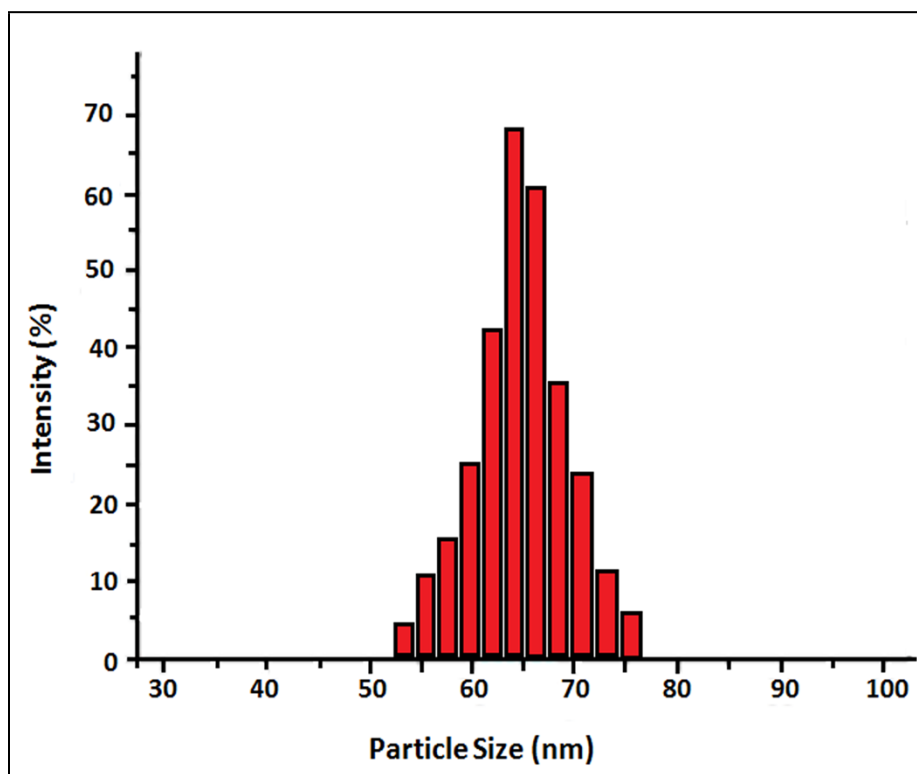


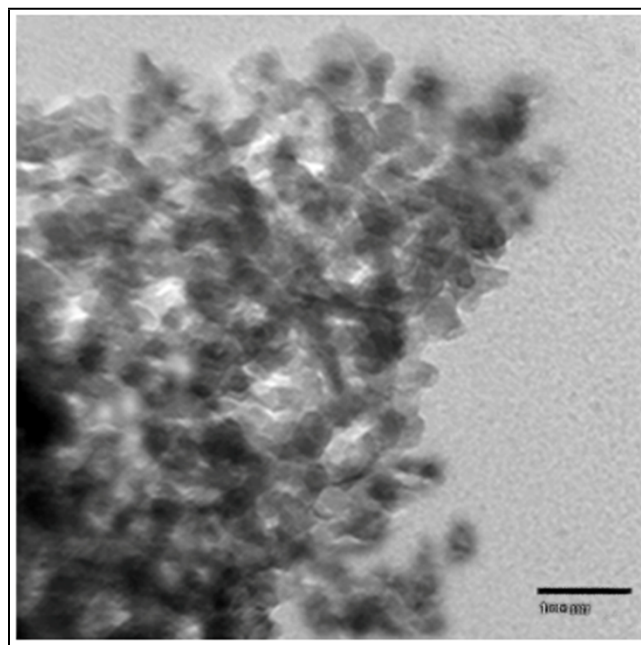
**Supplementary Figures:**

**Fig. S1**



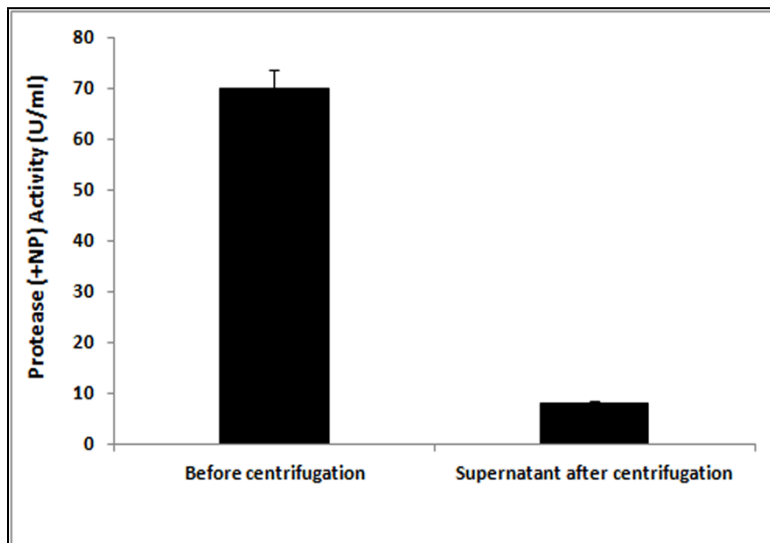
**Fig. S1:** Particle size of Hydroxyapatite (HAp) nanoparticles by Dynamic Light Scattering technique

