

Supporting information:

The Sonochemically-Fabricated Ga@C-dots@Ga Nanoparticle-Aided Neural Growth

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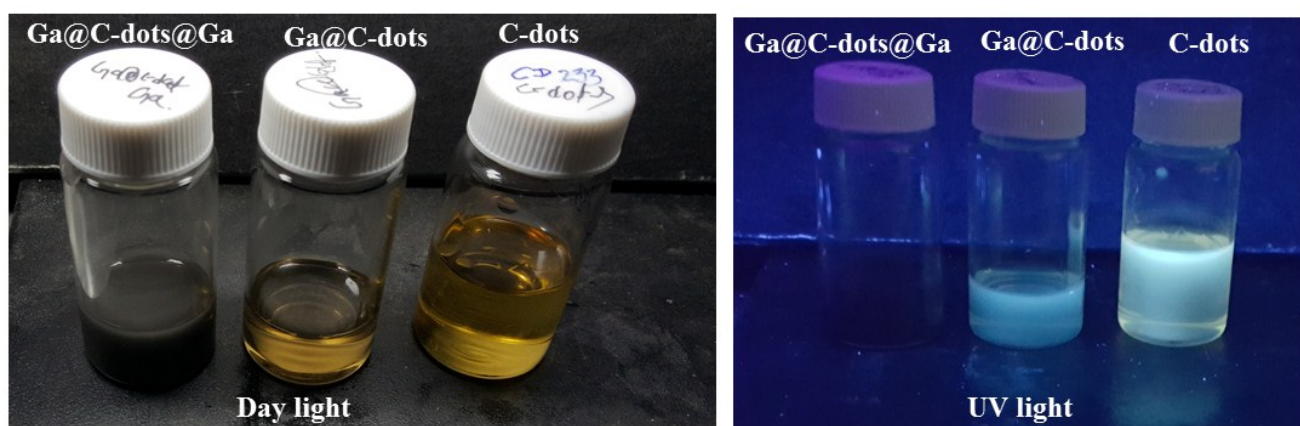


Figure S1: Photographs of a suspension of the Ga@C-dots@Ga, Ga@C-dots, C-dots illuminated by (A) UV light (365 nm) and (B) daylight

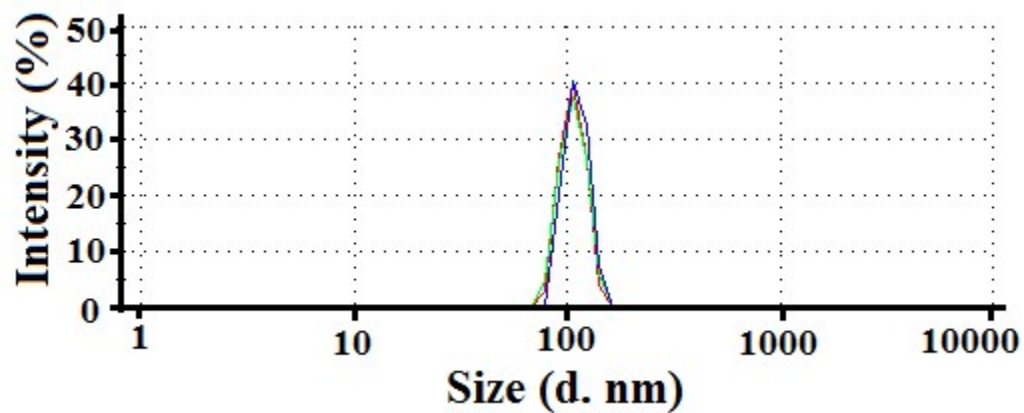


Fig. S2: DLS pattern of sonochemical deposition of Ga@C-dots@Ga NPs (Three curve represent the repeatability 3 times)

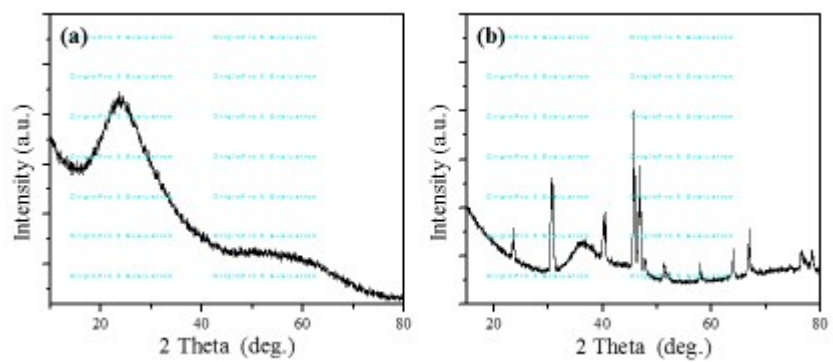


Fig. S3: XRD pattern of (a) C-dots and (b) Ga NPs.

