

Supporting Information

Construction of bioactive and reinforced bioresorbable
nanocomposites by reduced nano-graphene oxide carbon dots

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Experimental section

Tensile tests were conducted using an INSTRON 5944 module equipped with pneumatic grips. A load cell with a maximum load of 500 N at a crosshead speed of 20 mm/min was used for the measurements. Films were cut into strips with a thickness of 0.24 ± 0.02 mm and width of 5 mm. A gauge length of 10 mm was used. The samples were preconditioned prior to being tested in accordance with the standard method described in ASTM D618–96 (40h at $50\% \pm 5\%$ relative humidity and $23^{\circ}\text{C} \pm 1^{\circ}\text{C}$). Six specimens from each material were tested.

Results and discussion

Tensile test results of solutions casted PCL-2wt% nGO and PCL-2wt% r-nGO-CA nanocomposites demonstrates a significant difference in the mechanical properties induced by the two carbon nanodots. PCL-2wt% nGO display a brittle material in contrast to PCL-2wt% r-nGO-CA.

Table 1. Tensile test results from PCL-2wt% nGO and PCL-2wt% r-nGO-CA based on an average of 6 measurements for each sample.

	Young's Modulus (MPa)	Extension at Break (%)	Tensile stress at Break (MPa)
PCL-2wt% nGO	201 ± 18	11 ± 0.7	11 ± 0.8
PCL-2wt% r-nGO-CA	196 ± 21	1790 ± 293	24 ± 5