Prevention of adhesion bands by ibuprofen-loaded PLGA nanofibers

Fatemeh Jamshidi-Adegani¹, ², Ehsan Seyedjafari³, Nematollah Gheibi⁴, Masoud Soleimani², ⁵*, Mehdi Sahmani⁶**

¹Department of Molecular Medicine, School of Medicine, Qazvin University of Medical Science, Qazvin, Iran
²Department of Molecular Biology and Genetic Engineering, Stem Cell Technology Research Center, Tehran, Iran
³Department of Biotechnology, College of Science, University of Tehran, Tehran, Iran
⁴Department of Physiology and Medical Physics, Qazvin University of Medical Sciences, Qazvin, Iran
⁵Department of Hematology, Faculty of Medical Science, Tarbiat Modares University, Tehran, Iran
⁶Department of Clinical Biochemistry and Genetics, Cellular and Molecular Research Center, Faculty of Medicine, Qazvin University of Medical Sciences, Qazvin, Iran

**Corresponding author: Mehdi Sahmani, Department of Clinical Biochemistry, Cellular and Molecular Research Center, Qazvin University of Medical Sciences, Qazvin, Iran. E-mail: m.sahmani@gmail.com

*Co-Corresponding author: MasoudSoleimani, Department of Hematology, Faculty of Medical Science, TarbiatModares University, Tehran, Iran P.O. Box 14115-111; E-mail:soleim_m@modares.ac.ir

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Abstract

In this study, prevention of the adhesion bands and inflammatory features has been investigated using poly (lactic-co-glycolic acid)-ibuprofen (PLGA-IB) nanofibrous meshes in a mice model. In order to find the optimized membrane for prevention of postoperative adhesion bands, we have compared PLGA-IB group with PLGA, IB and control groups in a mice adhesion model. Two scoring adhesion systems were used to represent the outcome. According to the results obtained in this study, the PLGA-IB nanofiber membrane showed a greater reduction in adhesion band than other groups. In conclusion, among FDA-approved polymers and drugs, PLGA-IB meshes could be applicable as a potential candidate for prevention of post-operative abdominal inflammation and adhesion bands formation.

Key Words: intra-peritoneal adhesion; poly (lactic-co-glycolic acid) (PLGA); ibuprofen