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Research Note

Assessment of retracted papers, and their retraction notices, from a cancer journal associated with "paper mills"

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Abstract

Cancer research is occasionally described as being in a reproducibility crisis. The cancer literature has ample papers retracted due to misconduct, including the use of paper mills, invalid authorship, or fake data. The objective of this paper was to gain an appreciation of the balance of retractions and associated retraction notices of 23 retracted *Cancer Biotherapy and Radiopharmaceuticals* papers associated with paper mills. By 23 March 2023, these retracted papers had already accumulated 287 citations according to Web of Science Core Collection, 253 according to Scopus, and 365 according to Google Scholar, i.e., metrically speaking, they were highly rewarded. All authors had an affiliation (71% being a hospital) in China. Most (12/21; 57%) of corresponding authors had emails with a @163.com suffix. Four of the retraction notices (i.e., 17%) explicitly indicated paper mills as a reason for retraction although, in general, the retraction notices lacked details and background that could assist readers' understanding of the retractions.

Keywords: Indexing; Oncology; Publishing history; PubMed; Retraction Notices; Transparency

1 Introduction

Cancer and oncology researches are stated as being in a replication and trust crisis (Errington et al., 2021; Teixeira da Silva, 2022). Plagued by issues related to replication, fraud, misconduct, paper mill-derived research and cross-publication forgeries, as well as failed peer review and editorial handling, the number of retracted papers related to cancer research has continued to climb (Pantziarka & Meheus, 2019; Retraction Watch, 2022). A salient example, *Tumor Biology*, had one of the highest retraction rates among biomedical journals, many as a result of fake peer

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review (Bhatt, 2021). Fake peer review (Rivera & Teixeira da Silva, 2021) and paper mill-derived fraud (Else & Van Noorden, 2021) threaten the integrity of and trust in the literature and industry (COPE & STM, 2022). Authors citing retracted literature might not always be aware that they are doing so (De Cassai et al., 2022).

The objective of this study was to appreciate some metrics- and indexing-related factors of papers that have been retracted from an indexed cancer journal, *Cancer Biotherapy and Radiopharmaceuticals* (*CB&R*), published by Mary Ann Liebert, Inc., and to gain an appreciation of the weight of "paper mills" in this body of retractions. We were spurred to analyze *CB&R* due to the public comments by Susan Jensen, the director of production and editorial operations at Mary Ann Liebert, Inc., who indicated that *CB&R* was identifying, and rejecting, papers that may have been derived from paper mills[①]. This study attempts to better appreciate *CB&R* retractions associated with paper mills, and the "quality" of their retraction notices (RNs).

2 Data and methods

The *CB&R* website was searched between July 5 and 10, 2022, to identify retractions in this journal. Details were confirmed manually, and against the Retraction Watch database (Retraction Watch, 2022). Scopus and Web of Science were also consulted (July 10, 2022) to try and draw any additional information of potential interest that could not be gleaned from either the *CB&R* website, or the Retraction Watch database. Background data for all of these aspects of the retracted papers can be found in the Supplementary Table.

3 Results and discussion

3.1 Properties of 23 *CB&R* retractions

We identified 23 retractions in *CB&R*, all original articles whose authors had an affiliation in China (i.e., 100%), and 52/73 (71%) of those affiliations were associated with hospitals (Table 1). This finding closely mirrors a trend observed by Zhao et al. (2021). None of the RNs are pay-walled, and three of the RNs have a correction. Four of the RNs explicitly indicate paper mills as a reason for retraction, but the vast

① "Our peer review team is very carefully assessing our published articles and, I am happy to say, are identifying similar problematic papers prior to publication, or even before peer review. We are very hopeful that these newly initiated workflows and protocols will significantly reduce nefarious papers being submitted to any of the Mary Ann Liebert, Inc., journal portfolio, as we are vehemently against all papermill submissions and will reject and/or retract any paper that is found to be from a papermill." (Retraction Watch, 2021)

Table 1. *Cancer Biotherapy and Radiopharmaceuticals* retractions (until July 10, 2022), including reason(s) for retraction and country of authors, according to Retraction Watch (2022). In addition, retraction notices were consulted to appreciate if retractions were induced by the authors, or by the editor/publisher. Finally, the number of affiliations associated with a hospital was noted.

