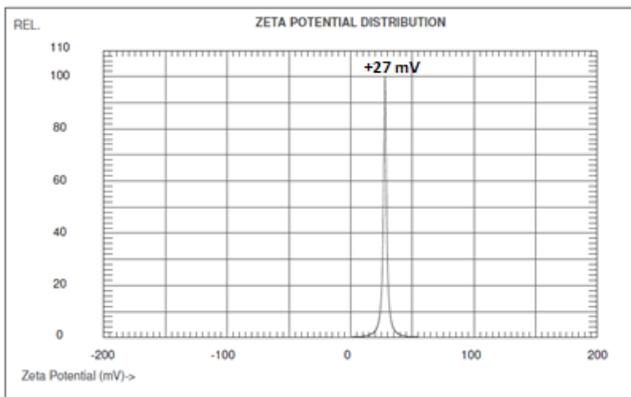
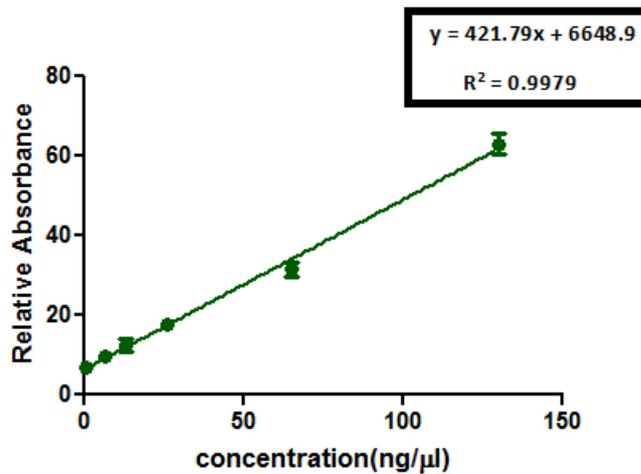


**Figure S1** - Distribution of particle size of MS-MP-NPs at weight ratio 45:1 (mPAE:mTOR-siRNA). For particle size measurements, 200  $\mu$ l of NP suspension was mixed with equal volume of water and size was measured using NICOMP particle sizer. The experiments were repeated at least thrice. The best representative images are shown. (n=3).



**Figure S2** – Distribution Zeta potential (surface charge) of MS-MP-NPs at weight ratio 45:1 (mPAE:mTOR-siRNA). . For zeta potential measurement 200  $\mu$ l of NP suspension was mixed with 1800  $\mu$ l of water and surface charge was measured. The experiments were repeated at least thrice. The best representative images are shown. (n=3).



**Figure S3 mTOR siRNA calibration curve.** Calibration curve for gradient concentration of mTOR siRNA within the range of 0.65 – 130 ng/μl calculated using Accublu high sensitivity quantitation kit according to the manufacturer’s protocol. A typical linear relationship ( $R^2 = 0.9979$ ) was found between peak height and concentration of mTOR siRNA. The results are presented as mean  $\pm$  SD ( $n = 3$ ).