

Opinion  
Editing, Writing & Publishing



# Retractions, Fake Peer Reviews, and Paper Mills

Horacio Rivera <sup>1</sup> and Jaime A. Teixeira da Silva<sup>2</sup>

<sup>1</sup>Departamento de Biología Molecular y Genómica, Centro Universitario de Ciencias de la Salud, Universidad de Guadalajara, Guadalajara, Mexico

<sup>2</sup>Independent Researcher, Ikenobe, Japan



Received: May 4, 2021

Accepted: May 25, 2021

**Address for Correspondence:**

**Horacio Rivera, MD**

Departamento de Biología Molecular y Genómica, Centro Universitario de Ciencias de la Salud, Universidad de Guadalajara, Sierra Mojada 950, C.P. 44340, Guadalajara, Mexico.  
E-mail: horacio.rivera@academicos.udg.mx

**Jaime A. Teixeira da Silva, PhD**

Teixeira da Silva, PhD. P. O. Box 7, Ikenobe 3011-2, Kagawa-ken 761-0799, Japan.  
E-mail: jaimetex@yahoo.com

© 2021 The Korean Academy of Medical Sciences.

This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<https://creativecommons.org/licenses/by-nc/4.0/>) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

**ORCID iD**

Horacio Rivera   
<https://orcid.org/0000-0001-6940-0668>

**Disclosure**

The second author has written about, and been written about, Retraction Watch, whose activity is described in this paper. Other than that, the authors declare no conflicts of interest of relevance to this topic.

**Author Contributions**

Conceptualization: Rivera H, Teixeira da Silva JA. Investigation: Rivera H, Teixeira da Silva

## Introduction

Retractions across the world are unevenly distributed and increasingly related to misconduct.<sup>1,2</sup> We focus here on the rise of retractions related to fake peer review (FPR) and manuscripts forged by paper mills. In addition, we advance some strategies to fight against such fakes and foster academic integrity.

## Retractions around the World

A map of retractions relative to the number of publications disclosed that, among countries with at least 100,000 papers published in the period 2003–2016, and according to the rate of retractions per 10,000 articles, the figures for the top eight countries ranged from 14.0‰ for Iran to 5.0‰ for China and Turkey; with one exception (Romania), all these are Asian countries.<sup>1</sup> In another study that retrieved 2,087 articles retracted from Web of Science's journals during 1978–2013, the five countries with the greatest rate of retractions per 10,000 articles were Egypt (3.04‰), Iran (2.95‰), South Korea (2.19‰), China (2.16‰), and India (1.93‰); for comparison, the respective figures for the USA and UK were 0.68‰ and 0.53‰, respectively.<sup>2</sup> In terms of individual researchers, it is remarkable that only 500 out of more than 30,000 authors of retracted papers accounted for a quarter of about 10,500 retractions analyzed in 2018.<sup>3</sup>

A PubMed search spanning the period 2013–2016 identified 1,082 retracted articles among 4,384,945 papers, i.e., there were 2.5 retractions per 10,000 publications.<sup>4</sup> In that study, the five countries with the highest retraction rates were Iran (15.52‰), Egypt (11.75‰), China (8.26‰), India (6.67‰), and Malaysia (3.51‰); in contrast, the respective figures for USA, Canada, and the UK were 1.92‰, 0.89‰, and 0.87‰, respectively. Of significance, the former countries (except for Egypt) also led the ranking by retractions due to manipulated or FPR. A more recent inquiry (search date: August 26, 2019) in the same database documented 6,936 retractions and an overall retraction rate per 10,000 publications of 0.38 in 1985, 2.03 in 2000, and 5.95 in 2014, with Iran (up to 14.0‰), Tunisia (up to 12.0‰), Pakistan (up to 10.0‰), Bangladesh (up to 10.0‰), and India (up to 10.0‰) having the highest rates.<sup>5</sup> This investigation did not explore the underlying reasons but highlighted the disruptive potential of retracted clinical trials and medical treatments.











