

Content available at: https://www.ipinnovative.com/open-access-journals

# International Journal of Clinical Biochemistry and Research

JATIVE PUBLICATION

Journal homepage: https://www.ijcbr.in/

## Letter to the Editor

# Alb-PRF: the history behind the science

# Carlos Fernando de Almeida Barros Mourão <sup>® 1,\*</sup>, Monica Diuana Calasans-Maia<sup>2</sup>, Gutemberg Gomes Alves<sup>1</sup>

<sup>1</sup>Dept. of Molecular and Cell Biology, Institute of Biology, Fluminense Federal University, Niterói, Brazil



#### ARTICLE INFO

Article history:
Received 18-01-2022
Accepted 29-01-2022
Available online 11-03-2022

This is an Open Access (OA) journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: reprint@ipinnovative.com

#### Dear Editor,

In your scientific journal, we are grateful to have the possibility to read the revision about the Albumin Plateletrich Fibrin/ Concentrate of Growth Factors (Alb-PRF/ Alb-CGF) by Manjunatha et al. <sup>1</sup> In the present letter, as the creators of this blood by-product, we would like to increase the history presented by the authors.

In 2015, Kawase et al.<sup>2</sup> conducted a study about the heating process of the PRF membrane, concluding the possibility to increase the time of the Platelet-rich fibrin (PRF) degradation in the human body. However, it was possible to observe a non-preservation of the cytokines/growth factors presented in the regular PRF. Thus, in 2018, our group<sup>3</sup> published the process of plasma denaturation (albumin) with the incorporation of the cytokines (non-coagulated PRF/ liquid PRF/ injectable PRF).

Nowadays, the name Alb-PRF was introduced in an article that Carlos Mourão (the mind behind of this blood by-product) is one of the co-authors. That was the second biological evaluation conducted by Kobayashi et al.<sup>4</sup> following the same process presented in 2018<sup>3</sup> and the patent register under the number BR1020190144475 in Brazil, 2019 produced by our scientific group. However, the patent was registered to protect the innovation and not create a commercial product. Our main idea is to share knowledge

E-mail address: mouraocf@gmail.com (C. F. A. B. Mourão).

with humanity.

In the beginning, Alb-PRF was produced to create an autologous barrier, increasing the time resorption of the regular PRF with the liberation of cytokines to help the healing process. <sup>3,5</sup>

After that, it was started to be used as a scaffold for different procedures, such as facial esthetics. 5-7 Also, it is already possible to observe studies suggesting the possibility of using such an osteoconductive biomaterial. 8

The recent finds show the Alb-PRF as an autologous promisor biomaterial. Our group are grateful to contribute to the science behind that. Also, we encourage other groups to study and publish more research about the use of the Alb-PRF/ Alb-CGF and their applications.

With this, we would like to thank the excellent review presented by Manjunatha et al. 1 and the possibility of calling attention to this relevant question for the medical/dental area.

### References

- Manjunatha VA, Damera TK, Kumar ATK, Chandini VS, Popat T, Vala D. Novel Albumin Gel-platelet-rich fibrin mixture (Alb-PRF); where do we stand? Int J Clin Biochem Res. 2021;8(4):239

  –41.
- Kawase T, Kamiya M, Kobayashi M, Tanaka T, Okuda K, Wolff F, et al. The heat-compression technique for the conversion of plateletrich fibrin preparation to a barrier membrane with a reduced rate of biodegradation. *J Biomed Mater Res B Appl Biomater*. 825;103(4):825– 31.

<sup>&</sup>lt;sup>2</sup>Dept. of Oral Surgery, Dental School, Fluminense Federal University, Niterói, Brazil

<sup>\*</sup> Corresponding author.

- 3. Mourão C, Gheno E, Lourenço ES, Barbosa RL, Kurtzman GM, Javid K, et al. Characterization of a new membrane from concentrated growth factors associated with denaturized Albumin (Alb-CGF) for clinical applications: A preliminary study. *Int J Growth Factors Stem Cells Dent.* 2018;1(2):1–6.
- Fujioka-Kobayashi M, Schaller B, Mourão C, Zhang Y, Sculean A, Miron RJ. Biological characterization of an injectable platelet-rich fibrin mixture consisting of autologous albumin gel and liquid plateletrich fibrin (Alb-PRF). *Platelets*. 2021;32(1):74–81.
- Gheno E, Mourão C, Mello-Machado RC, Lourenço ES, Miron R, Catarino KFF, et al. In vivo evaluation of the biocompatibility and biodegradation of a new denatured plasma membrane combined with liquid PRF (Alb-PRF). *Platelets*. 2021;32(4):542–54.
- Kawase T, Mubarak S, Mourão CF. The Platelet Concentrates Therapy: From the Biased Past to the Anticipated Future. *Bioengineering (Basel)*. 2020;7(3):82.
- Mourão C, Tuttle D, Carpini RD, Miron RJ, Davies C. Future Trends in Esthetics Medicine. In: Catherine D, Richard MJ, editors. Plateletrich fibrin in facial esthetics. Chicago, USA: Quintessence Publishing; 2020
- 8. Feng M, Wang Y, Wei Y, Zhang X, Xiao L, Gong Z, et al. Preparation, characterization and biological properties of a novel bone block composed of platelet rich fibrin and a deproteinized bovine bone mineral. *Fundamental Res.* 2021;doi:10.1016/j.fmre.2021.08.003.

## **Author biography**

**Carlos Fernando de Almeida Barros Mourão,** Professor https://orcid.org/0000-0001-5775-0222

Monica Diuana Calasans-Maia, Professor

Gutemberg Gomes Alves, Professor

Cite this article: Mourão CFAB, Calasans-Maia MD, Alves GG. Alb-PRF: the history behind the science. *Int J Clin Biochem Res* 2022;9(1):90-91.