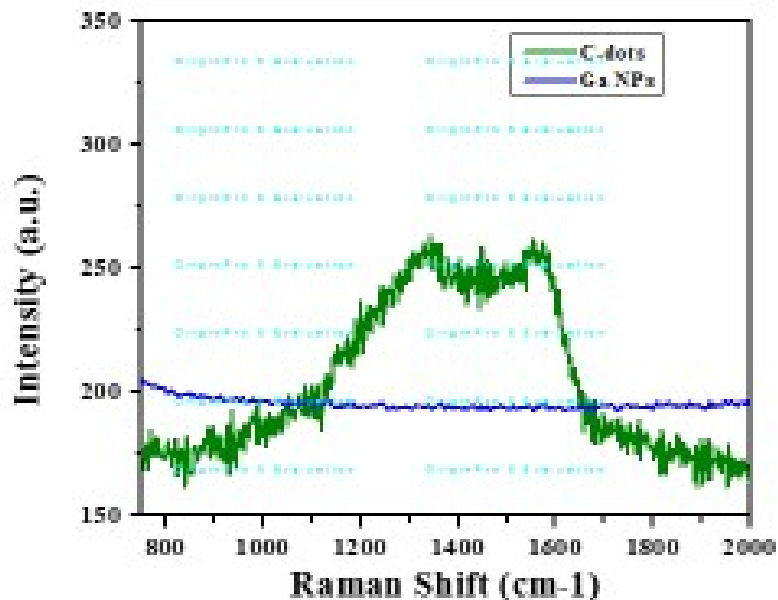


Fig. S4: The Raman spectra of Ga NPs (blue) and C-dots (Green).

The product of this procedure was Ga@C-dots@Ga nanoparticles deposited on the glass substrate. This product was washed with water and ethanol to remove bigger particles or unattached Ga@C-dots@Ga NPs, and dried in a vacuum chamber. **Fig. S5a,b** presents a HRSEM image of the Ga@C-dots@Ga deposition on the glass substrate for 3 minutes' sonication and only few particles were observed. **Fig. S5c-d** shows HRSEM images of substrates coated with Ga@C-dots@Ga NPs, demonstrating the effect of reaction time and concentration of Ga@C-dots@Ga NPs on the density of the coated particles. We have demonstrated the deposition of Ga@C-dots on glass substrate is a function of sonication time (3 mins, 10 mins, 20 minutes). The optimum deposition was observed in 20 minutes' sonication at 30 % amplitude. **Fig. S5g and 5h** presents a HRSEM images of the Ga@C-dots and C-dots deposition on the glass-substrate, respectively. The typical size of these features is between ~5-10 nm, which is similar to the size of the individual C-dots that were observed before (TEM).

