

Regenerative power of bioactive glass in maxillofacial region (In vitro, In vivo and clinical trial)



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Biography

Noha El Shazly is currently a researcher at the Tissue Engineering labs, Faculty of Dentistry, Alexandria University, Egypt. She graduated from the Faculty of Dentistry in 2012 with a very good and honour degree. She finished her master degree in the field of oral and maxillofacial surgery- Regenerative medicine in 2019. She participated in many national and international projects and conferences. She published an NIH registered clinical trial in 2016. Noha has developed many research skills pertaining to the field of tissue engineering include scaffold fabrication and characterization, cell culture procedures, surgical animal experimentation, histological processing and analysis as well as basics for conduction of human clinical trials.



Abstract

Generations of silicate bioceramics have been introduced to the field of tissue engineering as enhancers of the body regeneration. On top of these bioceramics, is bioactive glass invented by Hench in 1969. Different chemical and structural forms of sol-gel bioactive glasses are well known to be used in many medical applications. Regarding the maxillofacial region, multiple forms and 3D architectures are developed to stimulate in situ regenerative capacity on level of hard, soft tissues. Allowing high integration between the old and new tissues. They can control cell behaviour, turning cell genes on and off. Having the power to increase or decrease extracellular mediators. New approaches of using bioactive glass on dental implants and as antibacterial canal medication in regenerative endodontics are also in progress. This makes bioactive glass possess high regenerative power to be recommended as "One of the powerful bioceramic in the advanced tissue engineering technology.

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