Supporting Information

# Slow, efficient and safe nanoplatform of tailored ZnS QD-Mycophenolic acid conjugates for *in vitro* drug delivery against Dengue virus 2 genome replication

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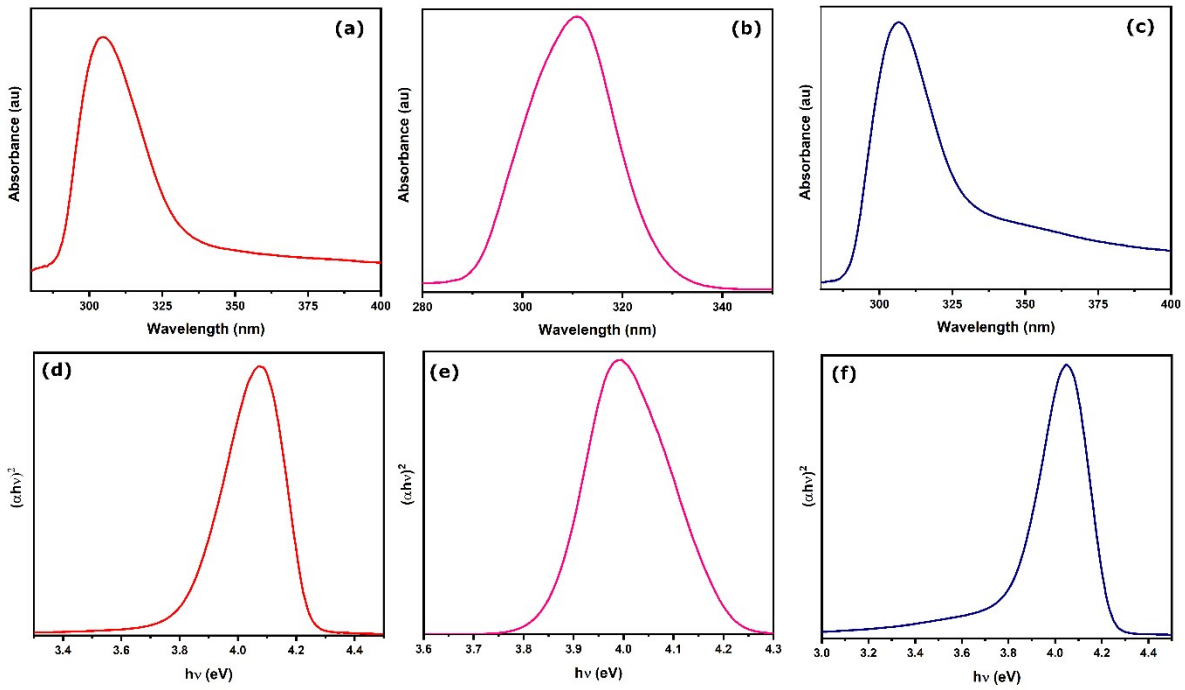


**Fig. S1.** Figure shows the UV-Vis absorption spectra of (a) Pure ZnS, (b) Pure MPA & (c) ZnS QD-MPA and Tauc plot of (d) Pure ZnS, (e) Pure MPA & (f) ZnS QD-MPA.

