LETTER TO THE EDITOR

RJME Romanian Journal of Morphology & Embryology http://www.rjme.ro/

Is Tissue Engineering a new histological paradigm?

ALBERTO ENRIQUE D'OTTAVIO

Faculty of Medical Sciences and Research Council, National University of Rosario, Argentina

Dear Editor,

Given the statement of Tissue Engineering (TE) as a new paradigm in Medical Histology [1], this Letter to the Editor attempts to offer a personal perspective on that issue for avoiding an eventual confusion: the belief that it represents the total replacement of Histology by TE.

In addition to other aspects more closely linked to the institutional domain, Histology primarily encompasses teaching and scientific research, carried out at both the undergraduate and graduate levels. As regards teaching, the informative-formative nature of its active theoretical-practical approach leading its teaching and learning processes remains only with modifications derived from content updates and pedagogical-didactic renewals [virtuality, podcast, YouTube Channels and other possible Information and Communication Technologies (ICTs)] [2]. Whatever the curricular format, its interaction and integration with Anatomy, as well as with Physiology, Pathology, and many other subjects (particularly those dealing with TE), endure throughout undergraduate training, in addition to providing proper inputs for further postgraduate specialties.

In turn, scientific histological research evolves in parallel with technological advances and methods for scrutinizing increasingly complex levels of biological organization from cells, tissues, organs, and systems.

Going beyond, the histological involvement in interdisciplinary TE for disease therapy in medical practice would be the true and so-called paradigm shift. Therefore, this would expand its usual basic relations with Physiology and Pathology to fields dealing with tissue structure, materials biocompatibility, suitable scaffold design, disease model development, tissue regeneration guiding, and improving the functionality of artificial tissues resembling the natural ones. Furthermore, this relevant expansion, a new histological feature that joins fundamental knowledge with its immediate application to patients, could be coined as Therapeutic Translational Histology.

Conflict of interests

The author has no conflict of interests to declare.

References

[1] Campos A. Ingeniería tisular, universidad y sistema de salud. Historia de una experiencia [Tissue engineering, university and health system. History of an experience]. Anales RANM, 2019, 136(2):124–130. https://doi.org/10.32440/ar.2019.136.02.rev06

[2] Bassan ND, D'Ottavio AE. Histología: una disciplina con múltiples potencialidades formativas [Histology: a discipline with multiple formative potentialities]. Rev Educ Cienc Salud, 2012, 9(2):81–85. http://www2.udec.cl/ofem/recs/anteriores/vol922012/esq92a.pdf

Corresponding author

Alberto Enrique D'Ottavio, PhD, Faculty of Medical Sciences and Research Council, National University of Rosario, Entre Ríos 1214, Rosario, Argentina; Phone +54 341 5862173, e-mail: aedottavio@yahoo.com.ar

Received: July 29, 2025

Accepted: January 16, 2026