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LETTER

Response to Article "Oriented Graphene Oxide Scaffold Promotes Nerve Regeneration in vitro and in vivo" [Letter]

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Dear editor

We are appreciative of the authors for providing their research about "Oriented Graphene Oxide Scaffold Promotes Nerve Regeneration in vitro and in vivo" in *International Journal of Nanomedicine* 2024;19:2573–2589.[1] We would like to provide our thoughts regarding the isolation methods of dorsal root ganglia (DRG) and characterization methods of graphene oxide/polycaprolactone (GO/PCL) nanofibers as scaffolds in this study.

This study aims to create a new scaffold using graphene oxide (GO) and examine its potential therapeutic implications for nerve regeneration. In this paper, the author used trypsin to isolate DRG. Besides describing the protocol in excellent detail, the author should additionally include the references used. In earlier studies, collagenase or dispase was frequently utilized for DRG isolation in further to trypsin.[2]

Nanofibers are formed by overlapping layers of fibers during the electrospinning process. The number of nanofibers influences both the mass transfer from cells and the cell-substrate interaction. The thicker the layers, the lower the elastic properties of the matrix due to the density and density of the resulting nanofiber structure, which harms the infiltration of cultured cells.[3]

The authors did not specify the thickness of the nanofibers used in the mechanical tests and/or the length of time for electrospinning. The authors also did not explain the thickness used in mechanical tests or the thickness used for primary Schwann cells (SCs)-cultured scaffolds in vitro and in vivo. The tensile strength and Young's modulus of the PCL nanofiber produced by electrospinning are directly correlated with its density; the higher the density, the lower the nanofiber's Young's modulus.[4] The conductive nanofiber-based scaffolds are appropriate materials for neural stem cell adhesion and proliferation, but the authors did not report the conductivity value of each GO/PCL composite produced, nor did they explain the relationship between conductivity and cellular-scaffold interaction.

The author also mentioned that the combination architecture synergistically promotes nerve cell regeneration. However, the surface topography of the resulting scaffold and its influence on cell attachment are not fully described in this study. We recommend determining the porosity of the outcome nanofiber scaffold, as it can improve hydrophilicity and cell adhesion to the scaffold surface.[5] Therefore, if using nanofiber as a scaffold, it would be required to provide a porosity value and details on the surface morphology of the resulting nanofiber. So that, it could be used as a reference for many related investigations in the future.

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Disclosure

The authors report no conflicts of interest in this communication.

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