



## A biomimetic tissue engineering scaffold for repairing the injured spinal cord: proof of concept

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Repairing the injured spinal cord is probably one of the greatest challenge of modern medicine since available palliative and rehabilitation treatments have proved to be inefficient to completely restore the lost automatic, motor and/or sensory function of patients worldwide [1]. Thus, in recent years, tissue engineering (TE) scaffolds are emerging as central players for complex regenerating strategies due to their ability not only to delivery powerful drugs capable of inhibiting the appearance of scar tissue, but also to enhance the cell response towards a substantial anatomical and physiological recovery of the injured area [2]. In this work, we purpose a biomimetic 3D TE scaffold able to provide two complementary porous and fibrous topographies with the purpose of recreating in vitro the morphology of the grey and white matters, respectively. Preliminary results confirmed that the scaffold presents an architecture that match its natural counterpart and, additionally, that the inclusion of graphene as key biomaterial optimizes the chemical and mechanical properties of the scaffold, boosting the cell-material interactions [3].

### References

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