

MALAYSIAN JOURNAL OF

Medicine and Health Sciences

Vol. 15 No. SUPP8 / Nov 2019

*Supplementary Issue:
2ND INTERNATIONAL
CONFERENCE ON ORAL
MICROBIOLOGY AND ORAL
IMMUNOLOGY
9-10 November 2019*

Malaysian Journal of Medicine and Health Sciences Vol. 15 No. SUPP8, Nov 2019



Faculty of Medicine and Health Sciences
Universiti Putra Malaysia
43400 UPM Serdang
Selangor Darul Ehsan
Malaysia
<http://medic.upm.edu.my/>

UPM Press
Universiti Putra Malaysia
43400 UPM Serdang
Selangor Darul Ehsan
Malaysia
<http://penerbit.upm.edu.my>

PENERBIT
UPM
UNIVERSITI PUTRA MALAYSIA
PRESS



A scientific journal published by Universiti Putra Malaysia Press

About the Journal

The Malaysian Journal of Medicine and Health Sciences (MJMHS) is published by the Faculty of Medicine and Health Sciences, Universiti Putra Malaysia. The main aim of the MJMHS is to be a premier journal on all aspects of medicine and health sciences in Malaysia and internationally. The focus of the MJMHS will be on results of original scientific research and development, emerging issues and policy analyses pertaining to medical, biomedical and clinical sciences. The Malaysian Journal of Medicine and Health Sciences is now indexed in the following data bases: Scopus, EBSCOhost, ISC, and Rubriq.

Editorial Board

Editor in Chief:
Assoc. Prof. Dr. Normala Ibrahim

Members:
Prof. Dr. Manohar Arumugam
Prof. Dr. Rukman Awang Hamat
Assoc. Prof. Dr. Rajesh Ramasamy Assoc.
Prof. Dr. Sharmili Vidyadaran Assoc. Prof.
Dr. Sethu Thakachy Subha Assoc. Prof.
Dr. Loh Su Peng
Assoc. Prof. Dr. Nor Afiah Mohd Zulkefli
Assoc. Prof. Dr. Wan Aliaa Wan Sulaiman
Dr. Habibah Abdul Hamid
Dr. Ling King Hwa
Dr. Zubaidah Nor Hanipah

Technical Coordinator:
Dr. Tan Kit Aun

International Advisory Board

Prof. Dr. Pierce Anthony Grace
Prof. Dr. David Isaacs
Prof. Dr. P. Ronan O'Connell
Prof. Dr. Graham Alexander Mc Gregor
Prof. Dr. Tan Ser Kiat
Prof. Dr. Gregory Y.H. Lip
Prof. Dr. Roger Pepperell

THE USE OF COLLAGEN BIOMATERIAL IN ORAL CANCER: A SYSTEMATIC REVIEW

Muhammad Lutfi Mohamed Halim¹, Nora Azirah Mohd Zayi¹, Mohd Yusof Mohamad^{1*}, Mohd Hafiz Arzmi²

¹ Department of Physical Sciences, Kulliyah of Allied Health Sciences, International Islamic University Malaysia, Jalan Sultan Ahmad Shah, Bandar Indera Mahkota, 25200 Kuantan, Pahang Darul Makmur, Malaysia

² Department of Fundamental Dental and Medical Sciences, Kulliyah of Dentistry, International Islamic University Malaysia, Jalan Sultan Ahmad Shah, Bandar Indera Mahkota, 25200 Kuantan, Pahang Darul Makmur, Malaysia

*Corresponding author: yusofkajs@iiu.edu.my

ABSTRACT

Introduction: Oral cancer is the sixth most common malignancy in the world. It is a major concern in Southeast Asia primarily due to betel quid chewing, smoking, and alcohol consumption. In Malaysia, oral cancer related cases accounts for 1.55% of the cause of deaths. Despite recent advances in cancer diagnoses and therapies, the survival rate of oral cancer patients only reached 50% in the last few decades. Tissue engineering (TE) principles may provide new technology platforms to study mechanisms of angiogenesis and tumour cell growth as well as potentially tumour cell spreading in cancer research. The use of biomaterial, appropriate cell source and proper signalling molecules are vital components of TE. Collagen biomaterial are widely used scaffold or membrane in oral application. Nevertheless, no review has been performed on the its usage for the study of oral cancer. This study aimed to systematically review the use of collagen scaffold in oral cancer application. **Methods:** Research articles were searched using Scopus, Pubmed and Web of Science (WOS) databases. The keywords were limited to “collagen membrane OR collagen scaffold” AND “oral cancer”. **Results:** Initial search yielded 61 papers (Scopus:37, Pubmed: 12, WOS: 12). Further scrutinization of the papers based on the inclusion criteria resulted total of 3 papers. Two of the papers used collagen membrane for regeneration of oral mucosal defect and increment of alveolar ridge height post-surgery. The remaining paper utilize collagen biomaterial as scaffold for the culture of adenoid cystic carcinoma (ACC) cells. All papers reported significant role of collagen biomaterial in terms of tissue formation, healing scaffold and cellular proliferation. **Conclusion:** Collagen utilization as biomaterial offers potential use for regeneration of oral related structures as well providing useful model for therapeutics anti-cancer research.