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Editorial

Recent Development in Biomaterials Based Scaffolds for Tissue Engineering Applications

Syed Salman Shafqat[1]*, Syed Rizwan Shfqat[1] and Syeda Amna Masood[2]

[1]Department of Chemistry, Division of Science and Technology, University of Education, Lahore, Pakistan

[2]College of Pharmacy, University of Sargodha, Pakistan

***Corresponding Author:** Syed Salman Shafqat, Department of Chemistry, Division of Science and Technology, University of Education, Lahore, Pakistan.

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The conventional treatments for skin wounds and burns modalities include the use of autografts, allografts, and xenografts. Although these approaches are working very well in development of defected part of the living organism, but they have their own limitations. For examples, autography faces problem of infection, donor site morbidity and low availability. Similarly, allografts and xenografts suffered from immune incompatibility, highly expensive and face donor shortage. These limitations related to tissue engineering can be resolved by developing tissues *in vitro* that serve the purpose of skin tissue.

Extensive study has been conducted to develop scaffolds for wound healing applications. In this regards, biomaterials have been developed to replace tissues lost to disease or trauma due to their inertness and non-interactive nature to biological systems in which they are incorporated. Synthetic biomaterials such as ceramics and metal alloys carry more reproducible properties and have better performance as compared to naturally occurring polymers. The recent progress in this emerging area has now enabled the scientist to develop materials which have tendency to grow, cure, augment or substitute any tissue of the body. The synthetic approach of novel biomaterials is now motivated on imitating many functions of the extracellular matrices of body tissues, as these can regulate host responses in a well-defined manner.

Groeber., *et al*. have investigated the applications of tissue engineered skin for *in vivo*/*in vitro* models. They explained the potential of *in vitro* skin models for identifying skin destructive pathological situations and for exploring the elementary evolving phenomenon. They have also presented a pit- falls comparison of *in vitro* models and *in vivo* skin models. Fu., *et al*. have explored a bacterial cellulose based scaffold for repair of skin tissues. Zhong., *et al*. have explained the significance of scaffolds in skin wound healing and dermal rebuilding and have specially stressed the use of electrospinning for skin wound healing. They have discussed the application of composite scaffold composed of natural polymer/inorganic materials for enhanced skin wound healing. Amna., *et al*. presented a study on the development of an alginate (ALG) scaffold fabricated with mesoporous silica nanoparticles (MSNs) loaded with salicylic acid (SA) and Ketoconazole (KCZ) for the treatment of infections/dermatological disorder by taking the advantage of combination therapy.