Supporting Information

Core-shell structure QRu-PLGA-RES-DS nanocomposite with photothermal response induced M2 macrophage polarization for therapy rheumatoid arthritis

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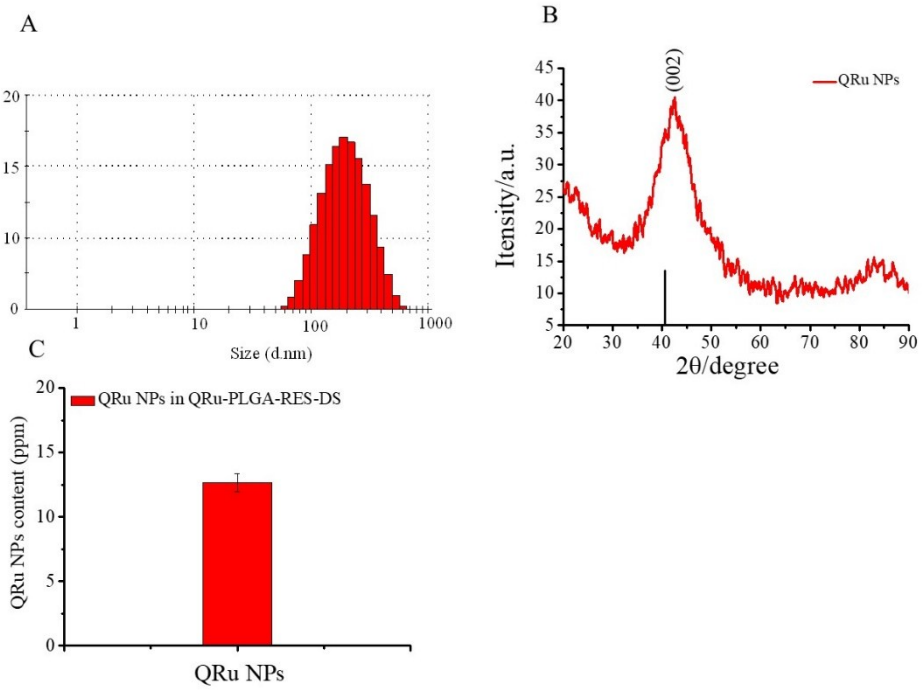

Fig S1 (A) QRuNPs diameter distribution detected by dynamic light scattering (DLS). (B) XRD patterns of the as-prepared QRu NPs. (B) The distribution of QRu NPs amounts in QRu-PLG-RES-DS were measured by ICP-MS. The data are shown as the mean ± s.d. (n = 3).

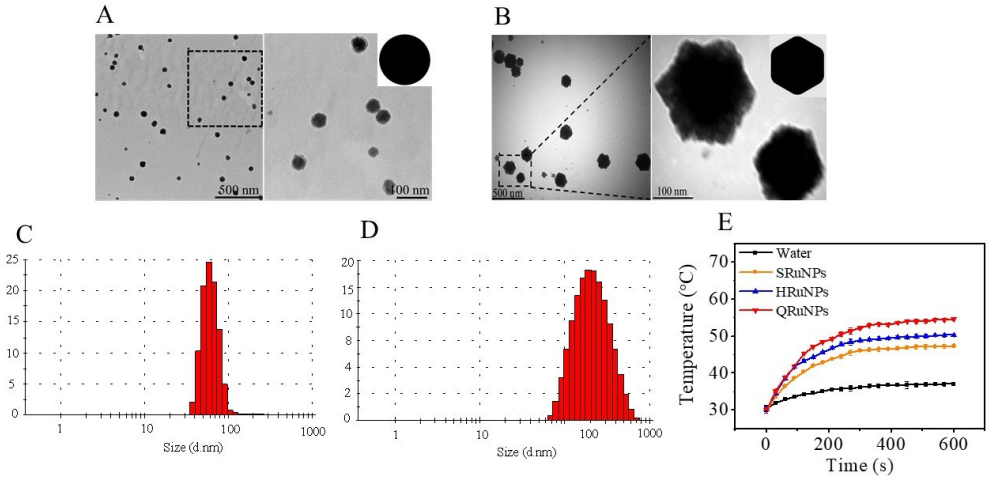

Fig S2 (A).TEM morphology of $RuCl_3$ reacted with $NaBH_4$ for 30 min, (B).TEM morphology of $RuCl_3$ reacted with $NaBH_4$ for 90 min. (C). SRuNPs diameter distribution detected by dynamic light scattering (DLS). (D). HRuNPs

diameter distribution detected by dynamic light scattering (DLS). (E). the photothermal effect of Water, SRuNPs, QRuNPs and HRuNPs irradiation with 808 nm laser (0.4W/cm^2) respectively.