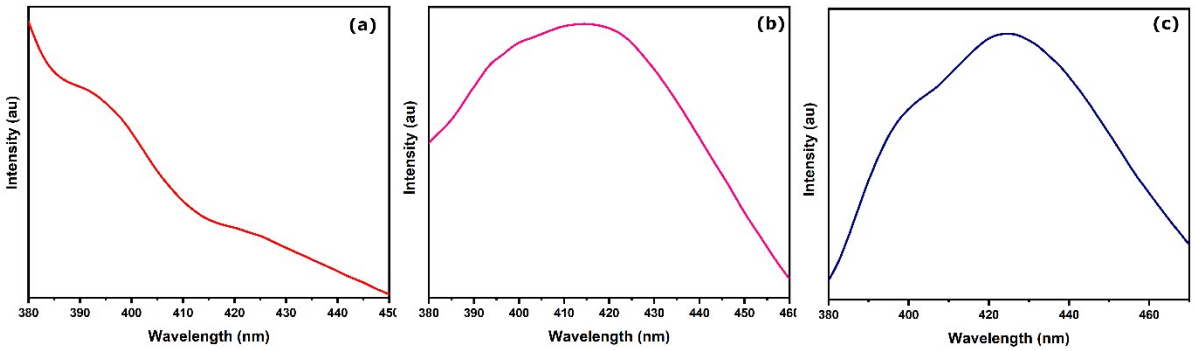


**Fig. S2.** Figure shows the Photo-luminescence spectra of (a) Pure ZnS (b) Pure MPA and (c) ZnS QD-MPA.

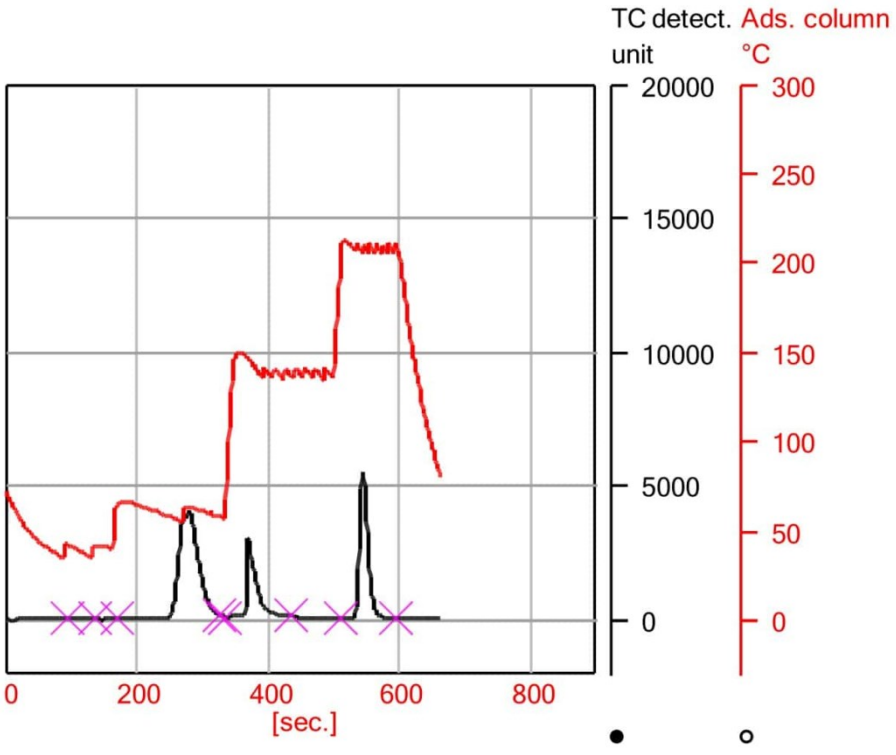


**Fig. S3.** CHNS elemental analysis. Chromatogram of ZnS QD MPA by CHNS analyser.

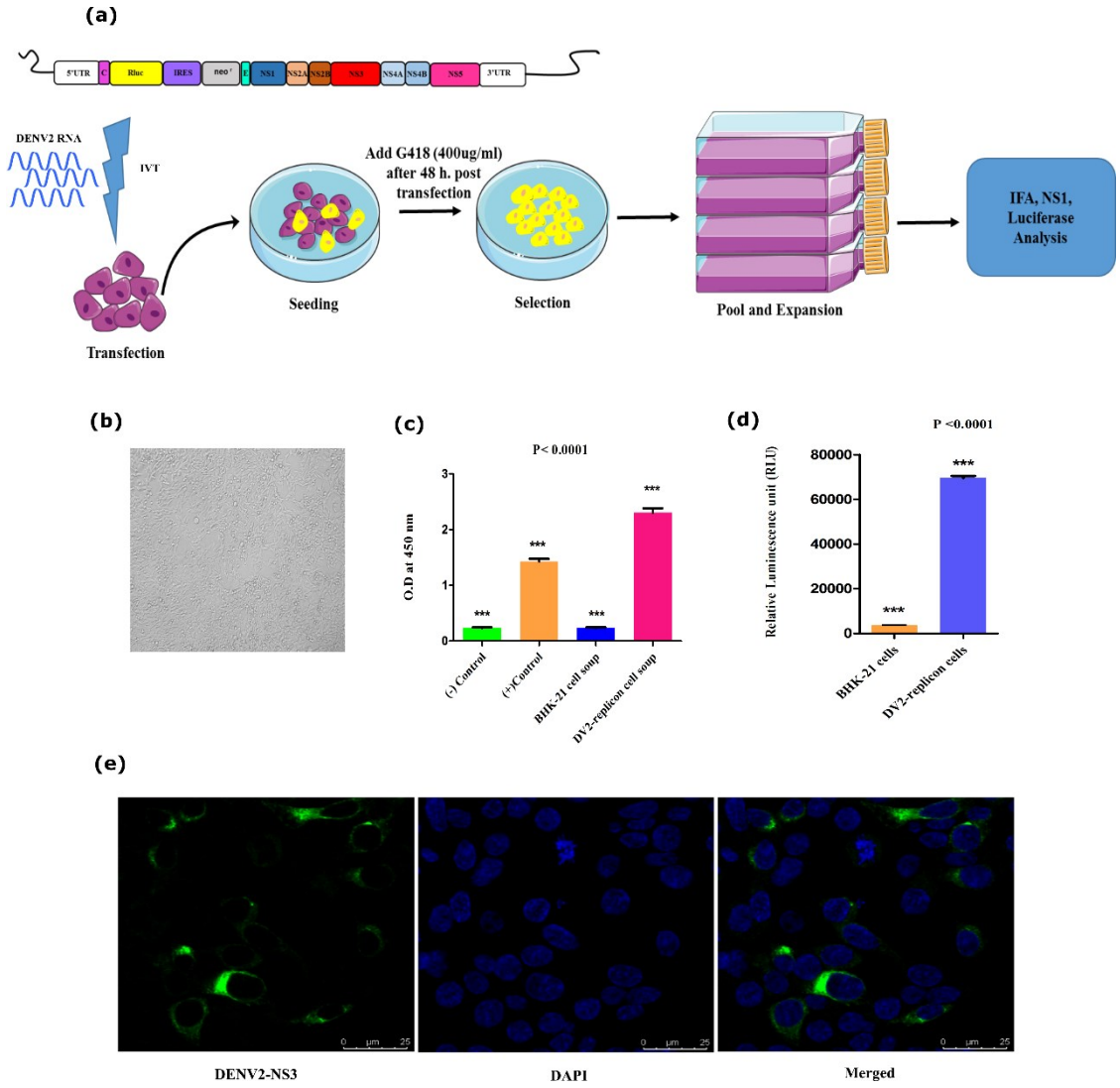


**Fig. S4.** Generation and Validation of DV2-replicon cells (a) Schematic representation of Invitro Transcription of DENV2 and generation of DV2-replicon cells. (b) Morphology of DV2-replicon cells. (c) ELISA test for NS1 protein secretion from DV2-replicon soup. (d) Luciferase assay for active replication of DENV2 RNA. (e) Immunostaining of DENV2 NS3 protein.

