

Jana Christopher

Publication Ethics: Reading, reviewing, citing and publishing trustworthy papers



Reliable literature

- How many papers do you read every week/month?
- Are you confident that what you are reading is genuine?
- Features of trustworthy versus problematic research articles
 - Image Integrity
 - Paper mills
 - Predatory publishers

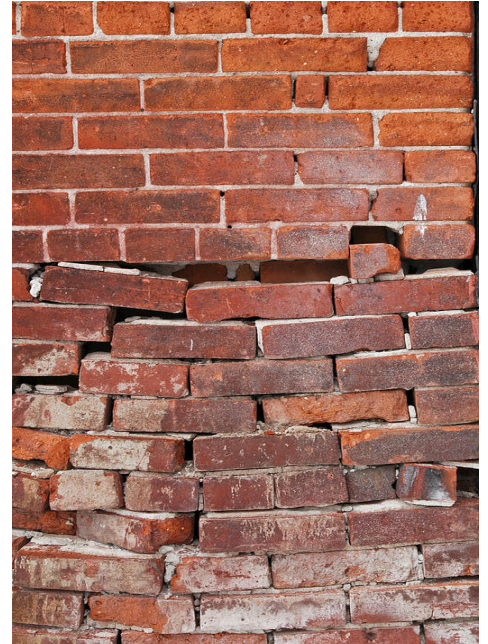


Image Integrity - Illustrations vs Data



wallpaperaccess.com/biology-art

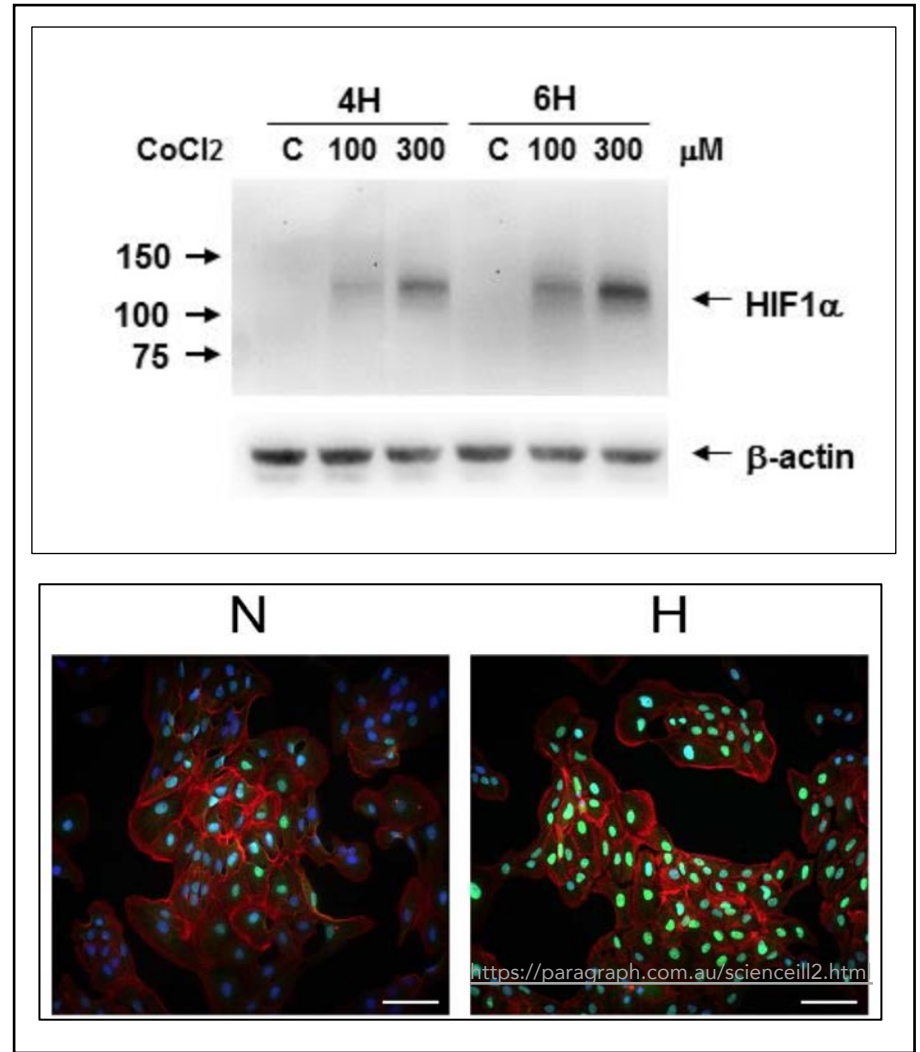


Image types

- Western blots and gels
- Microscopy images
- Photographs of animals, plants, tumors etc
- Plots
- Graphs