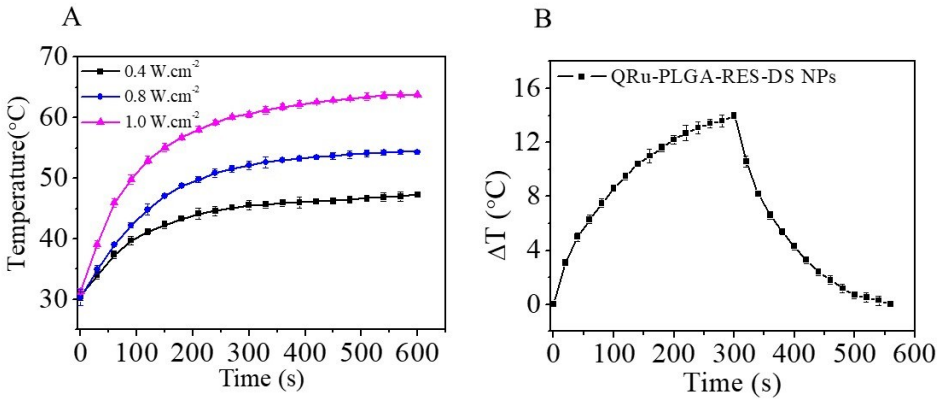

Fig S3 (A). The photothermal effect of QRu-PLGA-RES-DS NPs irradiation with different power of 808 nm laser (0.4, 0.8, 1.0 W/cm^2). (B). The monitored temperature change curves of QRu-PLGA-RES-DS NPs nanoparticles as irradiated by the NIR laser for 600 s, followed by natural cooling with the laser light turned off, and determination of the time constant for heat transfer from the system using linear regression of the cooling profiles.

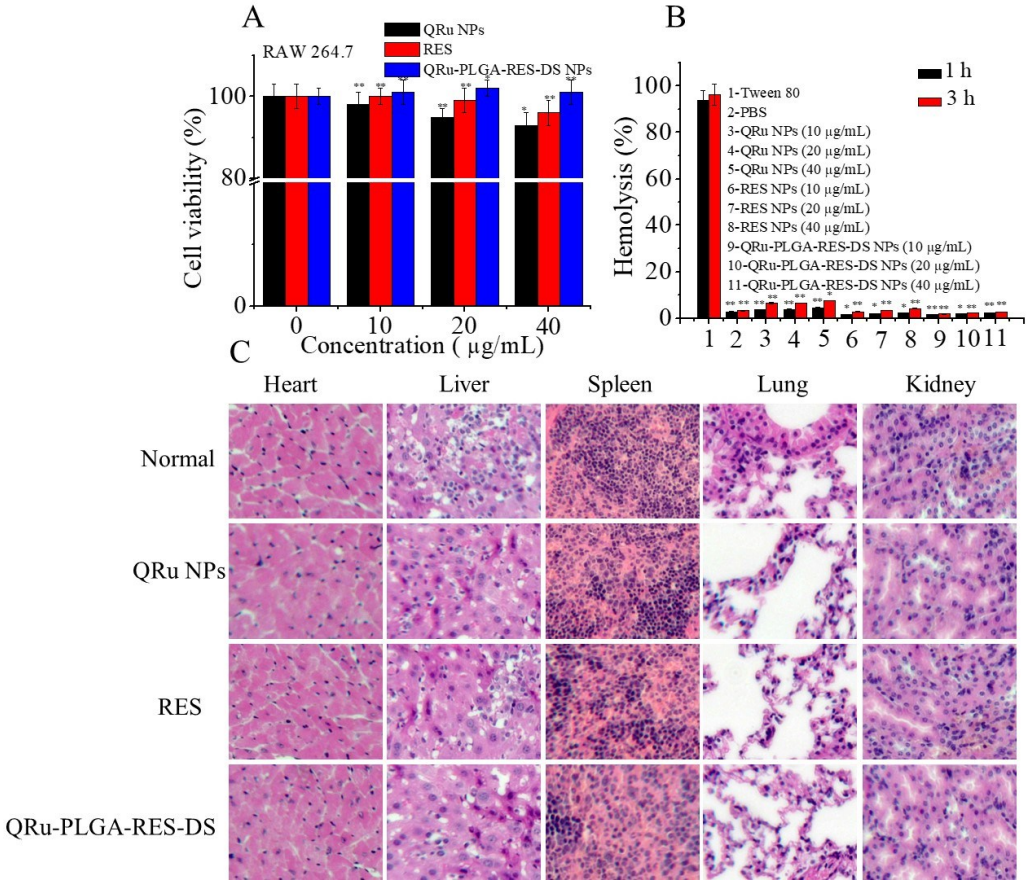

Fig S4 (A)Relative viabilities of RAW 264.7 cells after being exposed to QRu, RES and QRu-PLGA-RES-DS NPs with different concentrations for 24 h. (B) Hemolytic activity of to QRu, RES and QRu-PLGA-RES-DS NPs with erythrocyte stock in Tris buffer solution.(n=3, *P≤ 0.05, **P≤ 0.01). (C) Histological sections of major organs after treatment with different methods. Images were acquired at 400* magnification.

Table 1
The Loading efficiency of RES with different mass ratios of PLGA and RES

Mass Ratio (m/m)	1:1	1:2	1:3	1:4	1:5
Loading rate (%)	5.2%	6.3%	8.0%	9.5%	10.1