Check for updates

OPEN ACCESS

EDITED AND REVIEWED BY Anirban Ganguly, All India Institute of Medical Sciences Deoghar, India

*CORRESPONDENCE Fausto Almeida Sfbralmeida@usp.br

RECEIVED 18 March 2025 ACCEPTED 04 April 2025 PUBLISHED 16 April 2025

CITATION

Santos P, Rezende CP, Piraine R, Oliveira B, Ferreira FB, Carvalho VS, Calado RT, Pellegrini M and Almeida F (2025) Corrigendum: Extracellular vesicles from human breast cancer-resistant cells promote acquired drug resistance and pro-inflammatory macrophage response. *Front. Immunol.* 16:1595885. doi: 10.3389/fimmu.2025.1595885

COPYRIGHT

© 2025 Santos, Rezende, Piraine, Oliveira, Ferreira, Carvalho, Calado, Pellegrini and Almeida. This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY). The use, distribution or reproduction in other forums is permitted, provided the original author(s) and the copyright owner(s) are credited and that the original publication in this journal is cited, in accordance with accepted academic practice. No use, distribution or reproduction is permitted which does not comply with these terms.

Corrigendum: Extracellular vesicles from human breast cancer-resistant cells promote acquired drug resistance and pro-inflammatory macrophage response

Patrick Santos¹, Caroline P. Rezende¹, Renan Piraine¹, Bianca Oliveira¹, Francielle B. Ferreira¹, Vinicius S. Carvalho², Rodrigo T. Calado², Matteo Pellegrini³ and Fausto Almeida^{1*}

¹Department of Biochemistry and Immunology, Ribeirão Preto Medical School, University of São Paulo, Ribeirão Preto, SP, Brazil, ²Department of Medical Imaging, Hematology, and Oncology, Ribeirão Preto Medical School, University of São Paulo, Ribeirão Preto, Brazil, ³Department of Molecular, Cell, and Developmental Biology, University of California, Los Angeles, CA, United States

KEYWORDS

chemoresistance, tamoxifen, doxorubicin, immunomodulation, membrane transporters

A Corrigendum on

Extracellular vesicles from human breast cancer-resistant cells promote acquired drug resistance and pro-inflammatory macrophage response

by Santos P, Rezende CP, Piraine R, Oliveira B, Ferreira FB, Carvalho VS, Calado RT, Pellegrini M and Almeida F (2024). *Front. Immunol.* 15:1468229. doi: 10.3389/fimmu.2024.1468229

In the published article, there was an error in **Figure 6** as published. In panel A and B of **Figure 6**, the color in the graph legend corresponding to MCF-7 and MDA-MB-231 sensitive EVs should be in grey, not in blue. The corrected **Figure 6** and its caption "Figure 6. Resistant extracellular vesicles (EVs) induce the upregulation of genes associated with acquired drug resistance and increase the sensitive cells' survivability. The quantification of several genes by quantitative polymerase chain reaction (qPCR) of (A) sensitive MCF-7 exposed to tamoxifen-resistant (TAM-R) and doxorubicin-resistant (DOX-R) EVs. (B) The gene expression level of sensitive MDA-MB-231 cells exposed to TAM-R and DOX-R. (C) The apoptotic rate by annexin V/propidium iodide labeling in sensitive MCF-7 and sensitive MDA-MB-231 previously exposed to resistant EVs and treated with TAM and DOX. (D) Representative images and the clonogenic surviving fraction of MCF-7 cells previously exposed to TAM-R and (E) DOX-R EVs treated with the respective drug. (F) Representative images and the clonogenic surviving fraction of MDA-MB-231 cells previously exposed to TAM-R and (G) DOX-R EVs treated with the

respective drug. Values are displayed as the mean \pm standard deviation from three independent experiments. The asterisks indicate a significant difference between TAM-R EVs or DOX-R EVs exposure compared to sensitive EV effects (unpaired *t*-test). *p < 0.05, **p < 0.01, ***p < 0.001, ns, not significant." appear below.

The authors apologize for this error and state that this does not change the scientific conclusions of the article in any way. The original article has been updated.

Publisher's note

All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article, or claim that may be made by its manufacturer, is not guaranteed or endorsed by the publisher.

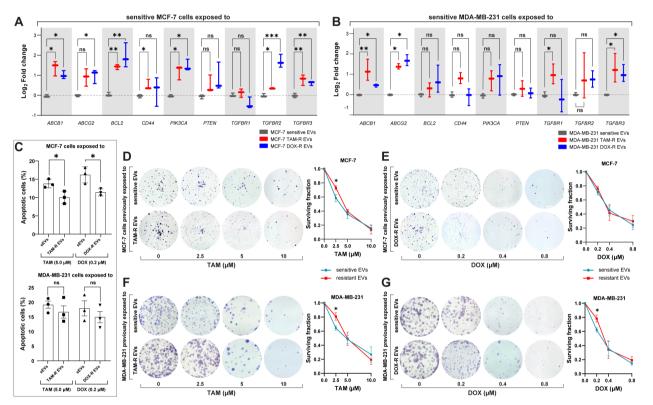


FIGURE 6

Resistant extracellular vesicles (EVs) induce the upregulation of genes associated with acquired drug resistance and increase the sensitive cells' survivability. The quantification of several genes by quantitative polymerase chain reaction (qPCR) of (A) sensitive MCF-7 exposed to tamoxifen-resistant (TAM-R) and doxorubicin-resistant (DOX-R) EVs. (B) The gene expression level of sensitive MDA-MB-231 cells exposed to TAM-R and DOX-R. (C) The apoptotic rate by annexin V/propidium iodide labeling in sensitive MCF-7 and sensitive MDA-MB-231 previously exposed to TAM-R and DOX-R. (C) The apoptotic rate by annexin V/propidium iodide labeling in sensitive MCF-7 and sensitive MDA-MB-231 previously exposed to TAM-R and C(E) DOX-R EVs treated with TAM and DOX. (D) Representative images and the clonogenic surviving fraction of MCF-7 cells previously exposed to TAM-R and (E) DOX-R EVs treated with the respective drug. (F) Representative images and the clonogenic surviving fraction of MDA-MB-231 cells previously exposed to TAM-R and exposed to TAM-R and G) DOX-R EVs treated with the respective drug. (F) Representative images and the clonogenic surviving fraction of MDA-MB-231 cells previously exposed to TAM-R and (E) DOX-R EVs treated with the respective drug. Values are displayed as the mean \pm standard deviation from three independent experiments. The asterisks indicate a significant difference between TAM-R EVs or DOX-R EVs exposure compared to sensitive EV effects (unpaired t-test). *p < 0.05, **p < 0.01, ***p < 0.001, ns, not significant.