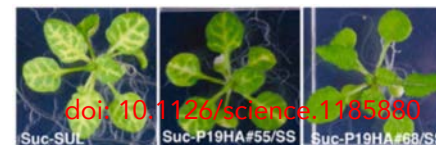
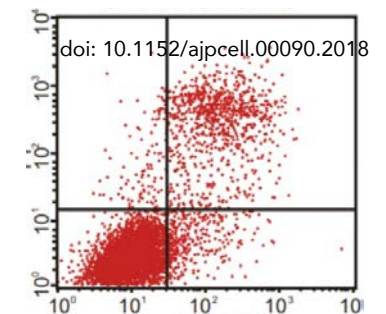
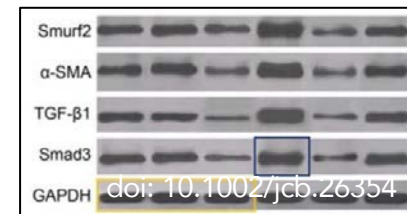
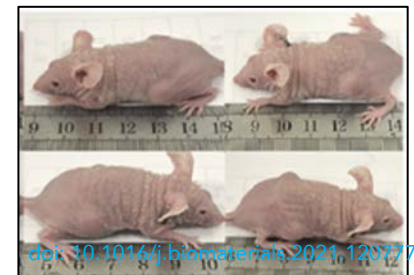
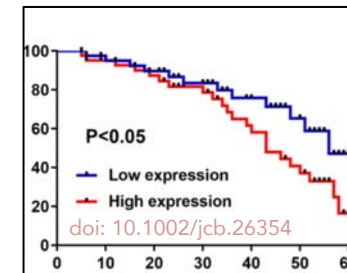
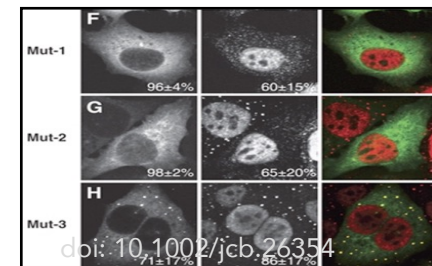
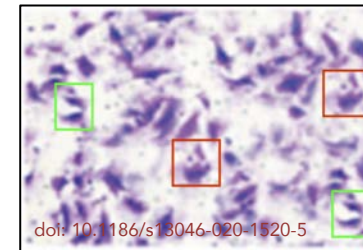
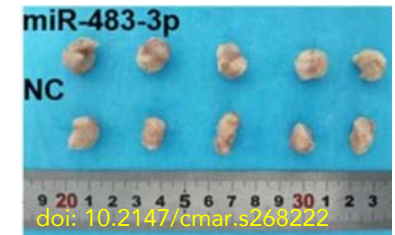
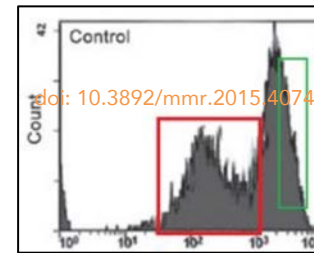


Image problems are more frequent than you think

At least 4-6% of Biomedical Research papers have inappropriately duplicated images
(Bik et al, doi: 10.1128/MCB.00309-18, doi: 10.1128/mBio.00809-16)

Plus other problems

- Inappropriate processing
- manipulations
- wrong images shown
- indetectable errors

Image problems are a *potential indicator* of illegitimate scientific conduct.
so conscientious journals check for this

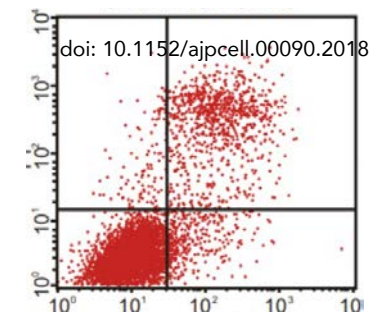
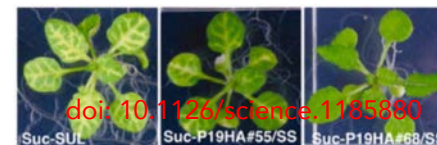
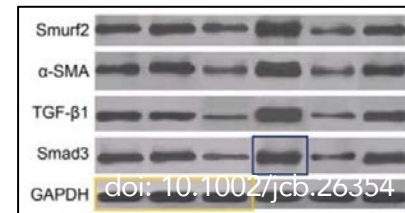
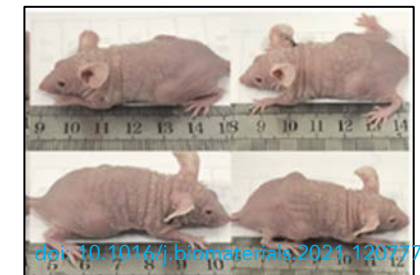
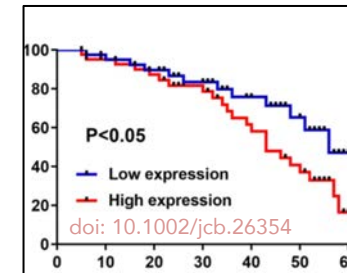
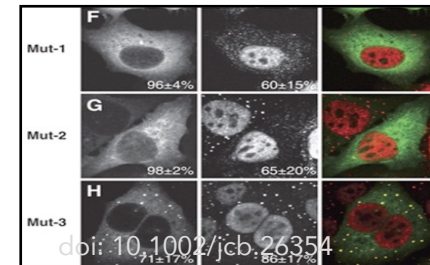
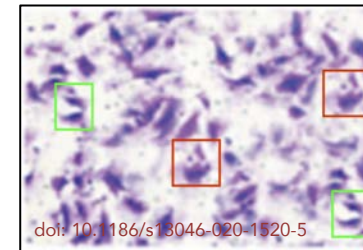
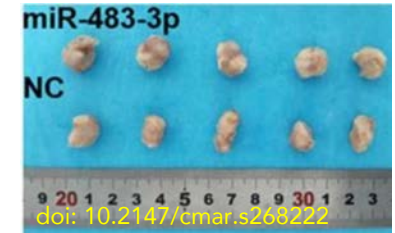
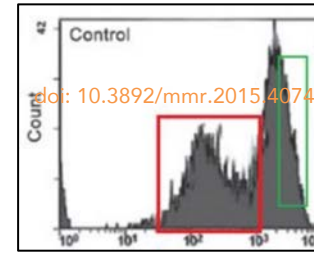


