

## Supporting Information

### The Synergetic Effect of Gold Nanoclusters-Calcium Phosphate Composite: Enhanced Photoluminescence Intensity and Superior Bioactivity

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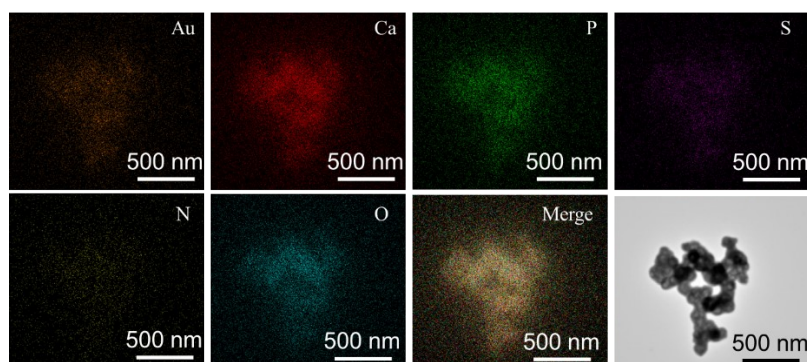


Figure S1. Elemental distribution of AuNCs@ACP acquired using EDX. The TEM image of the particles is also included for comparison.

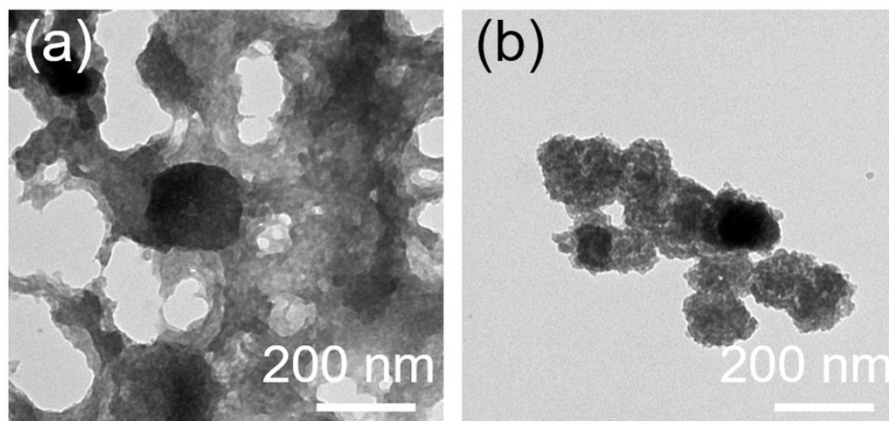


Figure S2. TEM micrographs of the AuNCs@ACP composite made with various volumes of 1.0 M CaCl<sub>2</sub>. (a) 100  $\mu$ L, (b) 400  $\mu$ L.

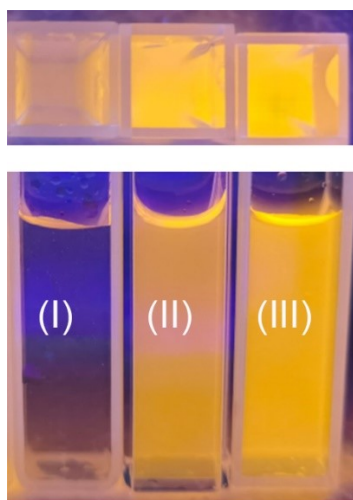


Figure S3. Optical photographs of AuNCs@ACP prepared with various volumes of 1.0 M CaCl<sub>2</sub>. (I) 100  $\mu$ L, (II) 200  $\mu$ L, (III) 400 $\mu$ L.