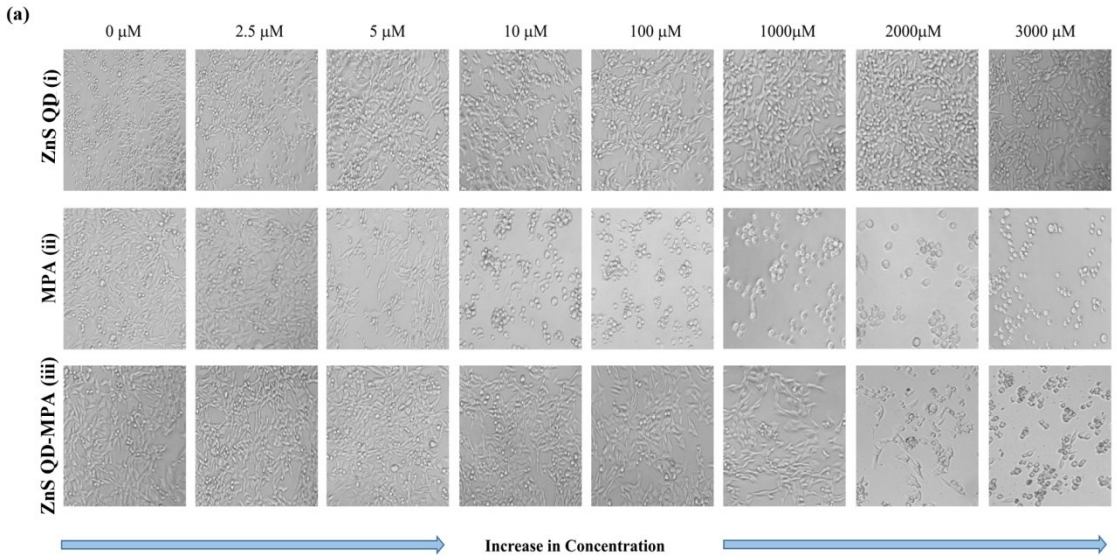


**Fig. S5. Brightfield images of DV2-replicon cells:** (a) The cytopathic effect of the cells after treatment of the compounds at various concentrations panel (i) only ZnS QD, (ii) MPA, (iii) ZnS QD-MPA. The MPA showed the highest CPE at ~5 µM whereas MPA ZnS QD showed CPE ~2000 µM. There was no CPE observed in the cells treated with ZnS QD only up to 3000 µM