Image duplication

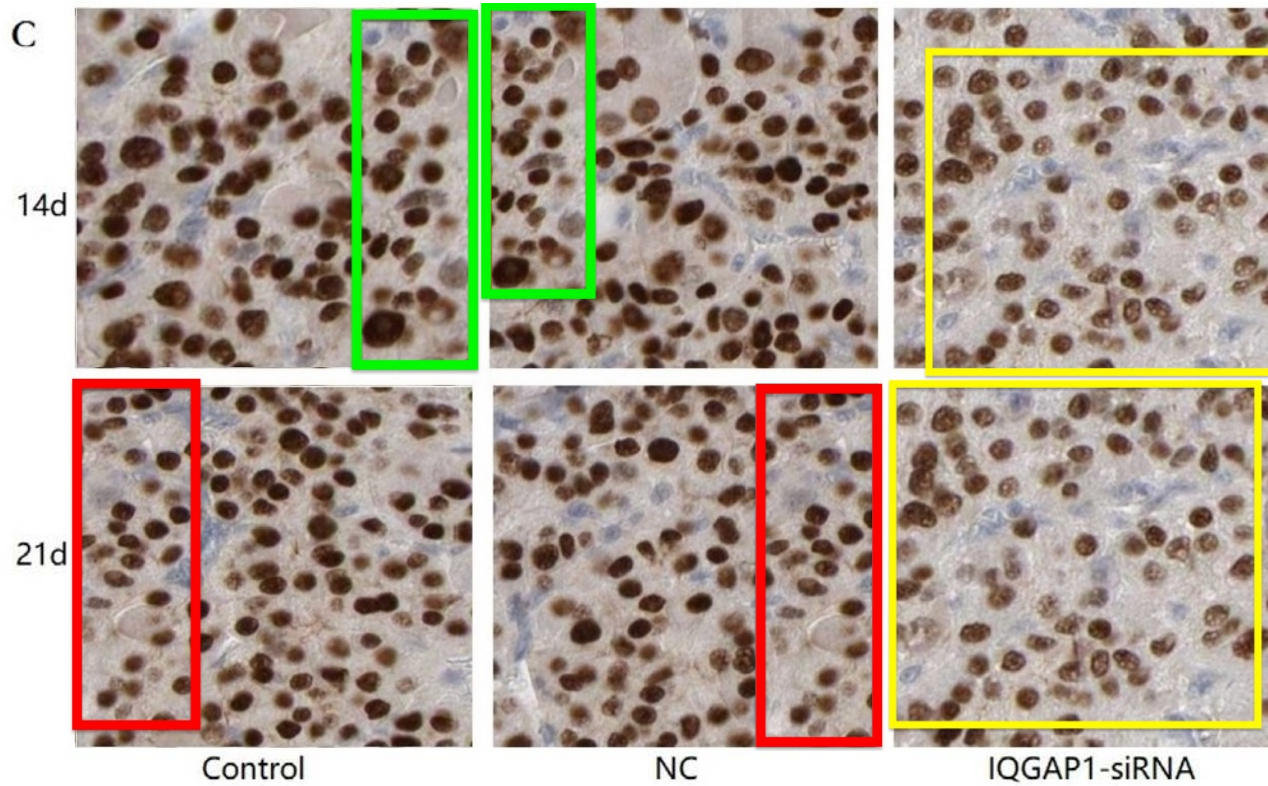


Image duplication

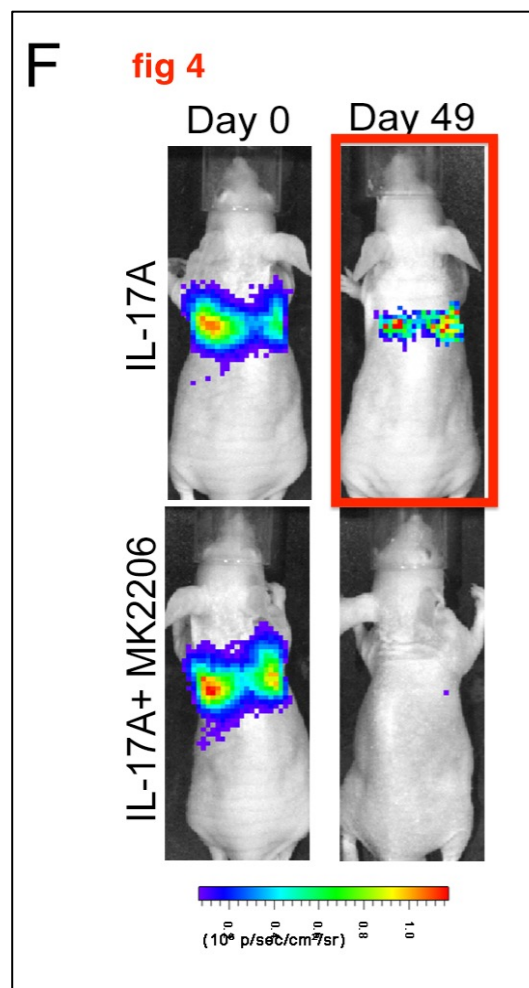