**Fig. S2**



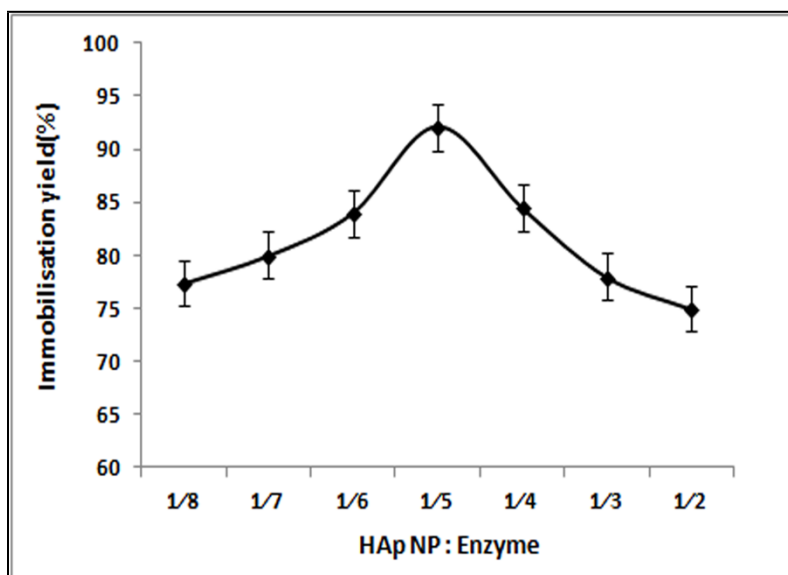
**Fig. S2:** Transmission Electron Microscopic (TEM) picture of Hydroxyapatite nanoparticles.

**Fig. S3**



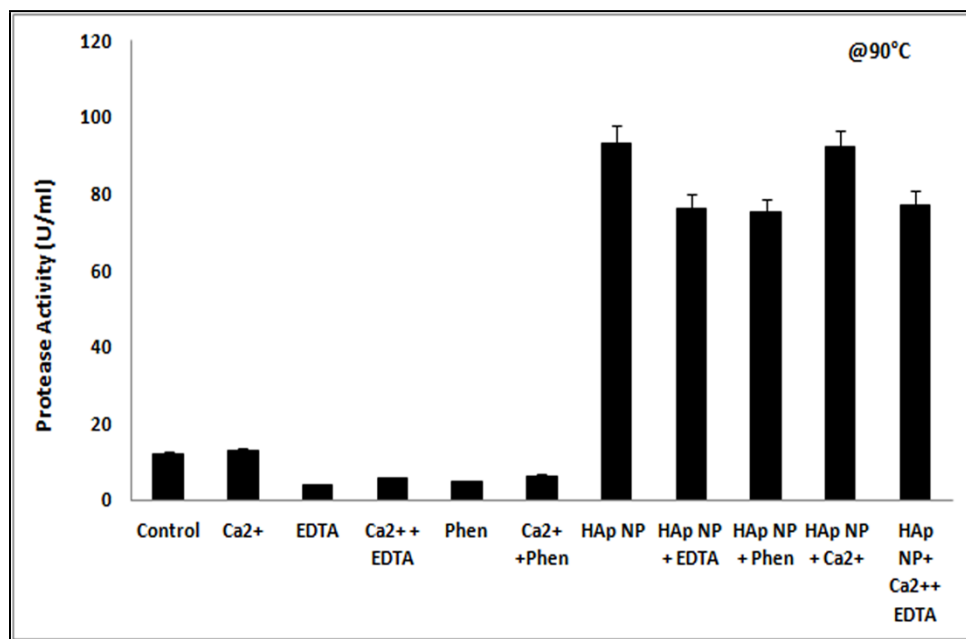
**Fig. S3:** Determination of protease enzyme adsorption onto NP by centrifugation.

