



Why *STAR Protocols* authors make excellent protocol reviewers

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SUMMARY

When researchers submit a protocol for peer review and publication, they receive feedback from reviewers to help improve the usability of the protocol. These authors can be the perfect peer reviewers helping propel research forward. They can use their technical expertise and sharpened writing skills to help improve the main aspects of published protocols, namely their clarity and reproducibility. This backstory chronicles the journey of Dr. Guillaume Blot, from a junior researcher and author to a protocol reviewer. For complete details, please refer to Blot et al. (2021).

Why did you decide to publish your protocol as an independent article rather than only report it in the method section of a research paper?

My doctoral project dealt with inflammation in diabetic retinopathy. We wanted to test the hypothesis that myeloid cells might not only be involved in the late stage of this disease associated with vascular proliferation but also in the early stage of the disease by participating in the initial vasodegeneration observed. However, the angiogenic assays that we routinely used in the lab, such as the mouse aortic ring assay and the rat aortic ring model, had limitations for the questions I needed to answer. They were mainly designed for testing new drug treatments, but we wanted to differentiate the angiostatic from the vasodegenerative process. Thus, I decided to modify the original protocol of Nicosia and Ottinetti (1990), allowing sprouts to grow for a few days before adding the conditioned medium. In the process of fine-tuning this modified protocol, I realized that a well-written protocol for studying vasodegeneration could be helpful for other researchers working on microvascular ischemic diseases even beyond the retina. I decided to submit to *STAR Protocols* to have a peer reviewed and published protocol (Blot et al., 2021; Figure 1). I wanted to ensure that my protocol was accessible to the research community. Of course, I also hoped it could help me build my CV and demonstrate my scientific contribution.

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What interested you originally in publishing in *STAR Protocols*?

As a young researcher, I would often try to reproduce published results from high-impact papers, but the methods sections in these papers can be overwhelming. I was just starting my career at the bench when Cell Press launched *STAR Methods* (Marcus and whole Cell team, 2016). In my experience, *STAR Methods* has helped me understand what is needed to reproduce an experiment. In early 2020, while looking for a journal to publish a protocol I developed during my doctoral project, I discovered *STAR Protocols*, which had recently launched. I quickly became fond of its innovative approach and author-friendly features. My supervisor, Xavier Guillonéau, and I decided to send a presubmission inquiry to *STAR Protocols*' editors to find out if our protocol would be of interest to the journal and its readers.

Tell us about your experience publishing with *STAR Protocols*.

We had great communication with the editorial team. The process from initial submission to final acceptance was very fast and efficient. The well-designed guidelines of the *STAR Protocols*, such

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Figure 1. Guillaume Blot with his recently published protocol.



as the author template and the Key Resources Table, made it easy for my colleague Thérèse-Marie Sartoris (the second author of the paper) and me to prepare the manuscript in a short time. This straightforward and efficient process is especially important for researchers: saving time on publishing protocols gives them more time to do the actual benchwork or data analysis. This practice can also help them manage their work-life balance (Bartlett et al., 2021).

Why is it important for protocols to be peer reviewed?

Many researchers acknowledge the problems with reproducibility in science (Baker, 2016). Reproducing a study always starts with understanding its protocol and replicating its methods. However, methods are not the most exciting part of a scientific paper and are often left out. Some journals have strict word limits, and authors will usually cut down the methods to meet those limits.

The methods section of an article is mainly written by the first authors. Still, scientific papers are mainly reviewed by senior scientists, who may be focusing more on the results and conclusions of the paper than on the methods. A protocol article provides the space for presenting experimental procedures in full length, making them easy to follow even by novice researchers. Moreover, having this protocol peer reviewed by bench scientists, like those selected by *STAR Protocols*, ensures that technical points are evaluated by scientists who may have encountered the same at their bench.

As an author, how was your experience of the peer review process at *STAR Protocols*?