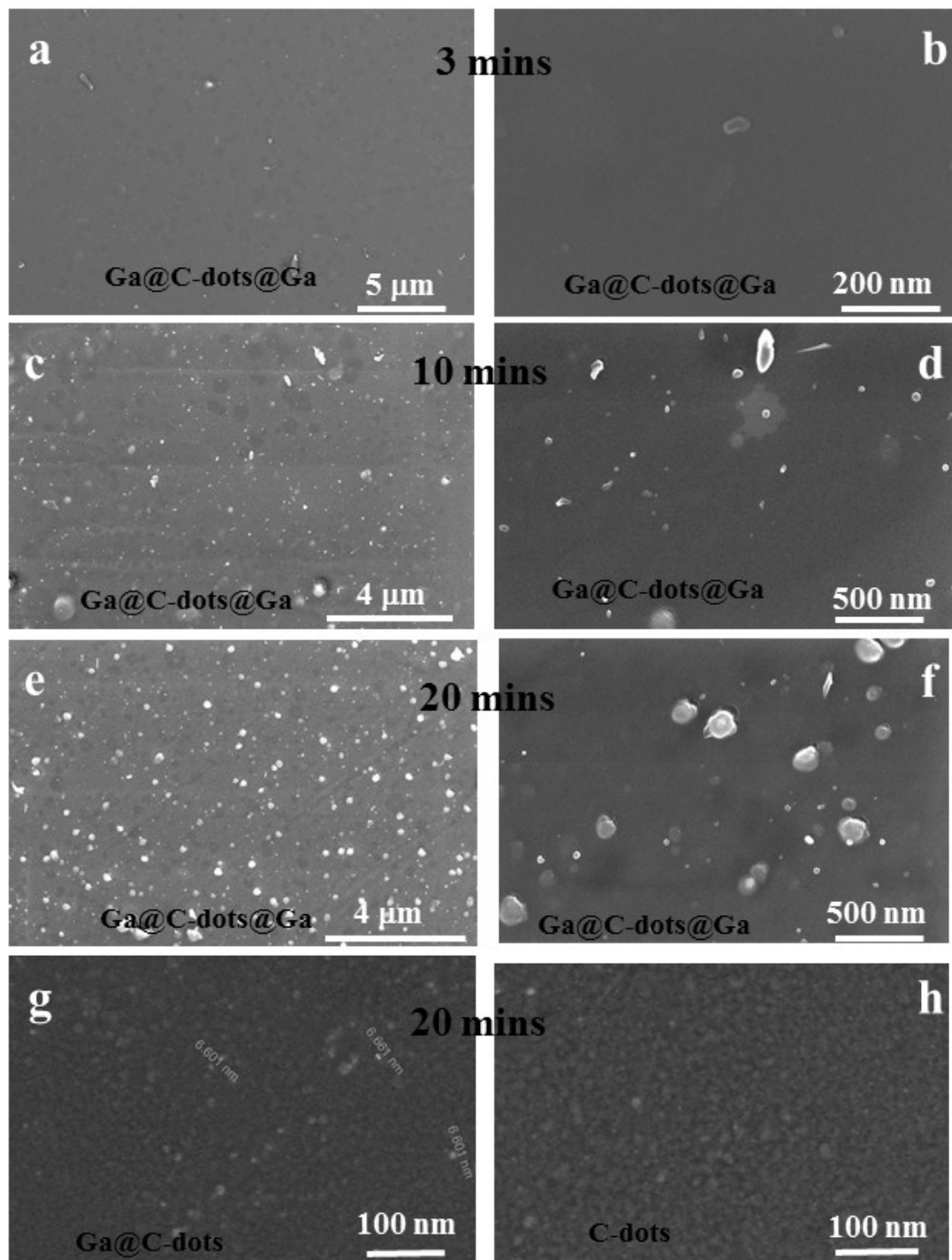


Figure S5. Sonochemical deposition of Ga@C-dots@Ga NPs on glass substrate (a, b) minutes, (c, d) 10 minutes, (e, f) 20 minutes, (g) Ga@C-dots (h) C-dots for 20 mins.

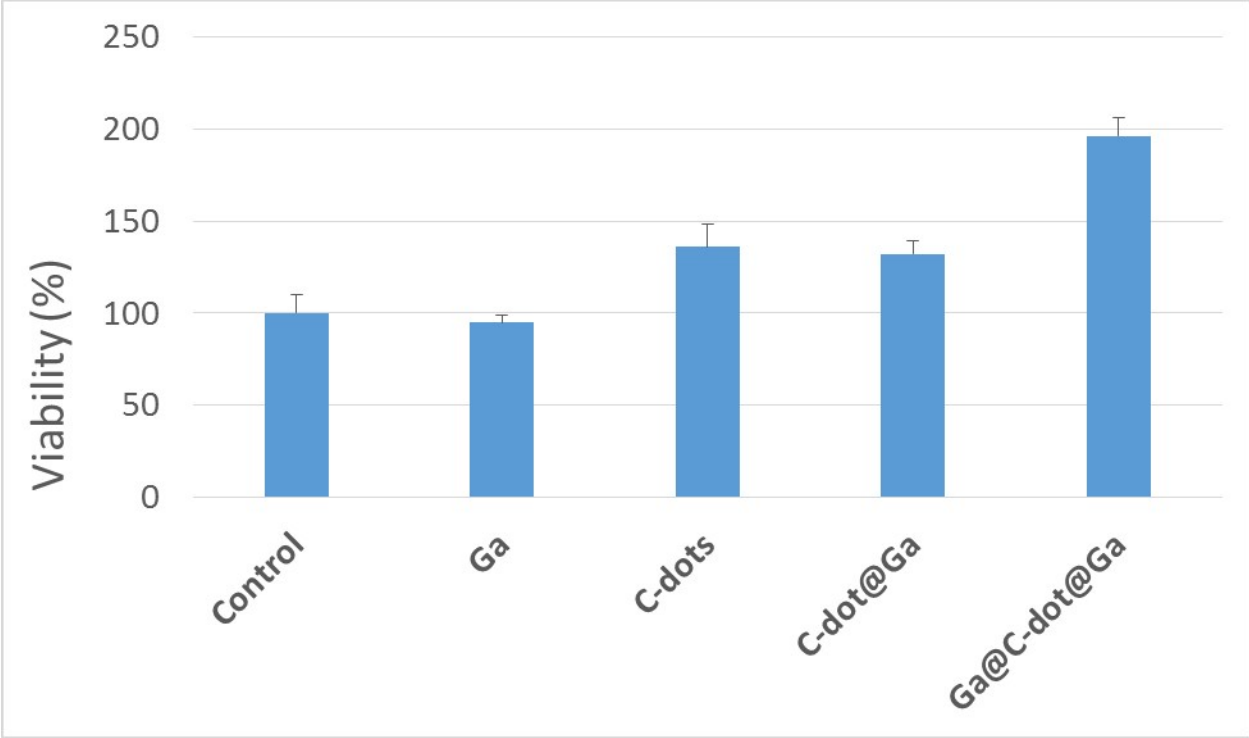


Fig. S6: Viability test for glass alone (control), Ga NPs, C-dots, Ga@C-dots, Ga@C-dots@Ga modified glass substrate.