DOI	Reason(s) for retraction[1]	Explicit author-induced?	# Hospital affiliations**
https://doi.org/10.1089/cbr.2019.3275	Irreproducible results	Yes	4/5
https://doi.org/10.1089/cbr.2019.3520	Concerns/issues about data/results; paper mill*	Yes	4/5
https://doi.org/10.1089/cbr.2014.1766	Concerns/issues about data/image; investigations/objection by third party	No	1/1
https://doi.org/10.1089/cbr.2014.1723	Concerns/issues about data/image; investigations/objection by third party; error in text	No	1/1
https://doi.org/10.1089/cbr.2019.3535	Image falsification/fabrication; miscommunication by third party; original data not provided; paper mill*	No	4/4
https://doi.org/10.1089/cbr.2020.3563	Concerns/issues about third party involvement; image duplication; data falsification/fabrication; miscommunication by third party	No	4/6
https://doi.org/10.1089/cbr.2019.3299	Breach of policy by author; original data not provided; paper mill	No	1/1
https://doi.org/10.1089/cbr.2014.1698	Data/text duplication; paper mill*	No	5/9
https://doi.org/10.1089/cbr.2014.1728	Data/text duplication; paper mill*	No	1/1
https://doi.org/10.1089/cbr.2014.1759	Data/text duplication; paper mill*	No	1/2
https://doi.org/10.1089/cbr.2014.1778	Data/text duplication; paper mill*	No	2/3
https://doi.org/10.1089/cbr.2017.2306	Breach of policy by author; paper mill	No	1/1
https://doi.org/10.1089/cbr.2017.2386	Misconduct by third party; paper mill	Yes	2/2
https://doi.org/10.1089/cbr.2018.2625	Unreliable results; paper mill	No	1/1
https://doi.org/10.1089/cbr.2018.2626	Breach of policy by author; paper mill	No	1/1
https://doi.org/10.1089/cbr.2018.2664	Breach of policy by author; paper mill	No	2/2
https://doi.org/10.1089/cbr.2018.2749	Paper mill	No	2/2
https://doi.org/10.1089/cbr.2019.2858	Paper mill	No	5/5
https://doi.org/10.1089/cbr.2019.2983	Paper mill	No	2/4
https://doi.org/10.1089/cbr.2019.3070	Breach of policy by author; paper mill	No	2/4
https://doi.org/10.1089/cbr.2018.2545	Concerns/issues about data/image; original data not provided; paper mill	No	3/3
https://doi.org/10.1089/cbr.2017.2432	Concerns/issues about data/image; original data not provided; paper mill	No	2/3
https://doi.org/10.1089/cbr.2015.1952	Concerns/issues about authorship/data/image/results/third party involvement; paper mill*	No	1/2

[1] Reasons, and wording of reasons, modified from the original statements at Retraction Watch after close examination of the reasons and the papers/websites. * The term "paper mill" does not appear in the original retraction notice. ** All affiliations from all papers were from China.

majority of papers were retracted for integrity-based issues related to raw data, data manipulation, or breach of data-related policies (Table 1). In Scopus, the retracted status of 17% of the 23 retracted papers is not indicated. For another four papers, the RN is available only when viewing the full description of the document, which might be confusing for Scopus users.

3.2 Emails and identities of authors of retracted *CB&R* papers

In addition to the association between paper mill-derived cancer research and affiliations that are Chinese hospitals, the use of web-based emails is also characteristic (Else & Van Noorden, 2021; Liu & Chen, 2021; Teixeira da Silva, 2021; Zhao et al., 2021). Corresponding authors' emails were missing from 4/23 papers on the publisher's website, one paper had three corresponding authors, but none had institutional emails, 12/21 (57%) emails were @163.com (5/21 were @126.com; 4/21 were @sina.com), and 9/21 (43%) emails had prefixes or names that were unrelated to the corresponding author's name (Suppl. Table 1).