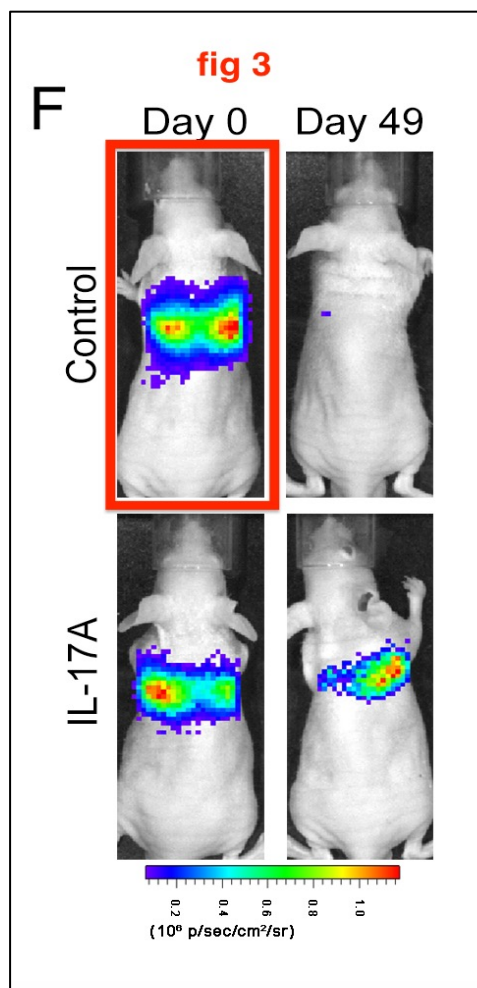
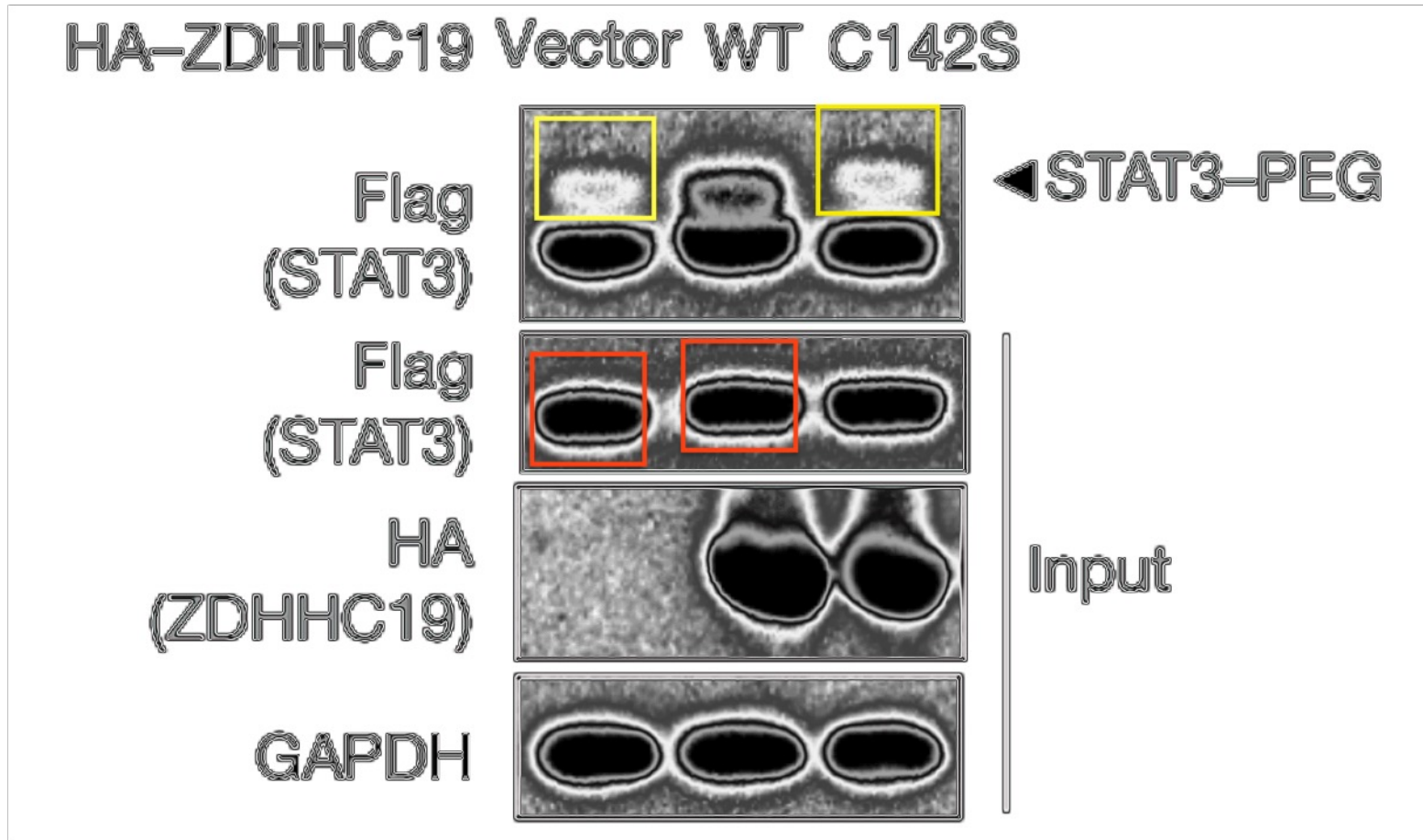
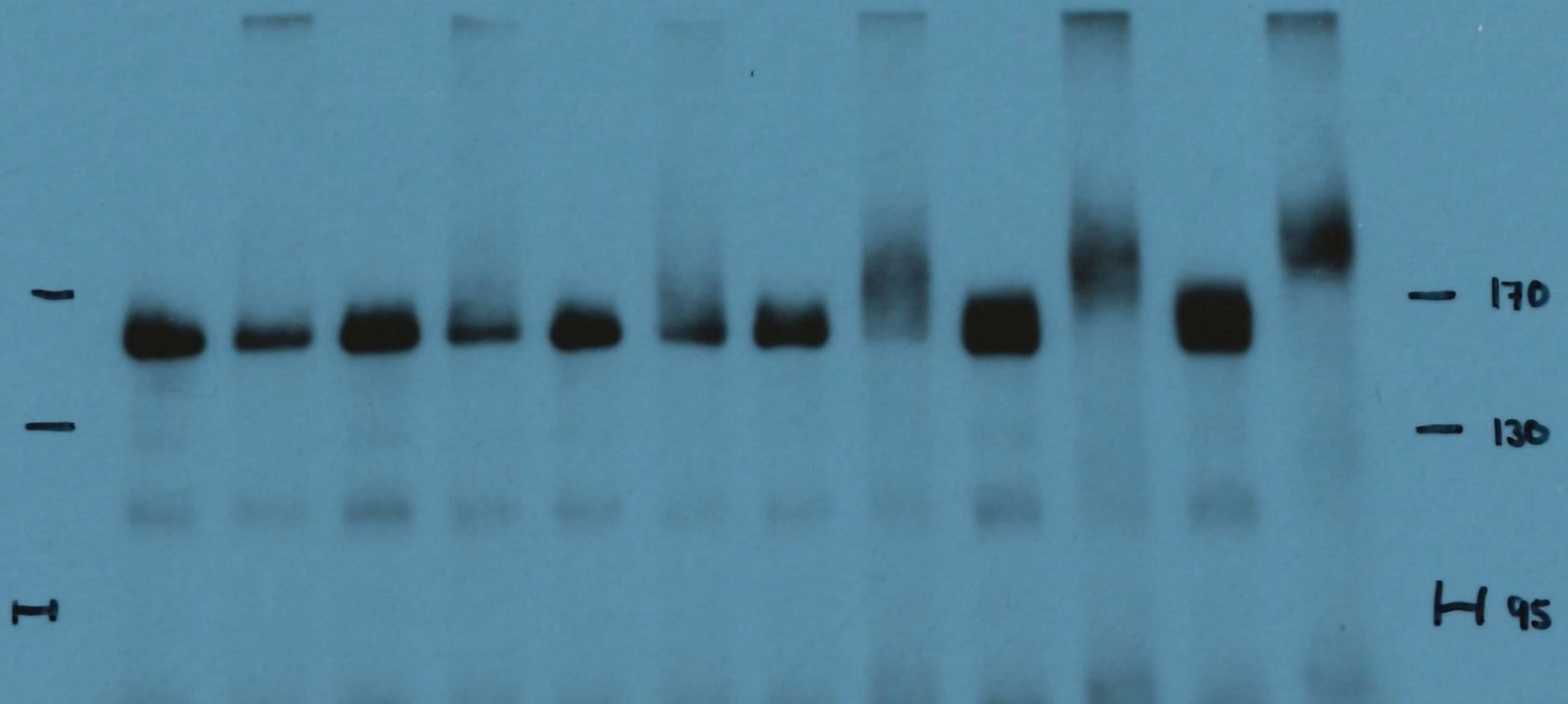


