

## Biodegradable poly[(d,l)-lactide-co-glycolide] nanofibrous membranes providing sustainable release of carmustine in the cerebral cavity

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In this study, we developed biodegradable poly[(d,l)-lactide-co-glycolide] nanofibrous membranes via electrospinning that provided a sustained release of BCNU. An elution method and a HPLC assay were employed to characterize the in-vitro and in-vivo release behaviors of pharmaceuticals from the electrospun membranes. The experimental results show that the biodegradable, nanofibrous membranes released high concentrations of BCNU for more than 6 weeks in the cerebral cavity of rats. Furthermore, the membranes can better conform to the geometry of the brain tissue and can cover more completely the tissue after the removal of tumors, achieving better drug transport without interfering with the normal function of the brain. Histological examination showed no obvious inflammation reactions of the brain tissues. By adopting the electrospinning technique, we will be able to manufacture biodegradable, nanofibrous membranes for the long-term deliveries of various anti-cancer drugs in the cerebral cavity, which can enhance the therapeutic efficacy of GBM treatment.

### Biography

S.J. Liu earned his Master and Ph.D. degrees from Cornell University and the University of Wisconsin at Madison in 1989 and 1992 respectively. Prof. Liu had been working as a Post-doctoral research fellow at McMaster University of Canada, and also been as a visiting professor to the Tokyo Institute of Technology in Japan and Aachen University of Applied Science in Germany. Prof. Liu received the Morand Lambla Award from the International Polymer Processing Society in 2008. He is the author of more than 200 scientific publications including 120 referred journal papers, editor and co-editor of 6 books and the author of 15 patents. Prof. Liu is also serving as the Editor of *Journal of Polymer Engineering (SCI)* and the Associate Editor of *Asia Pacific Journal of Chemical Engineering (SCI)*.

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