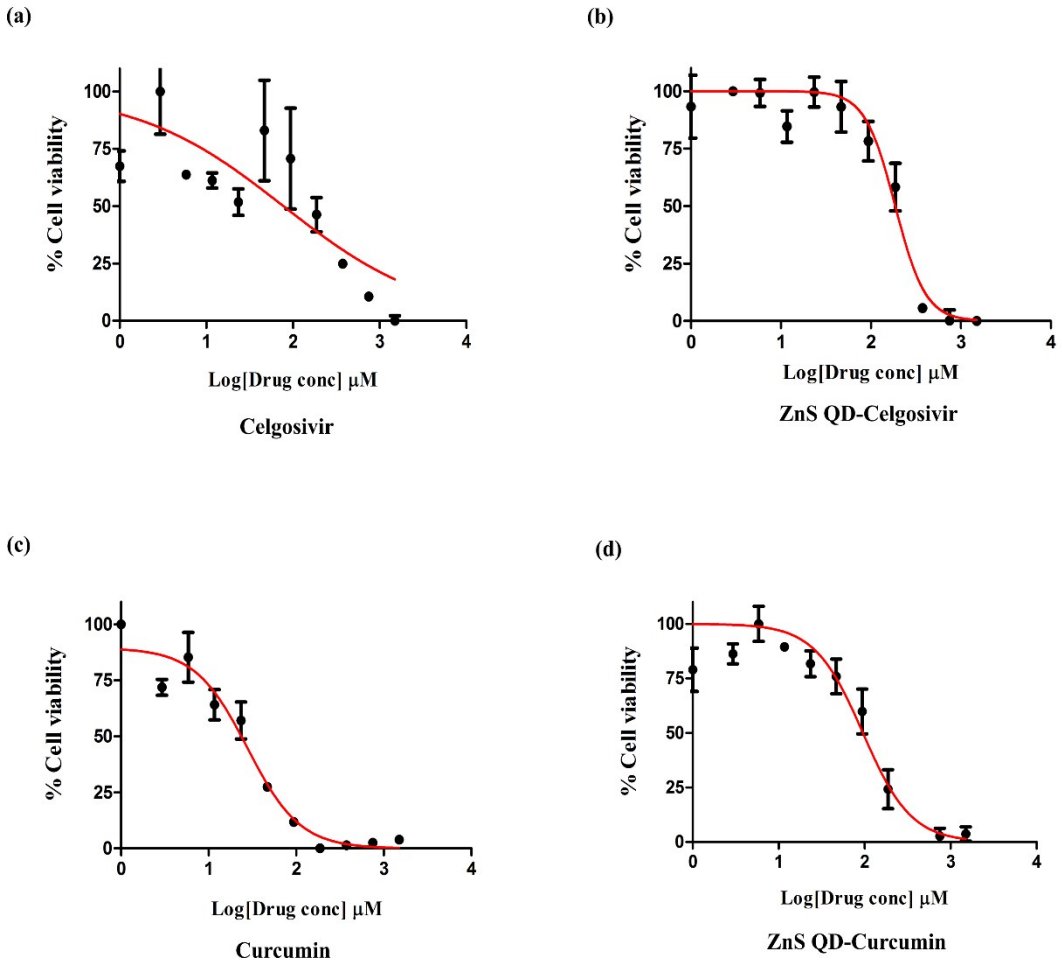


**Fig. S6.** Lethal Doses 50 ($LD_{50}$) of (a) Celgosivir ($LD_{50}$=77.69 ±1.579 µM). (b) ZnS QD-Celgosivir ($LD_{50}$=186.7 ± 1.099 µM). (c) Curcumin ($LD_{50}$=27.86 ± 1.197µM). (d) ZnS QD-Curcumin ($LD_{50}$=95.43 ± 1.1494 µM).