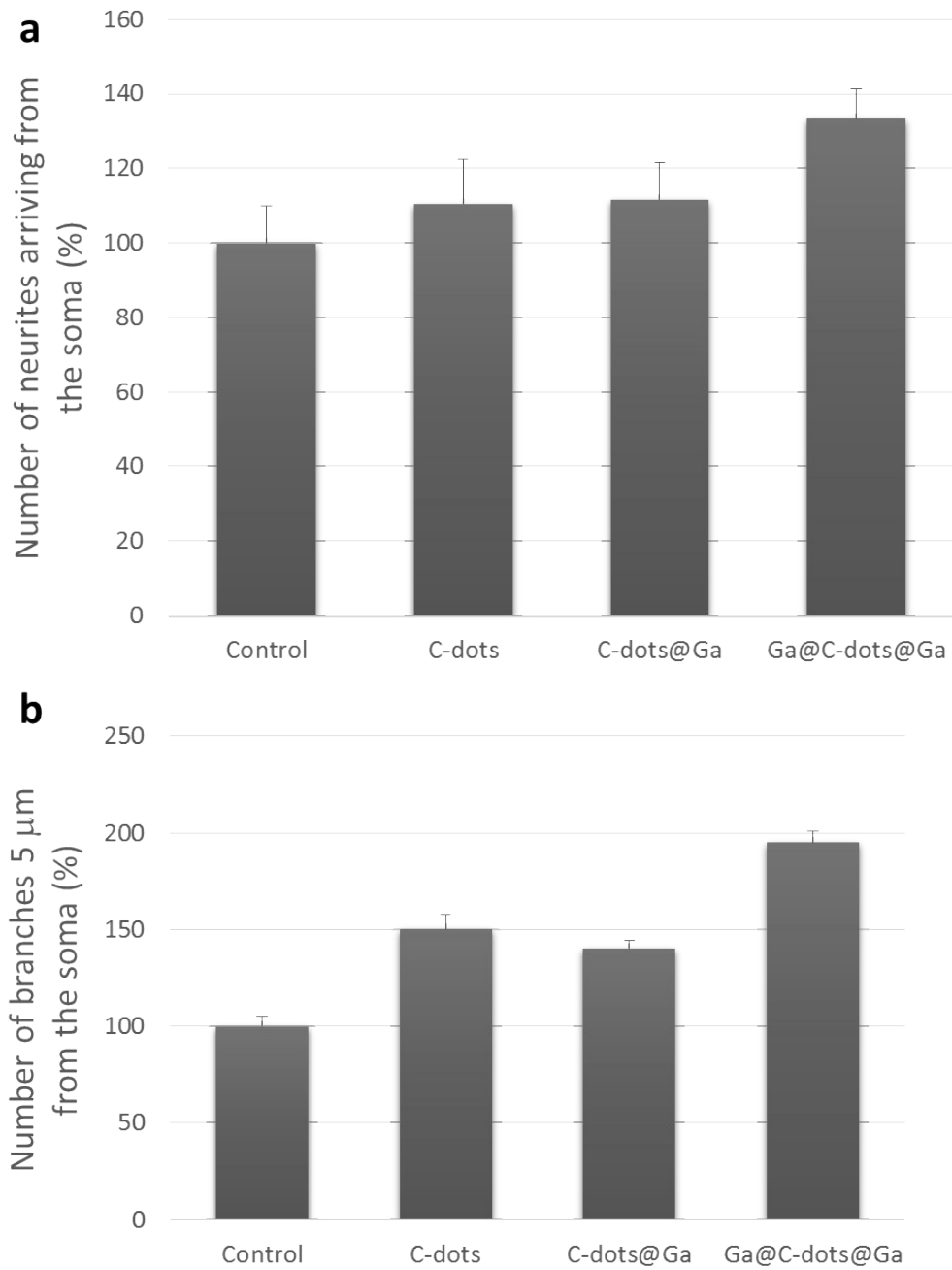


Fig. S7: (a) Number of neurites arriving from the soma, (b) Number of branches 5 μm from the soma of cells that grow on the different substrates (glass alone, C-dots, Ga@C-dots, Ga@C-dots@Ga modified glass substrate).