A published protocol must be useful for other researchers. When you publish a protocol, you want it to be useful for future readers, especially those outside of the field or with less experience. Being the one who designed and performed the experiments, it can be challenging to write a protocol that others will understand. This is where a reviewer can help. At *STAR Protocols*, the protocols are evaluated on their clarity and comprehensiveness rather than on their impact or novelty, so the reviewer's primary role is to critically examine your protocol and help you improve it where it is feasible.

STAR Protocols has an efficient process for publishing. For example, the in-line comments for reviewer remarks. This process helps with quickly assessing and addressing the reviewers' feedback.

What has the feedback been on your published protocol?

I think communication in science is essential, whether you are communicating your scientific finding to a lay audience or communicating your precise data to researchers through peer-reviewed scientific papers or conferences. I believe that the aortic ring protocol (Blot et al., 2021) I developed during my project can be helpful to other scientists. This was one of the reasons we decided to make it accessible before my research paper was published (Blot et al., in preparation). The published protocol has not been cited yet, but other researchers have already contacted us for advice in designing their aortic ring experiment.

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How did you become a peer reviewer in STAR Protocols? How was your first experience?

A few months after publishing my protocol, the *STAR Protocols*' editors invited me to perform my first peer review. As a young researcher, it was a great honor because it was the first time I could peer review a scientific publication independently and not under the direction of a principal investigator.

I had a very positive experience as a peer reviewer. I already knew about the in-line commenting process proposed by *STAR Protocols* since the reviewers of my protocol had used it. And as a reviewer, I was even more enthusiastic about this feature. While in research articles, reviewers often discuss the rationale of an approach or the analysis of the data, in a protocol, the focus is on clarity and detailed description of the experimental steps. For me, it makes perfect sense to use the in-line commenting feature to point to specific passages where additional information or more clarity is necessary. I appreciate this feature because it [benefits both authors and reviewers](#) (Pavlovich and Buttery, 2021).

Did you find any of the resources that STAR Protocols provides for reviewers useful?

The section [Reviewing for STAR Protocols](#) is clear and offers precise guidelines for reviewing a *STAR Protocol*. I think this section is particularly helpful for the reviewers who have not published their research in *STAR Protocols* and consequently may not be very familiar with the unique publication guideline of the journal. I also appreciated the link to [Elsevier Researcher Academy Certified Peer Reviewer Course](#), which can help trainees with little or no experience as a peer reviewer.

How does your experience as a reviewer help you in your own research?

Reviewing research articles enables you to develop a deep understanding of other research in your field and sometimes brings new perspectives to your own projects. In addition to these benefits, reviewing protocols can give you new ideas for designing your experiments. I am proud to have peer reviewed four different manuscripts for *STAR Protocols* and contributed to Cell Press's initiative in promoting clarity and transparency in research. I hope that my feedback as a postdoc and bench scientist will help other authors to make their protocols even more useful for the research community.

Why should researchers publish in STAR Protocols?

For some projects, you may need to develop new models or fine tune an existing model to produce great quality and reproducible research. Unfortunately, the time and the effort you put into this will not be recognized, and you may even have to shrink the method section of your research paper. In such cases, authors should consider submitting their full-length protocol to a peer-reviewed journal such as *STAR Protocols*. In addition to being valuable resources for future research, published protocols enable researchers to get credit for their contributions because the original protocol paper will be cited in subsequent research papers. It also allows you to track your contribution to the community.

When writing a protocol, the author should remember that it will constitute an independent publication, so all the protocol details are now what will make it useful. I encourage potential authors to read previously published papers and the *STAR Protocols* guidelines. Authors should consider how their protocol could benefit from illustrations and schematics of workflows, pictures of the experimental setup, and even videos for critical steps.

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What suggestions do you have for peer reviewers?

When reviewing a protocol, the reviewers should always approach the manuscript from the perspective of new readers in the area who want to follow the protocol and reproduce the same results. They should pay attention to details that are important but can be overlooked. For example, when

applicable, reviewers should pay particular attention to ensuring all the reagents have been listed in the Key Resources Table. Timing and the number of samples should be documented as well. Reviewers should point out any parts of the protocol that are difficult to understand, as future protocol readers may have the same confusion. This can help authors ensure their protocol is clear.

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