

C1 Open App

DEVELOPER'S GUIDE

What is the C1 Open App Developer's Guide?

The C1 Open App Developer's Guide is a set of guidelines to help you polish your scripts before sharing them with the C1 user community on Script Hub. This is an useful outline of best practices for developers to follow to ensure ease-of-use and adoption across the single-cell community.

The Open App program

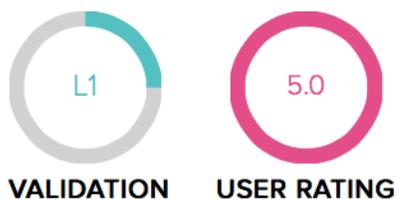
The C1™ system is a flexible platform that can support a broad range of single-cell applications. With the C1 Open App™ program, you can push the envelope of this technology to design, develop and share with the entire C1 user community. The program includes Script Hub™, C1 Script Builder™, the Open App IFC, and the Open App Reagent kit. All of these tools were optimized to maximize your creativity and help you accelerate method development.

C1 Script Builder is an easy, drag and drop software with a design wizard to help you create new protocols or modify existing scripts for the C1 system. After you've defined and validated your new scripts, you can share them with the C1 community on Script Hub, an online portal to distribute new methods, share reference data/publications and discuss your feedback with your peers. Additionally, you can download scripts from Script Hub and import them into C1 Script Builder to make your own adjustments. The Open App IFC and Reagent Kit provide all of the hardware and reagents that you need to implement any C1 Script Builder-developed method.

Reference materials for using C1 Script Builder

For more detailed instructions on how to use C1 Script Builder, please see the C1 Script Builder User Guide (PN 100-7913).

Validation ratings



If you choose to share your script on Script Hub, it will be evaluated and rated prior to its release on Script Hub. Your script will be rated based on completeness of the provided protocol, as well as the quantity and quality of your performance data. Learn more about how scripts are rated [here](#).

View the following sections to learn how to improve your rating:

- Validation and performance data
- Best practices for validation

Updating my validation rating after sharing on Script Hub

There are three scenarios that can change your validation rating after you share on Script Hub:

- Generating additional data
- Publication in a peer-reviewed journal
- Adoption and high user ratings by Script Hub users

If you have generated additional data or published in a peer-reviewed journal after release of your protocol simply edit your script page and include new publications or performance data. If there are substantial changes, you can also resubmit a new version with your data of your script on your MY SCRIPTS page. For more detailed instructions on how to use C1 Script Builder and share on Script Hub, please see the C1 Script Builder User Guide (PN 100-7913).

Similarly, if Script Hub users have downloaded, implemented, and highly rated your script, your validation rating can increase. Fluidigm will monitor user activity and boost validation ratings as your script gains popularity.

Script function and method completeness

Whether it is a new chemistry implemented on the C1 system or an entirely new application, the script should execute a particular method from start to finish. In addition to the script itself, your method should include a complete protocol. To ensure completeness, you should include:

- Cell handling information (LIVE/DEAD staining, number of cells loaded, etc.)

- Reagent names and part numbers
- Reagent concentrations and volumes
- Reagent preparation and handling
- Primer sequences, if applicable
- Harvest storage recommendation
- Post C1 steps, if applicable
- Reference materials, if applicable

Consequences for incomplete scripts

Incomplete scripts submitted to Script Hub will not be published. Instead, these scripts will be returned to you with a request to supply the missing information.

Scripts should minimize prep and/or hands on time

When developing your script, be conscious of preparation and hands-on time. Protocols with labor-intensive steps are less likely to be adopted by your peers. Instead, give thought to how steps can be simplified.

Validation and performance data

While not required, we encourage you to provide performance data. Validation instills user confidence in your protocol and will also help you achieve higher script validation ratings. Similarly, biological data or results published in a peer-reviewed journal will also help your protocol achieve higher ratings. Learn about how scripts are rated here.

Best practices for validation

We recommend that you use diverse sample types during validation and enlist the help of collaborators to vet your method and workflow. Here are some suggestions on executing a meaningful validation:

- Understand variation: Use controls consistently and run several IFCs to determine your standard deviation and thresholds.
- Compare orthogonal methods: Demonstrate that your method produces similar biological data as a conventional method.
- Test diverse sample types: Be certain to understand the limits of your applications. Test primary as well as cell line derived samples. Try neurons, immune cells, and cancer cell types. Expanding your sample set will help you to optimize your method and advise the community on what works and what doesn't.

- Beta test: We recommend enlisting the help of a colleague who has never tried your method before. Have them run it start to finish and give you feedback on what was unclear and what could be improved.

Consequences for not validating scripts

If validation data is missing when submitting to Script Hub, the script will be rated as a Level 1 method. Furthermore, lacking data might appear as a “risky script” to users and may affect how your method will be adopted.

Disseminating your script in a peer-reviewed publication

We highly recommend including a link to your script on Script Hub in your methods or supplemental section. On your script page, click SHARE and then the hyperlink symbol to acquire the link to your script.

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