


CORRECTION

Open Access



# Correction to: Recombinant human interleukin-7 reverses T cell exhaustion ex vivo in critically ill COVID-19 patients

Frank Bidar<sup>1,2,3</sup>, Sarah Hamada<sup>3</sup>, Morgane Gossez<sup>3,4</sup>, Remy Coudereau<sup>1,3</sup>, Jonathan Lopez<sup>5</sup>, Marie-Angelique Cazalis<sup>1</sup>, Claire Tardiveau<sup>1</sup>, Karen Brengel-Pesce<sup>1</sup>, Marine Mommert<sup>1</sup>, Marielle Buisson<sup>6</sup>, Filippo Conti<sup>1</sup>, Thomas Rimmelé<sup>1,2</sup>, Anne-Claire Lukaszewicz<sup>1,2</sup>, Laurent Argaud<sup>7</sup>, Martin Cour<sup>7</sup>, Guillaume Monneret<sup>1,3</sup> and Fabienne Venet<sup>3,4\*</sup>  on behalf of RICO Study Group

**Correction to:** *Ann Intensive Care* (2022) 12:21

<https://doi.org/10.1186/s13613-022-00982-1>

In the original publication of the article [1], the legends of *x*- and *y*-axis of panel a in Fig. 1 was inadvertently

omitted. Figure 1 should have appeared as shown in this correction (Fig. 1).

The original article has been corrected.

The original article can be found online at <https://doi.org/10.1186/s13613-022-00982-1>.

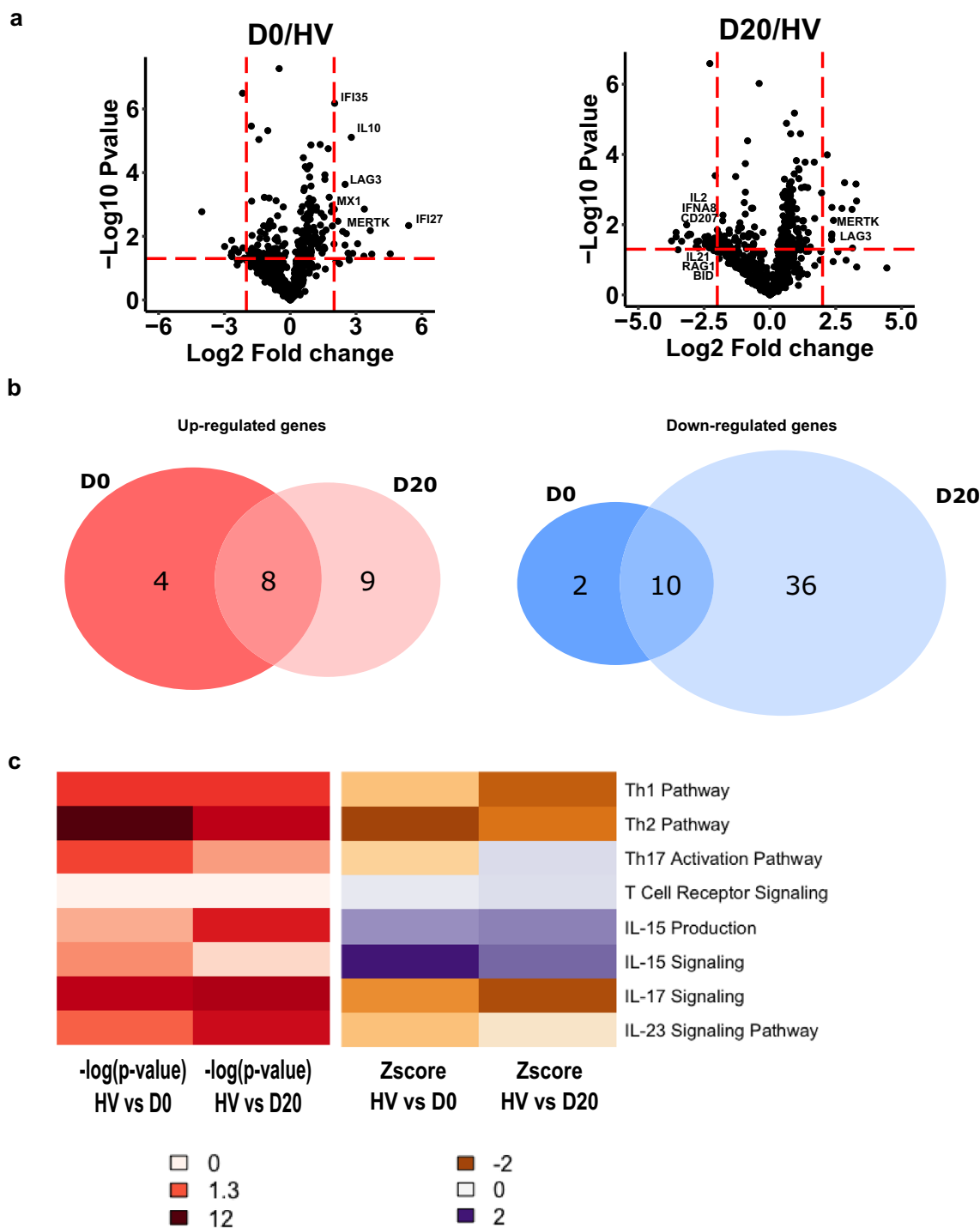
\*Correspondence: [fabienne.venet@chu-lyon.fr](mailto:fabienne.venet@chu-lyon.fr)