Image manipulation



Cloning





"Your X-ray showed a broken rib, but we fixed it in Photoshop"

Why are image-related problems so frequent?

- General **lack of knowledge** of what is appropriate
- Lack of supervision
- **Pressure** to present specific results, time pressure
- Bad record-keeping
- Failure to keep a copy of the original image file/raw data
- Negligence, **sloppiness**, tiredness
- Self-deception

The “What-the-Hell-Effect”

https://youtu.be/XBmJay_qdNc

The **what-the-hell effect** is the feeling you get when you’ve crossed ethical boundaries and feel that since you’ve already failed your principles, you might as well fail spectacularly.

We rationalize our behavior, to justify cheating a little bit while still feeling good about ourselves.

Dan Ariely, Prof of Psychology and Behavioral Economics at Duke

Individual misconduct



http://undsci.berkeley.edu/images/us101/misconduct_cartoon.gif

- Individual researcher/author falsifying results
- Illegitimate figure preparation is an indicator for potential scientific misconduct
- Many possible motives

Paper mills



<https://science.sciencemag.org/content/342/6162/1035>

- Companies that produce and sell scientific papers at demand, data included in these papers are often falsified or fabricated.
- Images and other data might be sold to multiple authors to represent different experiments.

Report from COPE and STM



- Analysed data on over 53,000 papers across six publishers and spanning a wide range of subject areas
- **Percentage of suspect papers** submitted to journals ranges from **2- 46%.**

<https://doi.org/10.24318/jtbG8IHL>

We have published more than 4,000 articles (more than 20,000 scientists) in Scopus and Web of Science in 5 years.

Languages we speak:   [Darya]  [Yu Long]  [Amir]  [Anh]  [Mais]  [Aruzhan]  [Darya] [Contacts](#)

Our satisfied customers will recommend us, you can call them.

We have more than 50 completed contracts with universities and research institutes, you can see them in the office.

We are the ONLY one on the market who can handle large volumes – up to 400 articles per month.

We are NOT CHEAP, because WE GUARANTEE publication and indexing by 100%.

We offer about 100 "cool" magazines rated Q2 and Q1. There are even more Q3-Q4 magazines.

[Our Story](#) [Hard Facts About Us](#) [Scammers](#) [Jobs](#) [Our Reviewers](#) [Pricing](#) [Options](#) [Articles](#) [Instant Communication](#)

Others promise, take the money and disappear. We make quality articles, publish and index them 100% of the time.