**Fig. S4**



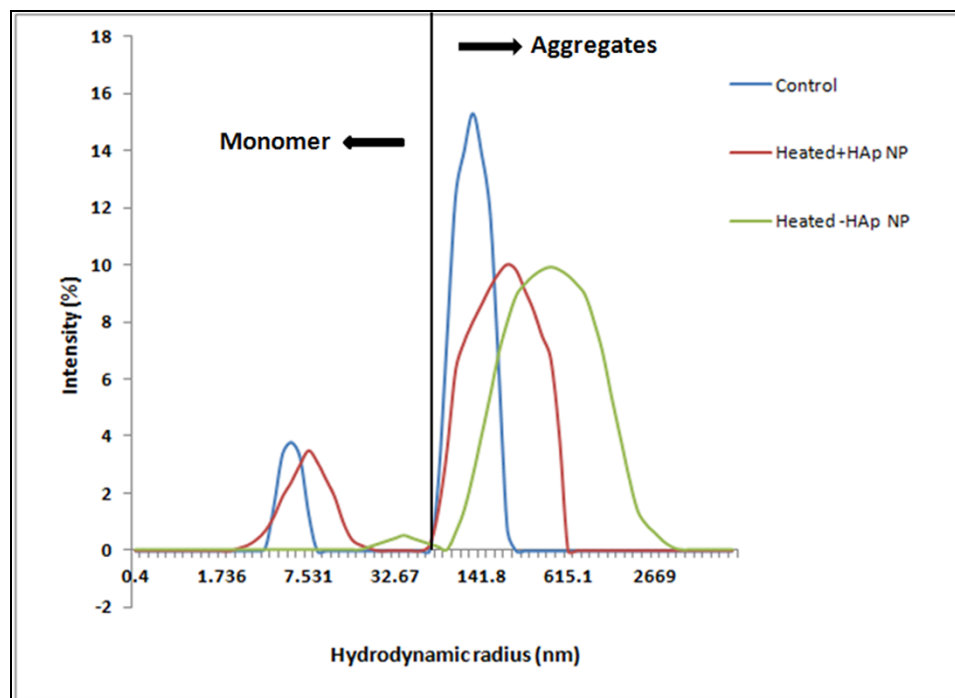
**Fig. S4:** Optimisation of enzyme immobilisation yield (%) of protease enzyme on HAp NP

**Fig. S5**



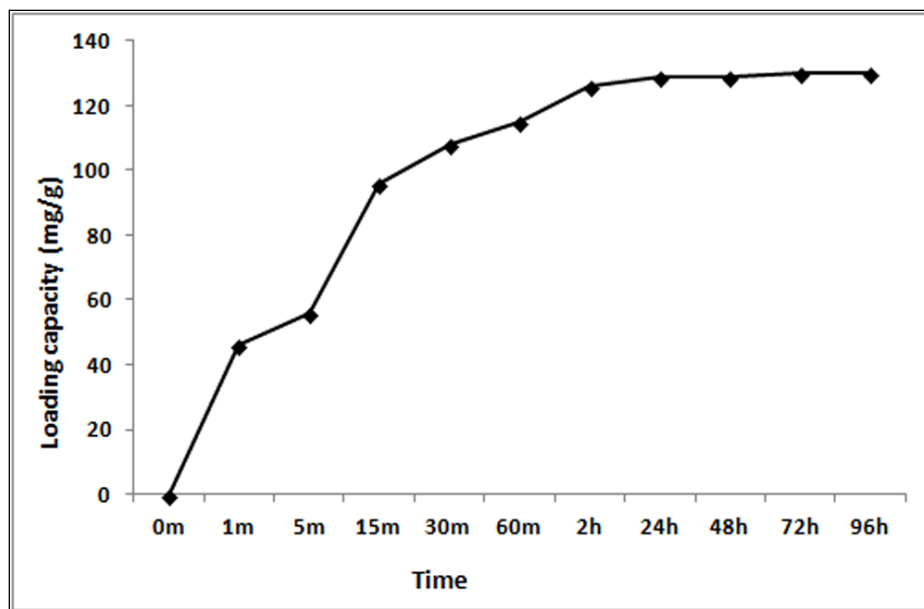
**Fig. S5:** Determination of protease (+NP) thermal stability in presence of inhibitor as well as Ca<sup>2+</sup> ion.

**Fig. S6**



**Fig. S6:** Study of hydrodynamic radius shift of protease enzyme on HAp NP treatment at high temperature.

**Fig. S7**



**Fig S7:** Optimisation of loading capacity of protease enzyme on HAp NP with different time scale.