The *CB&R* instructions for authors (IFA) made no specific mention of email-related limitations (*CB&R*, 2022). Another cancer journal, *Tumor Biology*, published by IOS Press, explicitly prohibited the use of web-based emails for submission, stating: "The journal does not accept submissions from authors using nondescript, anonymous, email addresses (e.g., yahoo.com, gmail.com, 163.com, rediffmail.com, sina.com, 126.com, hotmail.com, etc.)." (*Tumor Biology*, 2022). No ORCID (Open Researcher and Contributor ID) for any corresponding author was identified in all 23 retracted papers, even though the *CB&R* IFA indicated that ORCID is mandatory for corresponding authors: "All submitting authors are required to complete their submissions using an ORCID identifier" (*CB&R*, 2022). The existence of blank or disposable (one-time use) ORCIDs, as are sometimes observed in paper mill-derived papers, degrade trust in the validity of author-based identifiers (Teixeira da Silva, 2022b).

3.3 The citation of retracted literature

According to Web of Science Core Collection Citations, the 23 retracted papers accumulated (until March 23, 2023) 287 citations (253 according to Scopus and 365 according to Google Scholar). At the same time, these papers continue to receive citations after the retraction: 54 citations according to Web of Science Core Collection, 54 according to Scopus, and 77 according to Google Scholar. Some retracted cancer papers continue to accrue positive (i.e., supporting) citations, although these tend to wane after the second year, and dip to near-zero citations after about a decade (Hamilton, 2019). Just over 55% of 12,231 Web of Science-indexed retracted papers published between 1981 and 2020 were cited at least once, about a

quarter of which were self-citations (Sharma, 2021). Sharma (2021) also noted that *Cancer Research* had accrued 106 retractions that were cited on average 46 times. The reasons why authors cite retracted papers are not always clear (Dal-Ré & Ayuso, 2021), although the citation of older retracted papers tends to wane over time (Hsiao & Schneider, 2022).

3.4 Limited information in retraction notices limits their usefulness

We believe that more detailed information in the RNs would have made them more informative. Missing information from a RN, incomplete RNs, or RNs that are opaque or unclear do not benefit academia, and are a poor instrument of information (Teixeira da Silva & Vuong, 2022; Xu & Hu, 2022). In our view, a complete and informative RN – irrespective of its size – would have all of the following components to be both informative and transparent, holding the relevant parties accountable: 1) global appreciation of each concern and how it impacts the integrity of the paper, or its data; 2) an understanding of how the concerns came to light; 3) dates of any and all communication between all relevant parties; 4) outcomes of queries and – where possible – perspectives and responses of authors and editors.

4 Study limitation

This research note has a limitation, having focused on only one cancer-related journal (*CB&R*), and only on 23 retractions and their associated RNs.

Author contributions

Jaime A. Teixeira da Silva (jaimetex@yahoo.com) and Serhii Nazarovets (serhii.nazarovets@gmail.com) contributed equally to this work.

References

Bhatt, B. (2021). A multi-perspective analysis of retractions in life sciences. *Scientometrics*, 126(5), 4039–4054. https://doi.org/10.1007/s11192-021-03907-0

CB&R (*Cancer Biotherapy and Radiopharmaceuticals*). (2022). Manuscript Submission Guidelines and Policies for *Cancer Biotherapy and Radiopharmaceuticals*. https://home.liebertpub.com/publications/cancer-biotherapy-and-radiopharmaceuticals/8/for-authors. Last accessed: July 10, 2022

COPE & STM. Paper Mills — Research report from COPE & STM — English (Version 1: June 2022). https://doi.org/10.24318/jtbG8IHL. Last accessed: March 24, 2023

Dal-Ré, R., & Ayuso, C. (2021). For how long and with what relevance do genetics articles retracted due to research misconduct remain active in the scientific literature. *Accountability in Research*, 28(5), 280–296. https://doi.org/10.1080/08989621.2020.1835479

De Cassai, A., Geraldini, F., De Pinto, S., Carbonari, I., Cascella, M., Boscolo, A., Sella, N., Monteleone, F., Cavaliere, F., Munari, M., Garofalo, E., & Navalesi, P. (2022). Inappropriate citation of retracted articles in anesthesiology and intensive care medicine publications. *Anesthesiology*, 137(3), 341–350. https://doi.org/10.1097/ALN.0000000000004302