<http://123mi.ru/>

Retractionwatch identified nearly 200 published articles that may have been brokered through this paper mill and which cross disciplines including (but not limited to) humanities, social sciences, nursing, and education. They also observed numerous papers on COVID-19 that have been or currently are advertised for sale.

Order #757

Issue of the journal (articles): **March 2023**

Recruitment to the journal until **15-02-2022** There are 4 authors
in this article . The cost is from **57400** rubles.

Close page

Article topic / Topic of the article:

Treatment of patients with chronic heart failure

treatment of patients with chronic heart failure

Buy 1st place - 86100 rub. - Free

Dog

Buy 2nd place - 77080 rub. - Free

Dog

Buy 3rd place - 67240 rubles. - Free

Dog

Buy 4th place - 57400 rub. - Free

Dog

Key words / Key words:

oxidative stress, hypoxen, chronic heart failure, lipid peroxidation.

Scopus

Q3

Percentile 30..49

Medicine

Pharmaceutics

Cardiology

and Cardiovascular Medicine

Abstract / Annotation:

Heart failure is a progressive syndrome characterized by reduced physical activity, respiratory failure, fatigue, and reduced quality of life. The results of various studies in the field of cardiovascular diseases have identified oxidative stress as an important pathophysiological pathway in the development and progression of heart failure. Oxidative stress is defined as an imbalance between the production of reactive oxygen species (ROS) and the endogenous antioxidant defense system. ROS that are actively produced disrupt the biological membrane, proteins, enzymes, and nucleic acids. This leads to pathological changes. Hypoxen is one of the drugs that can affect oxidative stress. Based on previous observations, we conclude that there are no studies

The purpose of this study is to evaluate markers of oxidative stress in patients with CHF before and after treatment with hypoxen, namely the blood levels of catalase, lipid peroxidation, superoxide dismutase, diene conjugates, malondialdehyde.

Close page

Home / Publications

Prophylactic versus Therapeutic Fingolimod: Restoration of Presynaptic Defects in Mice Suffering from Experimental Autoimmune Encephalomyelitis

PLoS ONE (2017) - 3 Comments

pubmed: 28125677 doi: 10.1371/journal.pone.0170825 issn: 1932-6203

Tommaso Bonfiglio, Guendalina Olivero, Elisa Merega, Silvia Di Prisco, Cristina Padolecchia, Massimo Grilli, Marco Milanese, Lorenzo Di Cesare Mannelli, Carla Ghelardini, Giambattista Bonanno, Mario Marchi, Anna Pittaluga

Go to article

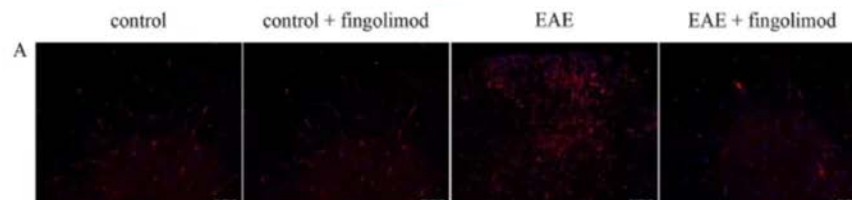
Get alerts for new activity

Authors emails

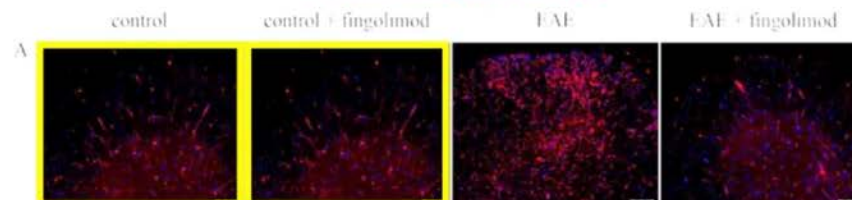
#1 *Aneurus inconstans* commented April 2023

Figure 7A: image duplication (yellow boxes). Could the authors please check?

Figure 7A



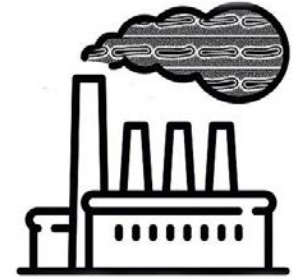
enhanced contrast/brightness version of 7A



report permalink

Reply

Paper mill – why do they exist?



