By using nanobiotechnology, we are developing new strategies to overcome practical issues in clinical translations of some medical fields. This presentation consists of two parts. The first part is to use Brownian motion of superparamagnetic nanoparticles controlled by magnetic fields to improve the efficacy of drug/RNA delivery as such motion enhances the escape of drug-loaded nanoparticles from endosomes before degradation in lysosomes. The second theme is to develop the strategy to amplify the generation of therapeutic extracellular vesicle nanoparticles generated in cells by the stimulus of synthetic peptides self-assembled in donor cells, mimicking prion and amyloid.