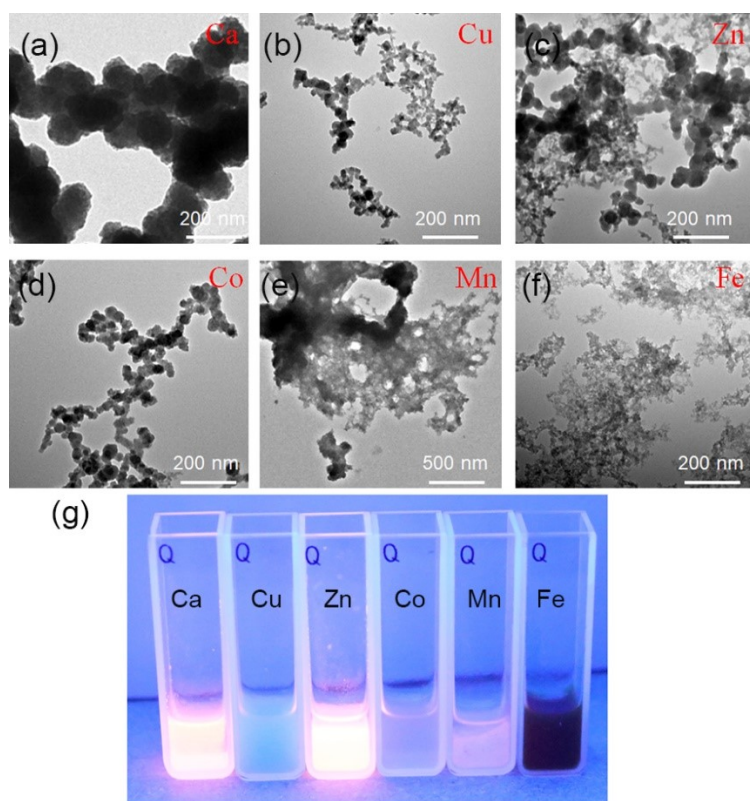


Figure S4. Biomimetic mineralization of AuNCs in DMEM in the presence of various divalent ions. (a)-(f) TEM images of the composites, (g) photograph of these composites taken under 365nm UV light.

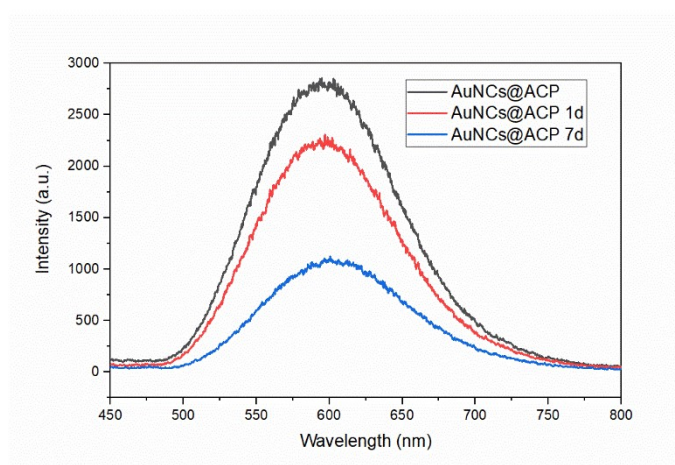


Figure S5. PL spectra of freshly prepared AuNCs@ACP and the one stored after 1 day and 7 days.

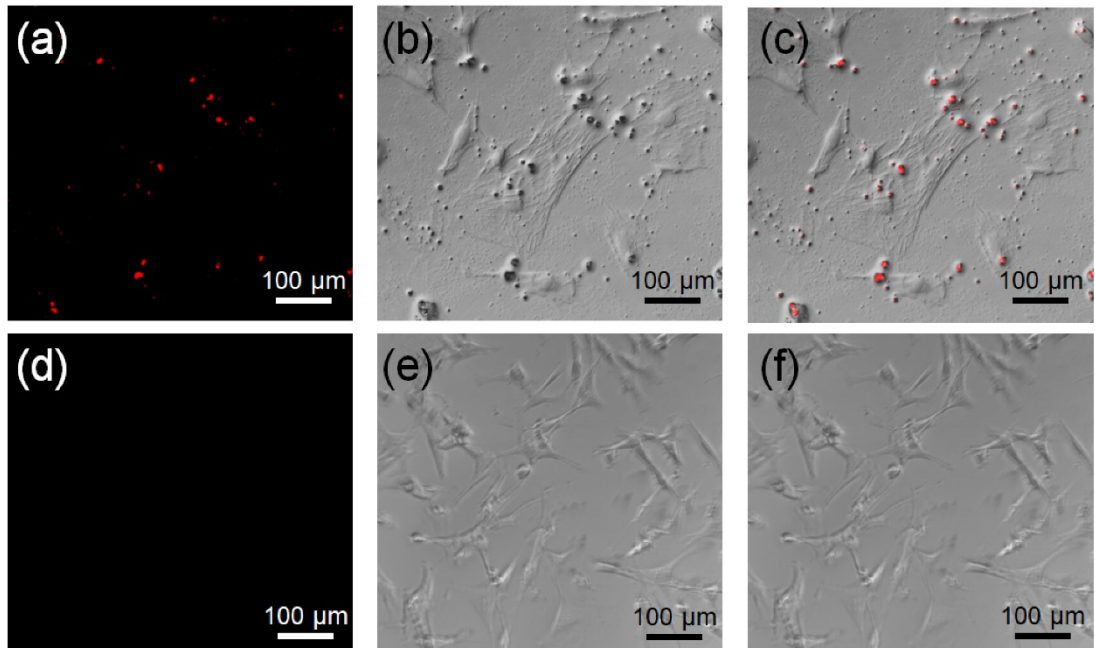


Figure S6. CLSM images of BMSCs co-cultured with (a – c) AuNCs@ACP for 1 h and (d – f) AuNCs alone for 5 h. (a, d) fluorescence, (b, e) optical, and (c, f) merged image.