

# Regenerative medicine and tissue engineering-driven innovation of medical science and technology

## Editorial

This is a good chance to introduce my latest scientific achievements in relation to advances in tissue engineering and regenerative medicine, but I preferred to start with the justifications of my nomination by the Council of Menoufia University, Egypt to TWAS prize 2016 in Medical Sciences of the World Academy of sciences for the advancement of science in developing countries to introduce my outstanding contributions to the application of science and technology and scientific research achievements of outstanding significance for the development of scientific thought through my leadership of researches since more than 15 years in the field of stem cell biology, regenerative medicine, nanotechnology and tissue engineering.

The Council of Menoufia University summarized their justifications of its outstanding nature as follows:

1. Her outstanding contributions to articulate an Egyptian vision towards the search of more effective ways of generating and applying science and technology to the problems and opportunities of the region and to redirect a large fraction of efforts towards the generation of a new scientific and technological capacity: science and technology for sustainable development and to identify research priorities for our region in the field of hepatitis C virus (HCV), liver diseases and hepatocellular carcinoma (HCC) as Egypt has the highest prevalence of HCV in the world and more than 80 percent of hepatitis C infections become chronic and lead to liver disease.
2. For her contributions to understanding of stem cell biology, regenerative medicine, nanotechnology and tissue engineering based her in-depth experimental investigations and her contribution by series of oral presentations and lectures in the Faculty to Clinical Pathology students & staff and also in local and international conferences.
3. According to her outstanding contribution to the application of science and technology and scientific research achievement of outstanding significance for the development of scientific thought through her leadership of researches in the field of stem cell biology, regenerative medicine, nanotechnology and tissue engineering in many Master Science and MD theses.

## Success story - putting technology into practice

The M.Sc. of Clinical Pathology, which was discussed in the Fe-

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bruary 7, 2016 and entitled: "Platelet-rich plasma preparation applications in knee osteoarthritis" under her supervision as the main supervisor and chief scientist who selected the subject of the research, the jury board had recommended the adoption of the thesis and for being fabulous scientific breakthrough with 92.8% success rate for the first time in Egypt, addresses the Faculty Council on 21 February 2016 to put into clinical application in cases of knee Osteoarthritis. And Department of Clinical Pathology announced its full readiness to participate with clinical departments in the practical application of this method for being a scientific prestigious achievement for Menoufia Faculty of Medicine and the Department of Clinical Pathology.

About the advances in tissue engineering and regenerative medicine, I present Montaser et al prospective pilot ongoing research to explore the role that implanted mesenchymal stem cells (MSCs) may play in tissue repair or regeneration of the injured joint, by delivery of an autologous preparation of stem cells with nano *scaffolds* and plasma-rich in growth factors (PRGF) to caprine knee joints following induction of Osteoarthritis. Our pilot study employed PRGF on MSCs with nano *scaffolds* in goat injured joint to highlight the regenerative effect of MSCs therapy on the injured knee.

## Acknowledgements

None.

## Conflict of interest

The author declares no conflict of interest.