Journal editors weigh in on AI in science publishing

July 24 2023

Credit: Unsplash/CC0 Public Domain

Last week, the *Journal of Biological Chemistry (JBC)* published an editorial to define appropriate and inappropriate uses of artificial intelligence technology in the "preparation and review of manuscripts being considered for publication."

The editorial states that AI technology:

- Can be used to prepare manuscript text to improve clarity
- Cannot be listed as an author on a manuscript
- Cannot be used in any part of the review process

Roger Colbran, a professor of molecular physiology and biophysics at Vanderbilt University School of Medicine and an associate editor of the JBC, authored the editorial with Editor-in-Chief Alex Toker of Beth Israel Deaconess Medical Center and Harvard Medical School.

"The rapid development and continued evolution of AI-based tools makes it hard to get a handle on their limitations in real-life use," Colbran said. "These uncertainties make it important for the publishing industry, including the *JBC*, to define clear policies surrounding the acceptable and unacceptable uses of current AI-based technologies, with a clear understanding that they will need to be regularly updated as the technologies are further developed."

The editorial acknowledges the potential benefits that AI technology may provide to non-native English speakers preparing manuscripts for submission, stating that the *JBC* will "welcome authors to make use of generative AI technologies in editing the text of their manuscript, in much the same way that authors may make use of more traditional editing services." If AI is used for the editing of a manuscript, it must be included in the acknowledgements section of the manuscript, the editorial says.

"AI-driven tools have the potential to significantly reduce the amount of time and effort that scientists must dedicate to writing essentially any documents, be they research articles, reviews, book chapters, grants, or manuscript/grant critiques," Colbran said. "There are also benefits in allowing scientists to rapidly learn about new areas of science. This could drive an increase in the overall efficiency of the entire research enterprise by allowing researchers to dedicate more time to doing actual

science."

Finally, the editorial states that AI may not be used for manuscript review, such as during the writing of manuscript critiques or decision letters. It points to the possibility that using AI may violate data privacy rights and cites published concerns about the confidentiality. Uploading a manuscript to a public AI tool may allow "retained conversations to be accessed by their AI trainers to improve future performance," it says.

"There are significant concerns about the confidentiality of any information that is provided to these systems," Colbran said. "Additional generative AI tools are being rapidly developed to 'create' raw image data, potentially including gels, blots and micrographs. Such synthesized data may be very hard to detect using the image analysis pipelines currently used by journals and publishers."