Else, H. & Van Noorden, R. (2021). The fight against fake-paper factories that churn out sham science. *Nature*, 591, 516–519. https://www.nature.com/articles/d41586-021-00733-5

Errington, T. M., Mathur, M., Soderberg, C. K., Denis, A., Perfito, N., Iorns, E., & Nosek, B. A. (2021). Investigating the replicability of preclinical cancer biology. *eLife*, 10, e71601. https://doi.org/10.7554/eLife.71601

Hamilton, D. G. (2019). Continued citation of retracted radiation oncology literature – do we have a problem? *International Journal of Radiation Oncology*Biology*Physics*, 103(5), 1036–1042. https://doi.org/10.1016/j.ijrobp.2018.11.014

Hsiao, T. K., & Schneider, J. (2022). Continued use of retracted papers: Temporal trends in citations and (lack of) awareness of retractions shown in citation contexts in biomedicine. *Quantitative Science Studies*, 2(4), 1144–1169. https://doi.org/10.1162/qss_a_00155

Liu, X. M., & Chen, X. T. (2021). Authors' noninstitutional emails and their correlation with retraction. *Journal of the Association for Information Science and Technology*, 72(4), 473–477. https://doi.org/10.1002/asi.24419

Pantziarka, P., & Meheus, L. (2019). Journal retractions in oncology: a bibliometric study. *Future Oncology*, 15(31), 3597–3608. https://doi.org/10.2217/fon-2019-0233

Retraction Watch. (2021). Here's what happened when a publisher looked more closely at a paper milled paper. https://retractionwatch.com/2021/10/06/heres-what-happened-when-a-publisher-looked-more-closely-at-a-paper-milled-paper/. October 6, 2021. Last accessed: March 24, 2023

Retraction Watch. (2022). Retraction database. Version: 1.0.6.0. http://retractiondatabase.org/RetractionSearch.aspx#?jou%3dCancer%2bBiotherapy%2band%2bRadiopharmaceuticals. Last accessed: July 10, 2022

Rivera, H., & Teixeira da Silva, J. A. (2021). Retractions, fake peer review, and paper mills. *Journal of Korean Medical Science*, 36(24), e165. https://doi.org/10.3346/jkms.2021.36.e165

Sharma, K. (2021). Team size and retracted citations reveal the patterns of retractions from 1981 to 2020. *Scientometrics*, 126(10), 8363–8374. https://doi.org/10.1007/s11192-021-04125-4

Teixeira da Silva, J. A. (2021). Paper mill-derived cancer research: The improbability of prostate cancer in women, and ovarian and breast cancer in men. *Nowotwory Journal of Oncology*, 71(4), 255–256. https://doi.org/10.5603/NJO.a2021.0039

Teixeira da Silva J. A. (2022a). Issues and challenges to reproducibility of cancer research: A commentary. *Future Oncology*, 18(12), 1417–1422. https://doi.org/10.2217/fon-2021-1378

Teixeira da Silva J. A. (2022b). A dangerous triangularization of conflicting values in academic publishing: ORCID, fake authors, and the lack of criminalization of the creators of fake elements. *Epistēmēs Metron Logos*, 7, 1–10. https://doi.org/10.12681/eml.27238

Teixeira da Silva, J. A., & Vuong, Q-H. (2022). Fortification of retraction notices to improve their transparency and usefulness. *Learned Publishing*, 35(2), 292–299. https://doi.org/10.1002/leap.1409

Tumor Biology. (2022). Author Guidelines. https://www.iospress.com/catalog/journals/tumor-biology. Last accessed: March 24, 2023

Xu, S. X., & Hu, G. W. (2022). Non-author entities accountable for retractions: A diachronic and cross-disciplinary exploration of reasons for retraction. *Learned Publishing*, 35(2), 261–270. https://doi.org/10.1002/leap.1445

Zhao, T. Y., Dai, T. C., Lun, Z. J., & Gao, Y. L. (2021). An analysis of recently retracted articles by authors affiliated with hospitals in mainland China. *Journal of Scholarly Publishing*, 52(2), 107–122. https://doi.org/10.3138/jsp.52.2.03

