

# Research Integrity and Image Forensics

## Ensure Early Detection of Threats Including Image Manipulation, Paper Mills, and AI-Generated Content



### Safeguarding Research Integrity

The rising demands on researchers to publish, fueled by competition for funding and the expanding global research landscape, present a mounting challenge for publishers. In this dynamic environment, the proliferation of digital tools further complicates matters as journals strive to attract top-tier authors and reviewers.

### Detect Misconduct and Ensure Quality

KnowledgeWorks Global Ltd. is committed to proactively developing and continuing to invest in the creation of industry-leading technologies and services for the early detection of a range of threats. By combining experience and support from peer review through content preparation and electronic deliverables, we have developed technologies and content solutions to safeguard research integrity.

Standard procedure for our global peer review team includes checks for a variety of risks:

- ✓ Author verification
- ✓ Institution verification
- ✓ Conflict-of-interest checks
- ✓ Unusual activity detection
- ✓ Plagiarism checks
- ✓ Data repository vetting
- ✓ Image, video, audio file checks
- ✓ Ethics and reporting standards

To help publishers further extend their teams for audit processes and investigations, a premium Research Integrity Service is offered that includes the following advanced checks:

- ✓ Automated institution checks
- ✓ Duplicate submissions
- ✓ Paper mills
- ✓ Tortuous, AI-generated phrases
- ✓ Ethical issues investigation and resolution

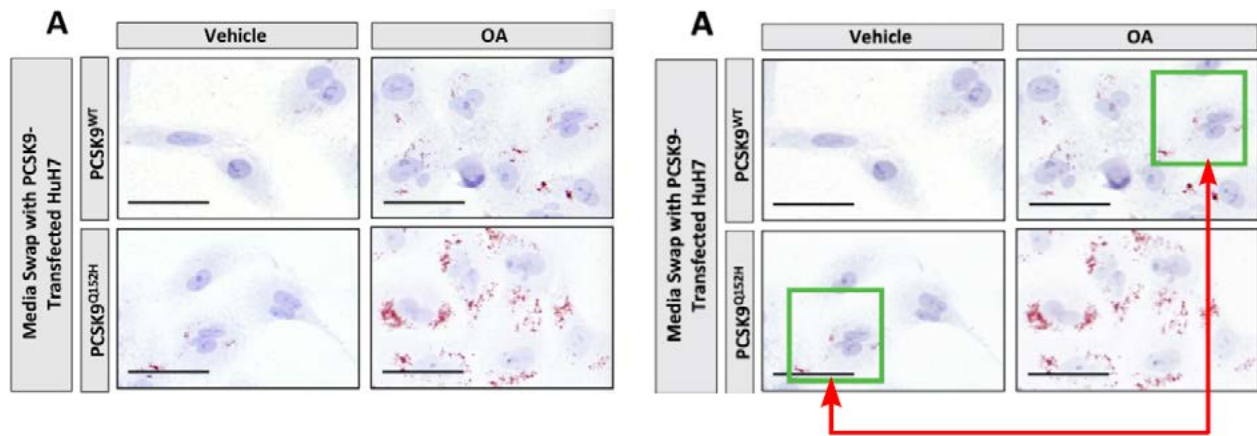


## Identify Image Manipulation

KGL's Image Forensics solution takes the guesswork out of image integrity by evaluating images for suspect manipulation. The process uses specialized image analysis techniques to detect image manipulation or duplication in supplied grayscale or color halftone images.

### Keeping It Real

Our graphics and image forensics specialists preflight and analyze all eligible images submitted with a manuscript and generate a report that identifies and explains any suspect or obvious image manipulation. The report is then sent immediately to the publisher for their staff to evaluate the results and then follow their established integrity protocols. The reports are presented as a PDF with "before" and "after" images, including a magnified image of the suspect area. We also use red zones to identify the suspect areas and insert descriptions to explain the items in question. Links to the high-resolution images are provided to the publisher for more in-depth review purposes.



KGL's methods for performing image forensics on submitted images have been refined from almost 20 years of experience in this field of analysis. Our current techniques include a combination of carefully chosen software-based solutions, like ImageTwin for image duplication detection, and a series of advanced visual checks by highly trained graphics specialists to flag other suspect manipulation.

We continue to research and add software-based solutions to our process as the explosive growth of AI generative tools introduces new challenges for the image forensics service. Publishers can trust that KGL's image forensics experts are working to stay ahead of the curve when it comes to image integrity and helping to protect the business and reputation of our clients.

**To find out more about developments in our pipeline and how KGL can help you protect the integrity of your journal content, please contact us.**