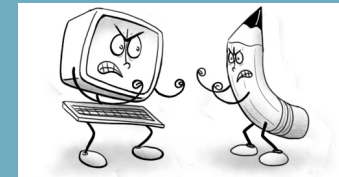


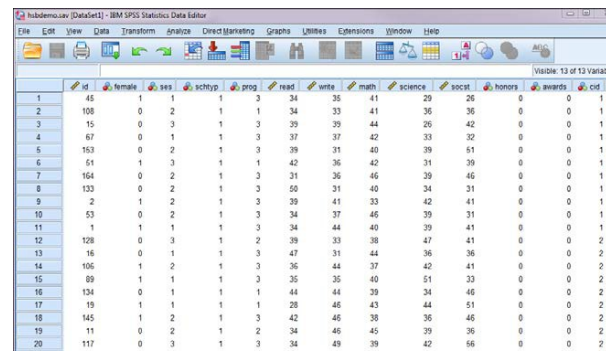
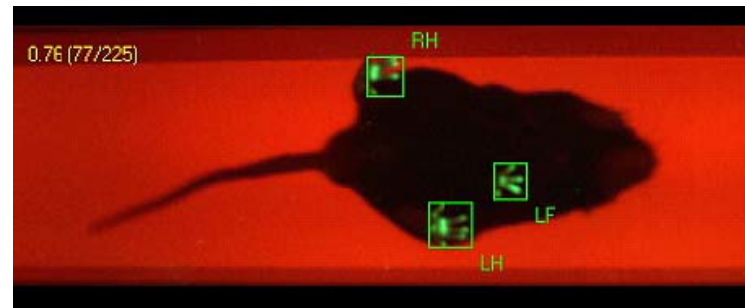
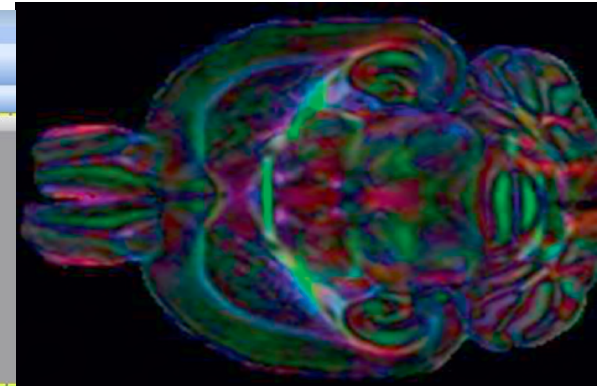
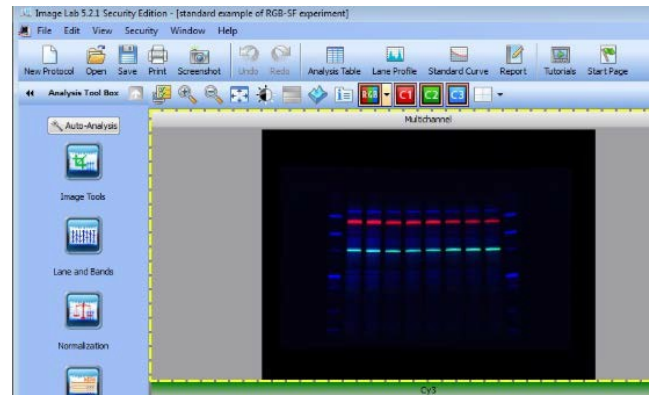
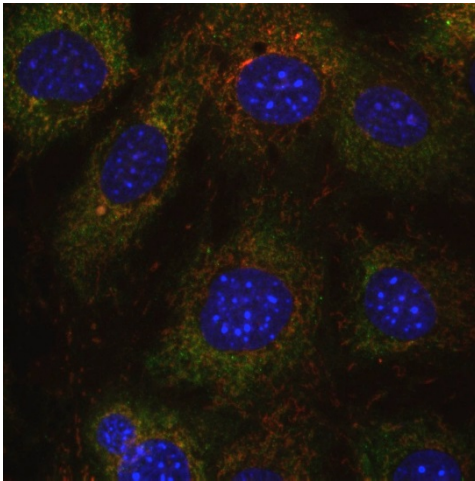
# INTRODUCTION AND ADVANTAGES OF THE ELECTRONIC LABORATORY NOTEBOOK LABFOLDER



