RETRACTION NOTE



Retraction Note: KRAS activation in gastric cancer stem-like cells promotes tumor angiogenesis and metastasis



Changhwan Yoon¹, Jun Lu², Yukyung Jun³, Yun-Suhk Suh^{4,5}, Bang-Jin Kim¹, Jacob E. Till⁶, Jong Hyun Kim⁷, Sara H. Keshavjee¹, Sandra Ryeom¹ and Sam S. Yoon^{1*}

Retraction Note: BMC Cancer (2023) 23:690

https://doi.org/10.1186/s12885-023-11170-0

The Editors have retracted this article. After publication, concerns were raised regarding highly similar images in Fig. 5d (VEGF-A sh.KRAS-/sh.VEGF-A+and sh.KRAS+/ sh.VEGF-A+). The authors have provided the original data to address these concerns; however, further checks by the publisher have found that a number of irregularities in the raw data files, as some of the images appear to be duplicated or overlap with samples representing different groups.

The Editors therefore no longer have confidence in the data presented in this article and its conclusions.

Yukung Jun and Sam S. Yoon agree to this retraction. None of the other authors have responded to any correspondence from the publisher about this retraction. Published online: 28 March 2024

Publisher's Note

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

The online version of the original article can be found at https://doi. org/10.1186/s12885-023-11170-0.

*Correspondence:

Sam S. Yoon

ssy2129@cumc.columbia.edu

¹Department of Surgery, Columbia University Irving Medical Center,

Milstein Hospital Building 7-002, 177 Fort Washington Avenue,

10032 New York, NY, USA ²Department of Gastric Surgery Eulian Med

²Department of Gastric Surgery, Fujian Medical University Union Hospital, Fuzhou, Fujian, China

³Center for Supercomputing Applications, Korea Institute of Science and Technology Information, Division of National, SupercomputingDaejeon, Korea

⁴Department of Surgery, Seoul National University, Bundang Hospital, Seongnam, Korea

⁵Department of Surgery, Seoul National University College of Medicine, Seoul, Korea

⁶Department of Cancer Biology, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA, USA

⁷Department of Biological Science, Hyupsung University, Hwasung-Si, Republic of Korea



© The Author(s) 2024. **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 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.