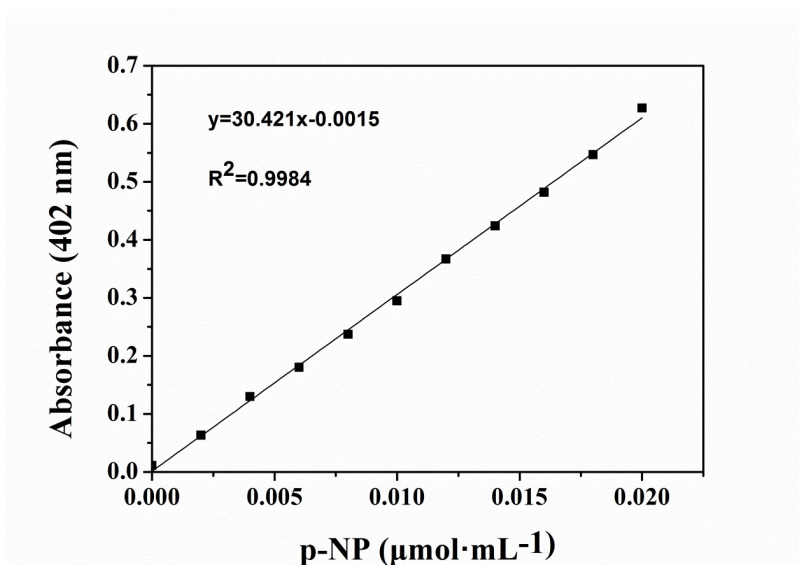
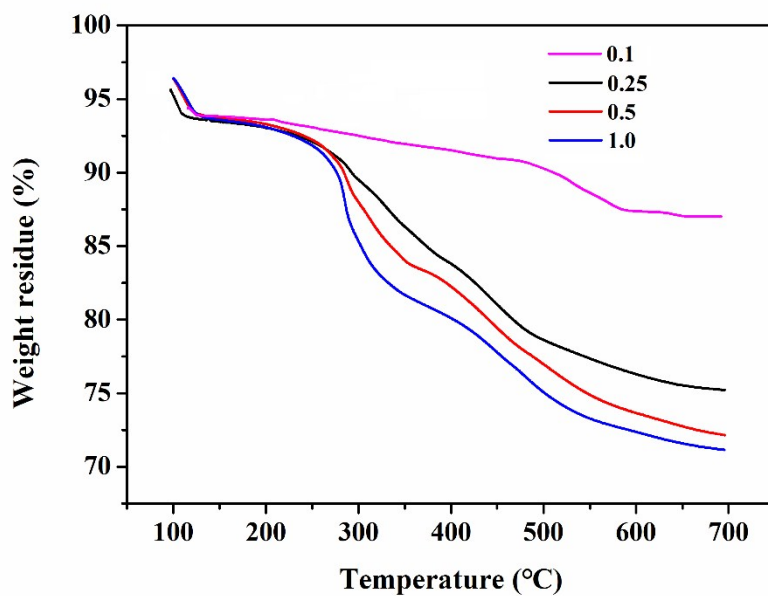


