

Accepted Manuscript

Delivery systems of current biologicals for the treatment of chronic cutaneous wounds and severe burns

Meilang Xue, Ruilong Zhao, Haiyan Lin, Christopher Jackson



PII: S0169-409X(18)30041-3
DOI: [doi:10.1016/j.addr.2018.03.002](https://doi.org/10.1016/j.addr.2018.03.002)
Reference: ADR 13270

To appear in: *Advanced Drug Delivery Reviews*

Received date: 29 September 2017

Revised date: 8 February 2018

Accepted date: 13 March 2018

Please cite this article as: Meilang Xue, Ruilong Zhao, Haiyan Lin, Christopher Jackson , Delivery systems of current biologicals for the treatment of chronic cutaneous wounds and severe burns. The address for the corresponding author was captured as affiliation for all authors. Please check if appropriate. *Adr*(2018), doi:[10.1016/j.addr.2018.03.002](https://doi.org/10.1016/j.addr.2018.03.002)

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

CONTENTS

1.	BIOLOGICAL MOLECULES AND THEIR ROLE IN WOUND HEALING	5
1.1.	Normal Cutaneous Wound Healing	6
1.1.1.	Haemostasis	6
1.1.2.	Inflammation	6
1.1.3.	Proliferation	7
1.1.4.	Remodeling	8
1.2.	Pathological Wound Healing	9
1.2.1.	Insufficient Healing	9
1.2.2.	Excessive Healing	13
1.3.	Wound Healing Considerations	15
2.	DELIVERY OF PURIFIED BIOLOGICAL MOLECULES	16
2.1.	Systemic	16
2.2.	Topical-Local	18
2.2.1.	Topical	18
2.2.2.	Intralesional Injection	19
2.2.3.	Microneedles	20
2.3.	Gene Modification Therapy	21
2.3.1.	Viral Vectors	22
2.3.2.	Non-Viral Vectors	22
2.4.	Biomaterial-Based Systems	25
2.4.1.	ECM Scaffolds	26
2.4.2.	Electrospun Nanofibrous Scaffolds	28
2.4.3.	Hydrogels	29
2.4.4.	Nanoparticles (NPs)	30
3.	DELIVERY OF BIOLOGICAL MOLECULES BY LIVING SYSTEMS	32
3.1.	Cell Grafting	32
3.1.1.	Autologous Macrophages	32
3.1.2.	Cultured Skin Cells	33
3.1.3.	Stem Cells (SCs)	36
3.1.3.1.	Skin Stem Cells	37
3.1.3.2.	Mesenchymal Stem Cells (MSCs) and Endothelial Progenitor Cells (EPCs)	38
3.1.3.3.	Induced Pluripotent Stem Cells (iPSCs) and Embryonic Stem Cells (ESCs)	40
3.2.	Skin Grafting	42
3.3.	Living Skin Equivalent (LSE)	43

Download English Version:

<https://daneshyari.com/en/article/8402005>

Download Persian Version:

<https://daneshyari.com/article/8402005>

[Daneshyari.com](https://daneshyari.com)