

**Figure S1. Structural and morphological features of HMSNs.** (**A**) FE-SEM and (B) HR-TEM micrograph of HMSNs with rich micro-channels. (**C**) Size measurement of HMSNs by DLS and (**D**) FT-IR spectrum of HMSN and HMSN-PEI-PLA nanomaterials.



**Figure S2.** Anti-cancer experiments were displayed the dead and live cells. HepG2 cells incubated with Gal-NB-HMSN-PEI-PLA and stained with AO (Green fluorescence) and EtBr (Red fluorescence).