### Supporting Information

**Fig. S1.** standard curve of p-NP

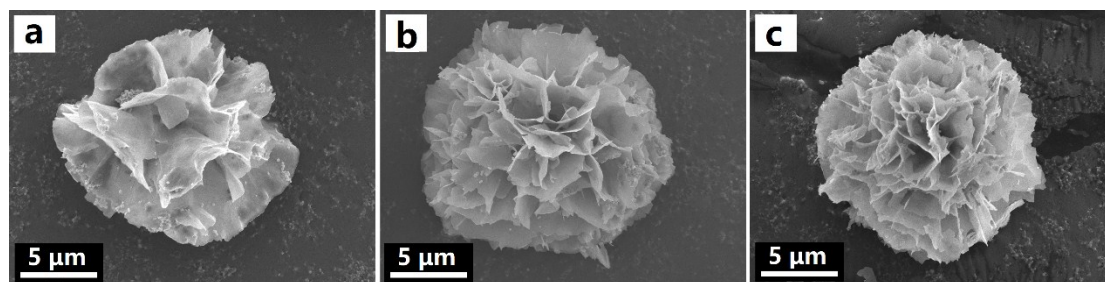


**Fig. S2.** TGA of lipase@MNFs

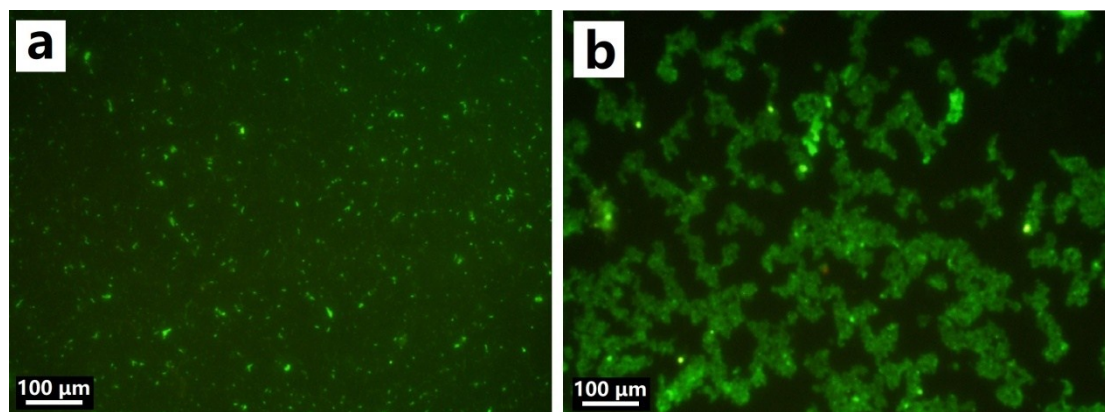


**Table S1.** The weight percent, enzyme recovery and enzymatic activity of lipase of lipase@MNFs

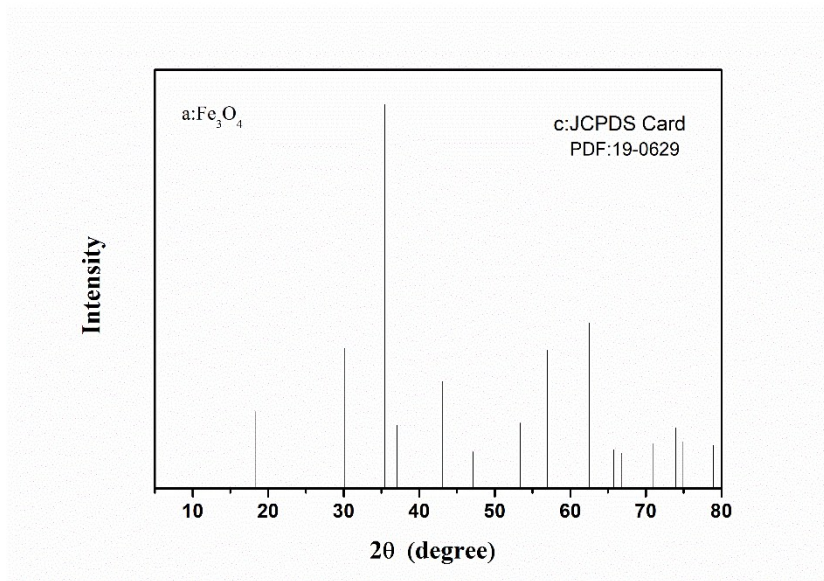
Enzyme concentration (mg/ml)	The weight percent of enzyme (%)	Enzyme activity (U/g)	Enzyme recovery (%)
0.1	6.49	73.48±4.53	46.69
0.25	17.81	82.34±2.218	58.97
0.5	21.15	92.63±2.69	39.80
1	21.93	89.16±4.21	19.96



**Fig. S3.** SEM image of the lipase-Fe<sub>3</sub>O<sub>4</sub>-NFs synthesized with various time: (a) 1d, (b) 2 d, (c) 3d.



**Fig. S4** Fluorescence micrograph of lipase labeled by FITC anchored on synthesized amino functional magnetic nanoparticles (FN) and magnetic hybrid nanoflower



**Fig. S5.** XRD patterns of of Fe<sub>3</sub>O<sub>4</sub> JCPD Card No. 36-0203.