

## عنوان مقاله:

A Sponge wound healing accelerator containing PRF: An in vitro and in vivo Study

## محل انتشار:

کنفرانس بین المللی پیشرفت های اخیر در مهندسی، نوآوری و تکنولوژی (سال: 1401)

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## خلاصه مقاله:

Despite significant advances in surgery and postoperative care, there are still challenges in the treatment of postoperative wounds, there are still challenges, including the high risk of complications and infection. Using of wound dressings is a common way to repair a skin defect and protect it from infection and dehydration. Platelet-rich fibrin (PRF) is known as an effective wound healing agent by creating an environment rich in growth factors and cytokines. The aim of this study was to fabricate a freeze-dried chitosan (Cs)/polyvinylpyrrolidone (PVP) sponge wound dressing containing different percentages of PRF (1, 1.5 and 2% w/v). FTIR and SEM analysis was performed to characterize the prepared sponges. Based on mechanical properties, the Cs/PVP sample with 1% w/v of PRF (Cs/PVP/1PRF) was selected as the optimal sample. Results of enzyme-linked immunosorbent assays showed that Cs/PVP/1PRF wound dressing has a time-independent release of VEGF and PDGF-AB in 7 days. According to MTT and CAM assays, the Cs/PVP/1PRF sample significantly increased L929 cell viability and angiogenic potential compared to other samples, respectively. Finally, the results of this study strongly recommend the use of Cs/PVP/1PRF sponge wound dressing for the treatment of postoperative wounds, and skin tissue engineering applications.

## کلمات کلیدی:

Chitosan, Platelet-rich fibrin, Polyvinylpyrrolidone, Wound dressing, Wound healing

## لینک ثابت مقاله در پایگاه سیویلیکا:

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