<sup>4</sup> Centre International de Recherche en Infectiologie (CIRI), Inserm U1111, CNRS, UMR5308, Ecole Normale Supérieure de Lyon, Université Claude, Bernard-Lyon 1, Lyon, France

Full list of author information is available at the end of the article



© The Author(s) 2022. **Open Access** This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>.



**Fig. 1** Transcriptomic profile of mononuclear cells in severe COVID-19 patients. RNA extracted from PBMCs of COVID-19 patients at day 0 and day 20 ( $n = 10$ ) and healthy volunteers (HV,  $n = 10$ ) was analyzed through NanoString technology. **a** Volcano plots of differentially expressed genes between patients sampled at D0 or at D20 and HV are shown. Limits of significance are illustrated by red dotted lines (i.e.  $\text{Log}_2$  Fold Change =  $-2$  or  $+2$  and  $-\text{Log}_{10} P$  value =  $1.3$ ). Selected genes are mentioned. **b** Venn diagrams of significantly up-regulated (left diagram,  $n = 21$ ) or down-regulated (right diagram,  $n = 48$ ) genes between patients and HV are shown. **c** Ingenuity Pathway Analysis was applied on the list of differentially expressed genes at D0 and D20. Heatmaps of  $\text{Log}_{10} P$ -value (from white indicating the absence of significance to dark red indicating a strong significance) and Z-score (from orange indicating a down-regulation to purple indicating an up-regulation) for pathways related to T cell activation at D0 and D20 are presented

**Author details**

<sup>1</sup>Joint Research Unit HCL-bioMérieux, EA 7426 "Pathophysiology of Injury-Induced Immunosuppression", Université Claude Bernard Lyon, 1-Hospices Civils de Lyon-bioMérieux, 69003 Lyon, France. <sup>2</sup>Anesthesia and Critical Care Medicine Department, Edouard Herriot Hospital, Hospices Civils de Lyon, 69437 Lyon, France. <sup>3</sup>Immunology Laboratory, Hôpital E. Herriot-Hospices Civils de Lyon, 5 place d'Arsonval, 69437 Lyon Cedex 03, France. <sup>4</sup>Centre International de Recherche en Infectiologie (CIRI), Inserm U1111, CNRS, UMR5308, Ecole Normale Supérieure de Lyon, Université Claude, Bernard-Lyon 1, Lyon, France. <sup>5</sup>Biochemistry and Molecular Biology Laboratory, Lyon-Sud University Hospital-Hospices Civils de Lyon, Chemin du Grand Revoyet, Pierre-Benite, France. <sup>6</sup>Centre d'Investigation Clinique de Lyon (CIC 1407 Inserm), Hospices Civils de Lyon, 69677 Lyon, France. <sup>7</sup>Medical Intensive Care Department, Hospices Civils de Lyon, Edouard Herriot Hospital, 69437 Lyon, France.

Published online: 01 April 2022

**Reference**

1. Bidar F, Hamada S, Gossez M, Coudereau R, Lopez J, Cazalis M-A, Tardiveau C, Brengel-Pesce K, Mommert M, Buisson M, Conti F, Rimmelé T, Lukaszewicz A-C, Argaud L, Cour M, Monneret G, Venet F. Recombinant human interleukin-7 reverses T cell exhaustion ex vivo in critically ill COVID-19 patients, for the RICO study group. *Ann Intensive Care*. 2022;12:21. <https://doi.org/10.1186/s13613-022-00982-1>.

**Publisher's Note**

Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.