

RETRACTION NOTE

Open Access



Retraction Note: Exosomal microRNA-32-5p induces multidrug resistance in hepatocellular carcinoma via the PI3K/Akt pathway

Xiao Fu¹, Mengjie Liu¹, Shengyang Qu¹, Jiequn Ma¹, Yamin Zhang¹, Tingting Shi¹, Hongqing Wen^{1,2}, Yujuan Yang³, Shuhong Wang¹, Jing Wang¹, Kejun Nan¹, Yu Yao^{1*} and Tao Tian^{1*}

Retraction Note: *J Exp Clin Cancer Res* 37, 52 (2018)
<https://doi.org/10.1186/s13046-018-0677-7>

The Editor-in-Chief has retracted this article. After publication, concerns were raised regarding highly similar images in the present figures, specifically:

- The Transwell assay images in Fig. 6e and f, and 7i appear to contain multiple overlapping panels;
- A number of images in Fig. 6e appear highly similar to those in Figs. 4d and 5d in the authors' earlier article [1].
- Figure 7h middle panel p-Akt lanes 3 and 4 appear highly similar to Fig. 7k right panel N-Cad lanes 1 and 2.
- Figure 7h left and right panel b-actin blots appear highly similar to those in Fig. 7k, but the middle panel blots are different.

Additionally, the study used Bel7402 and Bel/5-FU cell lines, which have both been reported to be HeLa derivatives. Therefore, these cells are not suitable models for hepatocellular carcinoma.

The authors have provided the raw data from the Transwell, immunohistochemistry and western blot assays. However, further checks by the publisher found labeling errors in the original western blot data that may have affected the results and conclusions of the article. The Editor-in-Chief therefore no longer has confidence in the presented data.

Corresponding Author Tao Tian has stated on behalf of all co-authors that they do not agree to this retraction.

Published online: 19 July 2023

The online version of the original article can be found at <https://doi.org/10.1186/s13046-018-0677-7>.

*Correspondence:

Yu Yao
13572101611@163.com
Tao Tian
tiantao0607@163.com

¹Department of Medical Oncology, The First Affiliated Hospital of Xi'an Jiaotong University, No. 277 Yanta West Road, Xi'an 710061, Shaanxi, People's Republic of China

²Department of Respiratory, Third Hospital of Xi'an, Xi'an 710018, Shaanxi, People's Republic of China

³The Third Department of Cardiology, Shaanxi Provincial People's Hospital, Xi'an 710068, Shaanxi province, People's Republic of China

References

1. Fu X, Wen H, Jing L, Yang Y, Wang W, Liang X, et al. Micro RNA-155-5p promotes hepatocellular carcinoma progression by suppressing PTEN through the PI 3K/Akt pathway. *Cancer Sci.* 2017;108(4):620–31. <https://doi.org/10.1111/cas.13177>.

Publisher's Note

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



© BioMed Central 2023. **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/>. The Creative Commons Public Domain Dedication waiver (<http://creativecommons.org/publicdomain/zero/1.0/>) applies to the data made available in this article, unless otherwise stated in a credit line to the data.