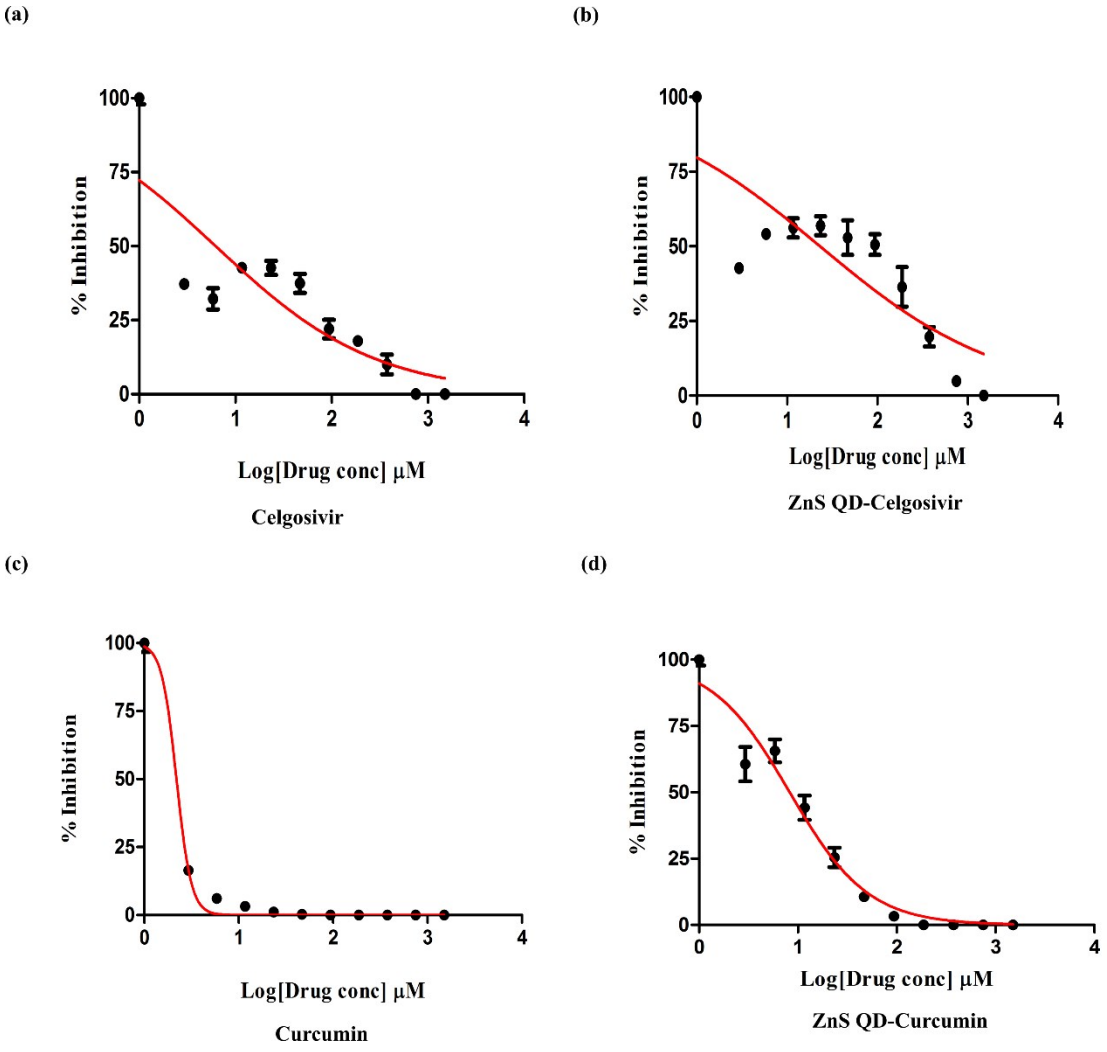


**Fig. S7.** Effective Concentration 50 ($EC_{50}$) of (a) Celgosivir ($EC_{50}$ = 6.231 ±1.412 µM). (b) ZnS QD-Celgosivir ($EC_{50}$ = 23.16 ± 1.440 µM). (c) Curcumin ($EC_{50}$ = 2.193 ± 1.068 µM). (d) ZnS QD-Curcumin ($EC_{50}$ = 8.268 ± 1.105 µM).

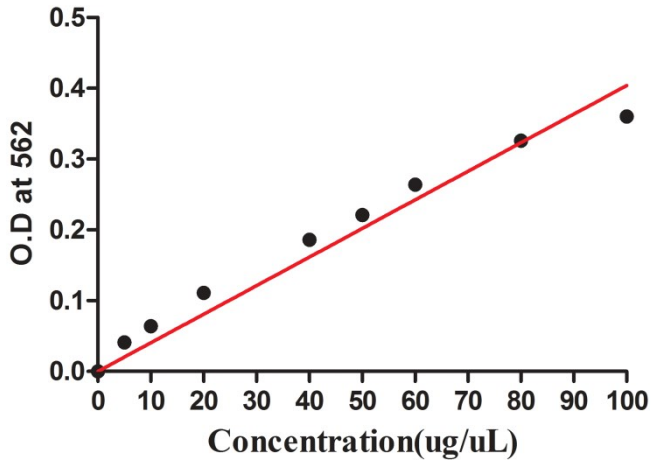


**Fig. S8.** BCA Standard curve for protein estimation.

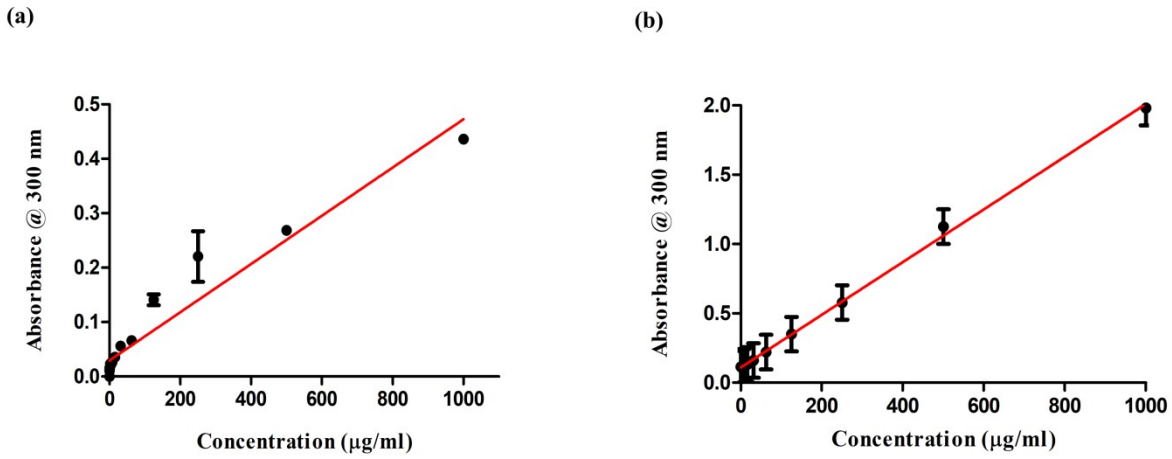


**Fig. S9**. Standard curve of MPA release in different pH buffers (a) Phosphate buffer, pH 5 (b) Phosphate buffer ,pH 7.2.