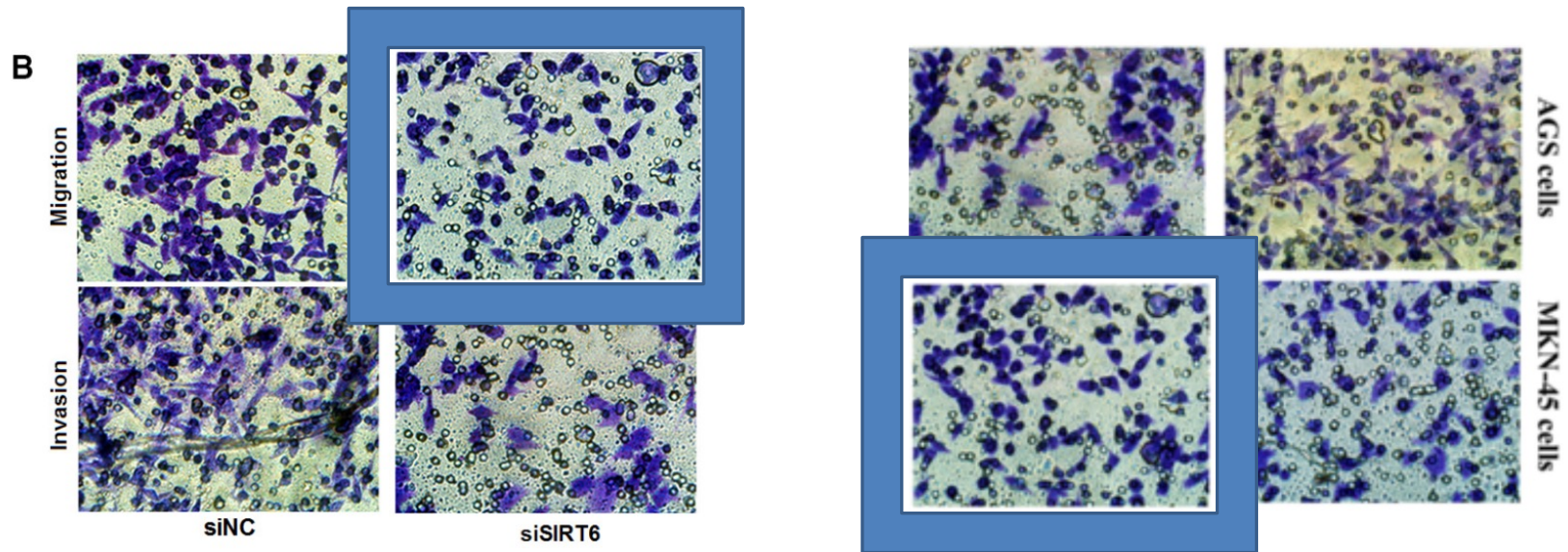
In August 2020, the Beijing municipal health authority published a policy:

An attending physicians wanting to be promoted to

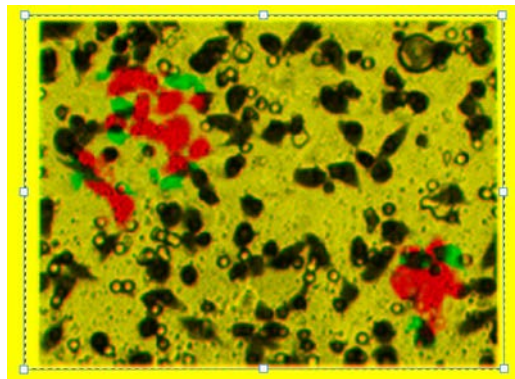
deputy chief physician	2 first-author papers
------------------------	-----------------------

chief physician	3 first-author papers
-----------------	-----------------------

The paper mill industry caters for these physicians

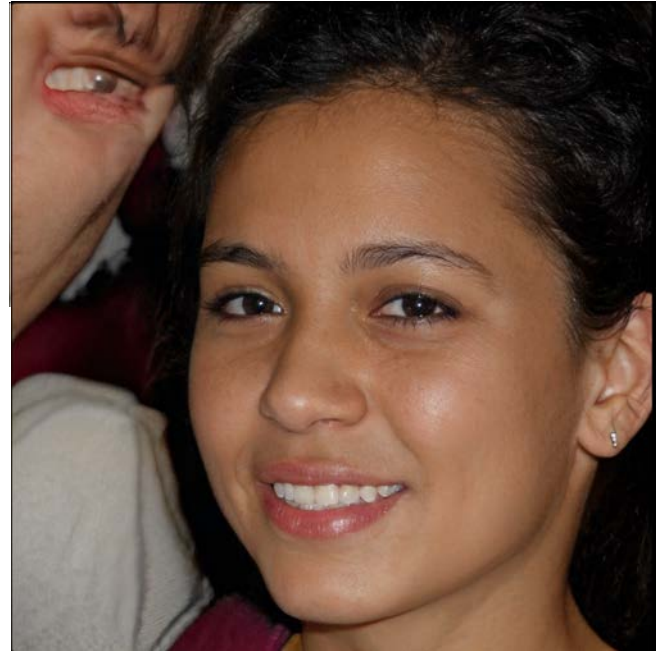


FEBS Openbio, Lin et al (2017)



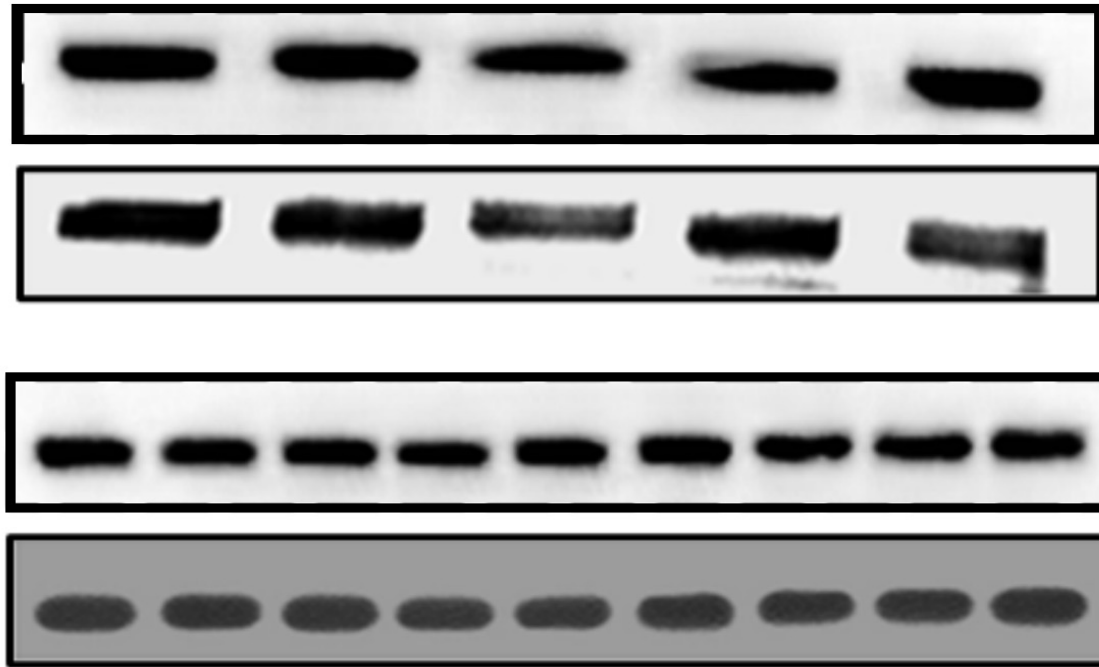
Molecular Cancer, Huang et al. (2014)