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Original DOI	Retraction notice DOI	Web of Science Core Collection	Scopus	Google Scholar	Retraction date	Cited after retraction		
						Web of Science Core Collection	Scopus	Google Scholar
https://doi.org/10.1089/cbr.2014.1698	https://doi.org/10.1089/cbr.2014.1698.retract	22	18	25	6 Dec 2021	0	1	2
https://doi.org/10.1089/cbr.2014.1723	https://doi.org/10.1089/cbr.2014.1723.retract	13	10	15	1 Dec 2017	6	4	5
https://doi.org/10.1089/cbr.2014.1728	https://doi.org/10.1089/cbr.2014.1728.retract	11	8	12	12 Nov 2021	0	0	0
https://doi.org/10.1089/cbr.2014.1759	https://doi.org/10.1089/cbr.2014.1759.retract	19	18	31	6 Dec 2021	1	2	4
https://doi.org/10.1089/cbr.2014.1766	https://doi.org/10.1089/cbr.2014.1766.retract	9	8	9	1 Dec 2017	4	4	4
https://doi.org/10.1089/cbr.2014.1778	https://doi.org/10.1089/cbr.2014.1778.retract	9	6	10	12 Nov 2021	1	1	1
https://doi.org/10.1089/cbr.2015.1952	https://doi.org/10.1089/cbr.2015.1952.retract	10	9	14	10 May 2022	0	0	1
https://doi.org/10.1089/cbr.2017.2306	https://doi.org/10.1089/cbr.2017.2306.retract	36	30	43	6 Sep 2021	8	7	11
https://doi.org/10.1089/cbr.2017.2386	https://doi.org/10.1089/cbr.2017.2386.retract	22	22	27	23 Jul 2021	2	4	4
https://doi.org/10.1089/cbr.2017.2432	https://doi.org/10.1089/cbr.2017.2432.retract	28	30	30	6 Dec 2021	1	1	2
https://doi.org/10.1089/cbr.2018.2545	https://doi.org/10.1089/cbr.2018.2545.retract	2	3	3	6 Dec 2021	0	0	0
https://doi.org/10.1089/cbr.2018.2625	https://doi.org/10.1089/cbr.2018.2625.retract	19	16	28	23 Jul 2021	3	3	3
https://doi.org/10.1089/cbr.2018.2626	https://doi.org/10.1089/cbr.2018.2626.retract	7	6	11	6 Sep 2021	3	3	4
https://doi.org/10.1089/cbr.2018.2664	https://doi.org/10.1089/cbr.2018.2664.retract	14	10	15	6 Sep 2021	3	3	5
https://doi.org/10.1089/cbr.2018.2749	https://doi.org/10.1089/cbr.2018.2749.retract	8	7	12	13 Oct 2021	1	1	3
https://doi.org/10.1089/cbr.2019.2858	https://doi.org/10.1089/cbr.2019.2858.retract	15	15	22	13 Oct 2021	6	7	7
https://doi.org/10.1089/cbr.2019.2983	https://doi.org/10.1089/cbr.2019.2983.retract	5	4	6	13 Oct 2021	2	2	3
https://doi.org/10.1089/cbr.2019.3070	https://doi.org/10.1089/cbr.2019.3070.retract	16	17	23	6 Sep 2021	4	4	5
https://doi.org/10.1089/cbr.2019.3275	https://doi.org/10.1089/cbr.2019.3275.retract	3	0	3	13 Oct 2020	2	0	2
https://doi.org/10.1089/cbr.2019.3299	https://doi.org/10.1089/cbr.2019.3299.retract	2	2	3	13 Oct 2021	1	1	3
https://doi.org/10.1089/cbr.2019.3520	https://doi.org/10.1089/cbr.2019.3520.retract	10	8	16	12 Nov 2021	3	3	5
https://doi.org/10.1089/cbr.2019.3535	https://doi.org/10.1089/cbr.2019.3535.retract	6	5	6	13 Oct 2021	2	2	2
https://doi.org/10.1089/cbr.2020.3563	https://doi.org/10.1089/cbr.2020.3563.retract	1	1	1	13 Oct 2020	1	1	1