyl PP1. N=3. The red lines indicate the LD50 concentration (See Table 2 for LD50 values).

**Fig S4. Mammalian cytotoxicity, AML 12 cells.** Effect of PZQ, STSP, 1NAPP1 and inhibitor/PZQ combinations on AML 12 cells. n=3. The red lines indicate the LD50 (See Table 2 for LD50 values).

**Fig S5. Effects of escalating PZQ dosage on total worm and liver egg numbers in infected mice.** Mice infected with *S. mansoni* given 5 weeks post cercarial challenge. Clearance of parasites is reflected in the reduction of adult parasites at perfusion and the reduced number of liver eggs.

**Fig S6. Liver enzyme levels in mice after treatment with STSP or 1NAPP1 individually, or in conjunction with PZQ.** The reported normal range of ALT (alanine transaminase) is 24-193IU/L and AST (aspartate aminotransferase) is 46-244 IU/L for female Swiss mice (Serfilippi *et al.*, 2003).

**Supplementary Table 1. Catalogue numbers / CAS of CaMK inhibitors used for initial *in vitro* screening of schistosomula.**

|  |  |  |  |
| --- | --- | --- | --- |
| Candidate Number | CaMK inhibitor name | Catalogue  | CAS |
| 1 | KN-93 | sc-202199 | 139298-40-1 |
| 2 | Staurosporine | sc-3510 | 62996-74-1 |
| 3 | Fasudil, Monohydrochloride Salt | sc-203418 | 105628-07-7 |
| 4 | Autocamtide-2-Related Inhibitory Peptide | sc-364668 | 167114-91-2 |
| 5 | 1-Naphthyl PP1 | sc-203765 | 221243-82-9 |
| 6 | CaM Kinase II (290-309) | [sc-201158](https://www.scbt.com/scbt/product/cam-kinase-ii-290-309-calmodulin-antagonist-115044-69-4?requestFrom=search) | 115044-69-4 |
| 7 | CaM Kinase II inhibitor | sc-3037 | -- |
| 8 | K-252a | sc-200517 | 99533-80-9 |
| 9 | KN-62 | sc-3560 | 127191-97-3 |
| 10 | Lavendustin C | [sc-202207](https://www.scbt.com/scbt/product/lavendustin-c-125697-93-0?requestFrom=search) | 125697-93-0 |
| 11 | Autocamtide-2 inhibitor | [sc-3117](https://www.scbt.com/scbt/product/autocamtide-2-inhibitor?requestFrom=search) | 167114-91-2 |
| 12 | K-252b | sc-200585 | 99570-78-2 |
| 13 | HA-1077 dihydrochloride | [sc-200583](https://www.scbt.com/scbt/product/ha-1077-dihydrochloride-103745-39-7?requestFrom=search) | 203911-27-7 |
| 14 | Arcyriaflavin A | sc-202470 | 118458-54-1 |
| 15 | CaM Kinase II inhibitor | sc-3039 | -- |

**Supplementary Table 2. List of primers used in quantitative real time PCR**

|  |  |  |  |
| --- | --- | --- | --- |
| Gene | Identification | Forward Primer(5’ – 3’) | Reverse Primer(5’ – 3’) |
| Tubulin α  | M80214 | cgatggtgcgctaaatgtgg | cgttgacatccttggggaca |
| CaMK11 | Smp\_011660.2 | atacgaaacgcctgtcaacc | agaattcccgagcaacaatg |
| IP33K  | Smp\_140840 | aagctgctcgatggtgaacg | ttgtgtcacgccactgcaaat |
| PKC  | Smp\_176360  | cattacaacgcaaaccacca | acggctacttcagcagcgta |
| RYR | Smp\_163570  | cgatccaggtcgtggtagtt | ctgatgtgcagcaaaagcat |
| PHK | Smp\_098840 | ttcgtgatgtcttgggttca | tatgcatccccttcgaaaac |