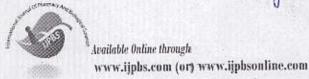


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R<u>esearch</u> A<u>rticle</u> Biological Sciences

ARTIFICIAL SKIN SCAFFOLD TO TREAT BURN SCARS AND IT'S OTHER APPLICATIONS

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ABSTRACT

According to present strategies of regenerative medicine, it is focussing on altered skin (such as burnt skin) which can be transplanted with combination of scaffold and biomolecules [1][2]. In current years, biologically active scaffolds are being used as extrace what motive that can induce synthesis of tissues and organs [3]. Scaffold is required for the restoration of the function of tissue and its regeneration as it acts as short term matrix for cell proliferation and extracellular matrix deposition [4]. Scaffolds are used for tissue engineering such as bone, cartilage, ligament, skin, vascular tissues, neural tissues, and skeletal muscle and as vehicle for the controlled delivery of drugs, proteins, and DNA [5]. Artificial skin fines its application in a broad range of areas including robotics, human-computer interfaces and other areas that involve mechanical deformation [6]. In this paper, an overview of the artificial skin scaffolds, its material properties which are used for treating burnt scars and its application is discussed.

KEY WORDS

Artificial skin, collagen, E∈M, epidermis freeze drying, grafting, necrotic tissue scaffold.

INTRODUCTION

Skin is the largest organ of human body that covers entire body and protects the internal organs against infection, injury and harmful sun rays [7].

When the skin is critically damaged because of disease or burns, the body cannot respond fast enough to make the necessary substitution of cells and some burn victims may die due of loss of plasma and infection. To avoid these consequences and to correct these deformities, artificial skin or skin grafts are used.

Artificial skin is a synthetic substitute which is shaped in laboratory for human skin that can protect the lives of severely burned patients and it covers the entire bcdy, keeping dangerous bacteria out and vital fluids in [8].

Scaffold designing and its fabrication are major area of biomaterial research, and they are also important for tissue engineering and regenerative medicine research. Scaffold plays important role in tissue regeneration and ts repair. During the past two decades, many works have been done to extend potentially applicable scaffold materials for tissue engineering. Scaffolds are defined as three-dimension porous solid biomaterials designed to perform some following functions [9][10]:

- Uphold cell-biomaterial interactions, cell adhesion, and ECM deposition.
- Allows sufficient transport of gases, nutrients, and regulatory factors to allow cell survival, proliferation, and differentiation.

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