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46205	AIMS International Journal of Management	UNIV	Social Science	A I M S International	19397011		United States
46229	International Journal of Education	UNIV	Multidisciplinary	International Journal of Education	23474343		India
46242	Diaspora Studies	UNIV	Social Science; Arts & Humanities	Taylor & Francis	09739572	09763457	India
46257	EURO Journal on Computational Optimization	UNIV	Science	Springer	21924406	21924414	United Kingdom
46269	Advances in Agriculture	UNIV	Science	Hindawi	23147539	23147539	United States
46274	Gifted Education International	UNIV	Multidisciplinary; Social Science	Sage Publications Ltd	20479077	02614294	United Kingdom
46280	International Journal on Applied and Computational Mathematics	UNIV	Science	Springer	23495103	21995796	China
46281	The IUP Journal of Corporate Governance	UNIV	Social Science	Sage Publications India Pvt. Ltd	09746862		India
46293	danishkada - i - Pezishki	UNIV	Arts & Humanities	Tehran University of Medical Sciences	16831764		Iran
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46301	History of Economics Review	UNIV	Social Science	Routledge	10370196	18386318	Australia
46303	SeMa Journal	UNIV	Science	Springer	22543902	22817875	Italy
46322	International Journal of Pharmacy and Biological Sciences	UNIV	Science	Jayamal Reddy Gangadi, Ed. & Pub.	22307605		India

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 extracellular matrix 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 finds 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, ECM, 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 body, 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 its 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.