hivebench

User Guide

February 2017
Introduction

Only Electronic Lab Notebooks give structure to data records, ensuring re-usability and reproducibility, and make it far easier to share and preserve information. Hivebench is designed to help biological researchers to prepare, conduct and analyse experiments, methods and protocols in one location and then share the results with collaborators, team leaders and even funding agencies. Scientists can be sure their experimental results are traceable and conform to international quality standards, and team leaders can rest assured of secure data preservation and proof of compliance with stakeholder mandates.

Easy to use
Hivebench is so user friendly, even someone who’s never used an ELN will be able to prepare, analyse and share data quickly. It’s accessible everywhere on the web (PC, Mac, Linux) or iOS devices, making it even more flexible.

Improves data sharing
Hivebench helps team leaders keep track of activity in their lab, including dedicated alerts so they know when they need to respond to a team request. Researchers are in full control of what is shared to secure efficient workflows.

Saves time
Hivebench cuts research data management time significantly by facilitating rapid data entry and retrieval. Previous results are easy to locate when data and metadata are standardized and searchable.

Increases compliance
Individual and institutional compliance requirements are easier to meet thanks to Hivebench. Research results are easily traceable, with full transparency regarding who was involved in data entry and who has accessed it.

Preserves institutional data securely
Local installation of Hivebench allows for direct integration with an institutional data repository, securing long-term archiving of experiment data. Even when researchers move on in their career, experimental results and procedures are preserved so institutions don’t lose knowledge.

Helps track team activity
Hivebench has dedicated features to help team leaders keep track of activity in their lab, including dedicated alerts so they know when they need to respond to a team request.
Beginners – Step 1: Creating a Hivebench account

1. Go to Hivebench.com to access the home page.

2. Click on the signup button and create an account.

3. Choose a user name, and enter your email and password.
Step 2: Managing protocols & methods

1. Select the Protocol tab.
2. Protocols are templates for short recipes, daily procedures or even complex methods.
3. Here you can paste free text from any PDF, document or web page.
4. Easily add steps or tables
5. And link to external sources like scientific publications.
6. You can also click on easy shortcuts to highlight reagents in blue.
7. Or experimental conditions in grey.
8. Embedding images or videos are easy to do on the web, mac, and iPhone or iPad apps.
Step 3: Storing experimental findings in a notebook

1. Click on the Notebook tab to bring up saved notebooks in the left hand column

2. Each notebook contains one – or several experiments.

3. A typical experiment is a notebook entry that includes research objectives...

4. Samples used...
Step 3: (Continued)

5. The protocol...

6. And results and conclusions. The results can include any kind of files like spreadsheets, images, or videos.
Step 4: Managing research data

1. The data tab is where your research data is stored. It contains all the files uploaded into your experiment.

2. You can preview images, or download the documents on your computer.
3. And by clicking the back button you can read the related experiment. This makes it easy to find relevant research data across different experiments.
Step 5: Doing research on iPhone and iPad

1. The Hivebench iOS app for iPhone and iPad makes accessing your research outside of the lab simple. A one-stop-shop to view your findings securely outside the lab.

2. One tap and all your notebooks are easily viewed.

3. Along with your experiment protocol...

4. and research data.

5. You have access to all experiments without losing any of the features.

6. You have access to all research data without losing any of the functionality.
Intermediate – Step 6: Editing experiments

1. Select an experiment and click on the Write icon.

2. The text editor has advanced features for life scientists.

3. These include an ability to quickly import an existing protocol. Instantly add checkable steps into your experiment.

4. Link to reagents in the hivebench inventory.

5. Highlight experimental conditions in grey.

6. And use our tool to design well plates.
Step 7: Collaborating with colleagues

1. Select the Notebook tab.

2. Notebooks can be private, the results viewable only by the account holder.

3. But Hivebench is designed to be collaborative. So it is easy to invite colleagues to participate in shared notebooks.

4. Simply type in their email address and click add.

5. And you can edit the list as your team changes. This increases interaction with your team mates and your findings valuation.
Step 8: Searching for results

1. Hivebench has a fast and flexible search system, specifically tailored to your experiments.
2. Enter a term in the search field and all experiments with the term in their title, but also content, will be revealed.
3. You can also filter the results, either by date range...
4. Or experiment author.
Step 9: Staying up to date with the newsfeed

1. On Login, the first Hivebench screen is the newsfeed. The timeline shows who did what and when.
2. When a collaborator has worked on an experiment, one click and you can check on the details.
3. Or if someone has ordered a new reagent in the inventory...
4. Again, it shows in the newsfeed. Whether you are a researcher, a student, or a PI. If away from the lab, you will be fully updated on progress.
Step 10: Planning experiments with the calendar

1. The calendar is accessible from this icon. It tracks all experiments planned today, this week etc. Each day will show a notification alert on how many experiments are scheduled.

2. Click on an experiment in the calendar and it’ll open in the notebook.

3. You enter new events in the “plan an experiment” field.

4. Need to change day or time? – just drag and drop to update.
Step 11: Using open science protocols

1. Hivebench has an Open Science protocols repository which you can access without having an Hivebench account. This is a great time saver for busy life scientists. [https://www.hivebench.com/protocols](https://www.hivebench.com/protocols)

2. But if you’re logged in, select protocol and click import.

3. You now have access to hundreds of protocols in the database.
4. Select and click on any one and it will be added to your private library.

5. To make your own protocols publically available, click on edit and select the Open Science Option.

6. Select the Open Science Option and click save changes.
Step 12: Exporting research data to Mendeley Data

1. Hivebench allows for easy export to Mendeley Data.

2. Select your experiment...

3. Click export...

4. Select “send files to Mendeley Data”.
Step 12: (Continued)

5. Next, login to Mendeley.

6. You’ll see a dialog box with details of your experiment.

7. Click "send to Mendeley Data".

8. And your experiment is now available to publish in Mendeley Data.
Step 13: Inventories

1. The inventory shows all the reagents used in your experiments.
2. It also shows in which experiments they were used. In the inventory you can easily add reagent details, including their name and reference, their expiration date, and location. You can also add web links to suppliers.
3. And inventories are collaborative too, so it’s easily accessible to all team mates. And save time by downloading reagents spreadsheets into an excel template, which are automatically added.
Step 14: Signing and counter signing experiments

1. It’s simple to sign and countersign experiments in Hivebench. In the experiment, click on the tick icon.

2. Collaborators can countersign also, so witnessing your findings.
Step 14: (Continued)

3. And each time it will create a new version.

4. You can also export an audit trail showing the history of your experiment.

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5. This tracks every change, follows legal guidelines including FDA 21 CFR Part 11 and protects your intellectual property rights.
Step 15: Archiving notebooks

1. When you have completed your project, you can archive the dedicated notebook.

2. Simply click on the archive button and it will disappear from your notebook list.
Step 15: (Continued)

3. It is hidden, not deleted. If, at a later date you want to re-use it, you can un-archive it in account settings.

4. Select the show archived experiments and / or reagents and click save archive visibility settings.