



**Figure-supplement** The SEM and mappings of elements distribution of the cross section of PLGA-MSN/nHA microsphere. The elements distribution of the carbon (C), nitrogen (N), silicium (Si), phosphorus (P), calcium (Ca) on the surface of cross section were mapped respectively.

**Notes:** The maps of C and N referred to the distribute of PLGA; The maps of Ca and P referred to the distribute of nHA; The map of Si referred to the distribute of MSN.

**Abbreviations:** SEM, scanning electron microscope; PLGA, poly-(LD-lactide-co-glycolide) acid; MSN, mesoporous silica nanoparticle; nHA, nano-hydroxyapatite.