Deep fakes - AI technology (GANs)
that generates fake images which are next to impossible to detect by eye alone



<https://this-person-does-not-exist.com/en>

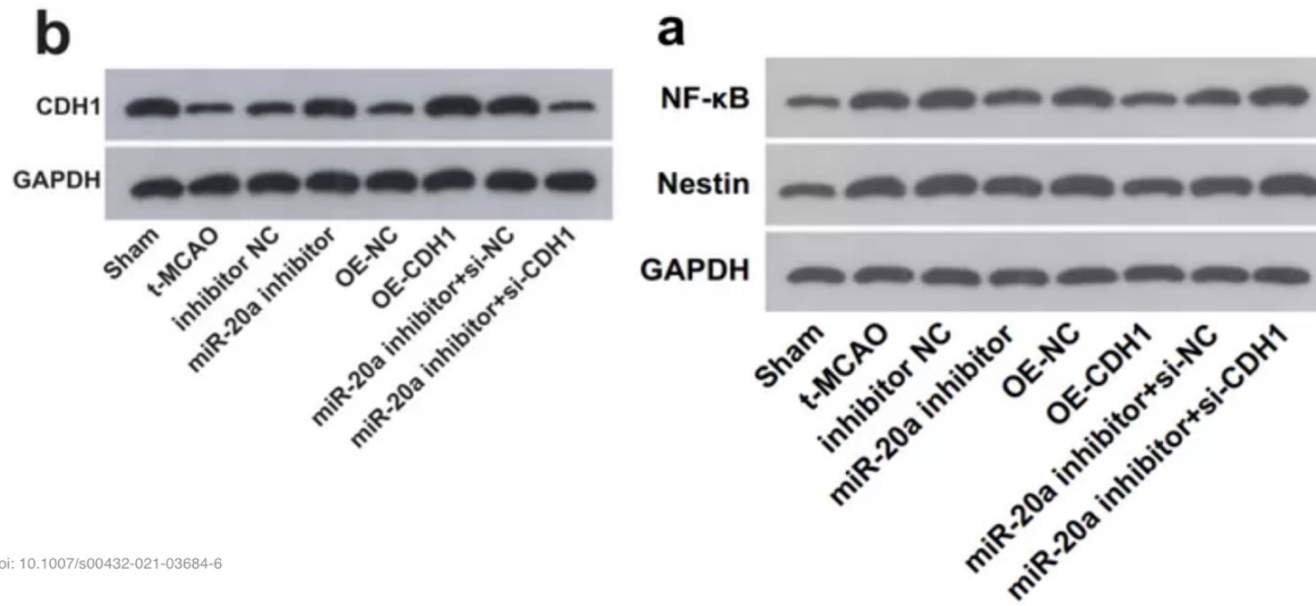
Deep fakes - AI technology (GANs)
that generates fake images which are next to impossible to detect by eye alone



<https://www.advancedsciencenews.com/image-fraud-gets-a-boost-from-ai/>
<https://www.biorxiv.org/content/10.1101/2020.11.24.395319v2.full>

Forensic Analysis of Synthetically Generated Western Blot Images

Same-style images across multiple manuscripts



doi: 10.1007/s00432-021-03684-6

Predatory publishers

exploit the open-access scholarly model by
charging high APCs
without scientific rigour and ethical processes offered by legitimate journals

Common characteristics include

- inappropriate marketing/targeting individuals with solicitation emails,
- inadequate peer-review processes,
- lack of editorial services and transparency about APCs,
- false claims about citation metrics and indexing that cannot be verified.
- authors required to sign away copyright at submission

Proceed with caution when receiving solicitation emails
and if in doubt, follow the ***Think, Check, Submit*** checklist.

<https://thinkchecksubmit.org>



Illustration by David Parkins

What you can do - Summing up



- Read the literature **critically**
- Educate yourself about science fraud
- When reviewing manuscripts, **consider the figures**
- Adhere to guidelines and standards with your own work
- Beware of predatory publishers
- Establish a **culture of honesty and trust in the lab**,
work closely with primary data
- **Educate** young scientists well – training, supervision, mentoring



Integrity is doing the right thing,
even when no one is watching.

C. S. Lewis

Thank you

Jana Christopher, M.A.

Founder

Image-Integrity

The Royal Society

RSC

SpringerNature

STM

Frontiers

NTU and A*Star Singapore

eLife

Image Data Integrity Analyst

FEBS Press

The FEBS Journal

FEBS Letters

Molecular Oncology

FEBS Open Bio

<https://image-integrity.com>

 @Image_Integrity