Methods Sharing with protocols.io

Mon 11th May, 2020
Overview

1. Introduction to protocols.io
2. Relationship with publishers, funders & institutions
3. Linking method development to publication
4. protocols.io during the current crisis

Q&A
Reproducibility

Researchers unable to...
- find
- access
- replicate
Reproducibility

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Lab Notebook
From Previous Postdoc
The Problem – Method Communication

Repeating and building on previously published work is extremely hard.

The hardest part, by far, was figuring out exactly what the original labs actually did. Scientific papers come with methods sections that theoretically ought to provide recipes for doing the same experiments. But often, those recipes are incomplete, missing out important steps, details, or ingredients. In some cases, the recipes aren’t described at all; researchers simply cite an earlier study that used a similar technique.
Discover Protocols

- Open access repository
- ~7,000 public protocols
- Large diversity of disciplines

https://www.protocols.io/welcome
Making it easy to share method details before, during and after publication.
Do not use Bsal-HF, that enzyme will NOT work with this reaction. Use either Bsal or Bsal-HF2.

Thaw 10X T4 ligase buffer at RT and then leave on ice. Keep BSA on ice. Briefly vortex 10X ligase buffer before using. Use aliquoted volumes of T4 ligase buffer since ATP and DTT will degrade over short amounts of time (less than a month) affecting the efficiency of the reaction.

The required concentration for each donor part in ng/µl is plasmid length / 100. That will yield a concentration of 15 fmoi/µL. For the receiver plasmid the target concentration is length / 200, yielding 7.5 fmoi/µL.

Add into a PCR tube:
1 µL of each donor part at 15 fmoi/µL.
1 µL of receiver plasmid at 7.5 fmoi/µL.

Add water up to 5 µL (assemblies from L1 and above do not need adjustment since 5 plasmids are used)
Elements of protocols.io

File Manager

Workspaces

visible

invisible

Editor
Workspaces

- Group management
- Everything in one place
- Secure file sharing

Fully integrated task manager

- Prevent from sharing files outside of the group
- Prevent from moving files outside of the group
- Prevent from removing files
- Disable ability to get DOI
- Disable ability to publish
- Disable ability to copy files to other storage providers
Key Insights

- Manage and share research data and protocols
- Simplify teamwork and improve collaboration
- Saving time and keep work organized
Adoption

Monthly users creating new protocols

Total public protocols: >7,000
Total private protocols: >24,000
New monthly protocols: >1000
Organizations encouraging use of protocols.io

**Journals & Publishers**
Recommend protocols.io during manuscript submission

**Funders**
Require or recommend protocols.io in grant guidelines/policies

**Institutions**
Campus licenses for more reproducible research and publications.
Protocol Sharing:

- Highlight how you have shared protocols openly – i.e., not upon request – and how those protocols have been used by others. For example, you may have posted them to protocols.io or a similar service.
- Discuss how and when you plan to share the outputs from this proposal. Not all projects will result in protocols. If yours does not, this section can be deleted.
Practicalities & Preservation

- Archived in CLOCKSS
- Daily backups
- All public protocols mirrored at https://github.com/protocolsio/protocols
- Public APIs
- Export (PDF, JSON)
- Citable

PROTOCOL CITATION


MANUSCRIPT CITATION please remember to cite the following publication along with this protocol

Methods and protocols for Drosophila rearing, media preparations, and microbial manipulations are available as a collection in protocols.io at dx.doi.org/10.17504/protocols.io.hdib28n.

**Drosophila stocks and genetics**

Unless stated otherwise, all experiments were performed with matut w^{1118} female flies, L3 flies, Strains: y(w1118)1.1,TM3,Sb, hs-Flp, FRT2A (炀炀), nanos (炀炀, P{w[2-3]hs}11180), tubBM15 (炀炀, P{w[2-3]hs}11180), or fat (炀炀, P{w[2-3]hs}11180).

This collection of methods and protocols from the manuscript, Leitão-Gonçalves et al. Commensal bacteria and essential amino acids control food choice behavior and reproduction, PLoS Biology, 2017, Apr. 18.
Why publish protocols?

Accelerate Science

→ Increase Discoverability
→ Reproducibility
→ Facilitate Research Connections
→ Enable Reuse
→ Enhance Value of Research
When researchers do not have a platform to create and share methods, the institution loses ‘stewardship’ over the research methods and their ingredients.
Benefits of protocols.io

Accelerate Science

★ Increase Discoverability
★ Reproducibility
★ Facilitate Research Connections
★ Enable Reuse
★ Enhance Value of Research
★ Dynamic Permanence (Versioning)
★ Improved Materials & Methods
★ Stewardship of Research Output

Vibrant Open Research Community
Looking for a New Normal post COVID-19

So.. hear me out.
Lab training in the time of COVID19
(for when we are allowed back, that is)
Looking for feedback and suggestions /n

Despite the fact that we are nowhere near reopening at this time, I have started worrying a lot about how to train people in lab when back. At a 6ft distance. With all necessary PPE. Not easy is it?

Our main issue (but not only), is our cell culture lab. Given the safe distance, we won't be able to have two people close enough to see each other's work. We depend so much on see one/do one/teach one.

Here is the idea I am gravitating to: first, we have detailed protocols on @protocolsIO that we will complement with videos recorded by the lab experts for critical procedures

Which is great... but not enough. Feedback is such an integral part of lab training. So I have been entertaining the idea of having the person learning either filming the process or possibly live stream to their supervising lab member (safely sitting >6ft away)

This could help fine tune the processes and learn - hopefully. I guess all in all, writing cannot fully substitute visually seeing someone executing a protocol. Some combo of video/zoom "pseudo-remote" learning is all I came up with so far
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Updates
Resources & News
Q&A

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