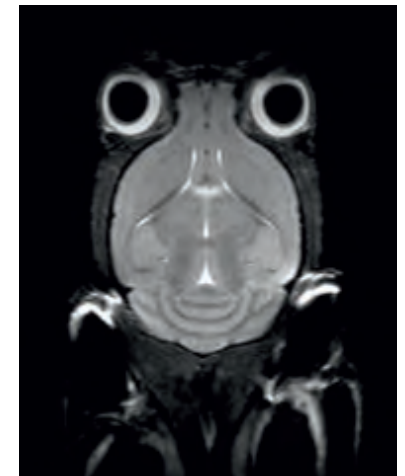
René Bernard, PhD

NeuroCure Coordinator for Research Value and Open Science

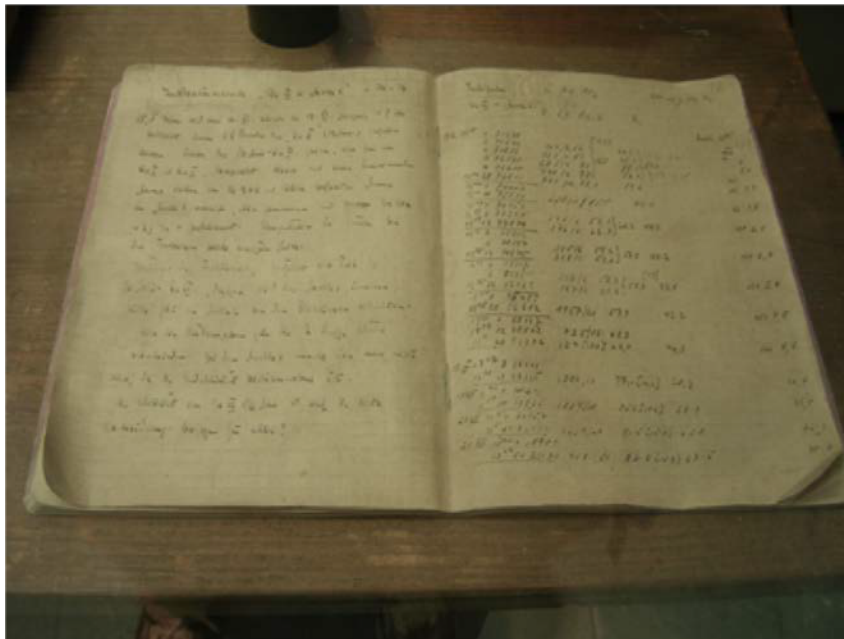
# Most data are digital



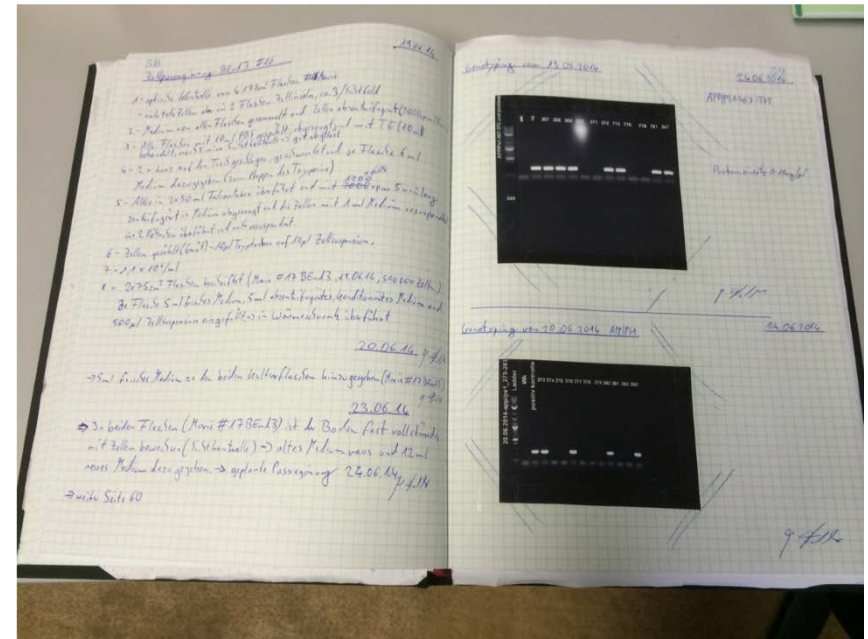
	id	female	sex	schtyp	prog	read	wrte	math	science	socst	honors	awards	cid
1	48	1	1	1	3	34	35	41	20	26	0	0	1
2	108	0	2	1	1	34	33	41	35	35	0	0	1
3	15	0	3	1	3	39	39	44	26	42	0	0	1
4	67	0	1	1	3	37	37	42	33	32	0	0	1
5	163	0	2	1	3	39	31	40	39	51	0	0	1
6	51	1	3	1	1	42	36	42	31	39	0	0	1
7	164	0	2	1	3	31	36	46	39	46	0	0	1
8	133	0	2	1	3	50	31	40	34	31	0	0	1
9	2	1	2	1	3	39	41	33	42	41	0	0	1
10	53	0	2	1	3	34	37	46	39	31	0	0	1
11	1	1	1	1	3	34	44	40	39	41	0	0	1
12	128	0	3	1	2	39	33	38	47	41	0	0	2
13	16	0	1	1	3	47	31	44	36	36	0	0	2
14	106	1	2	1	3	36	44	37	42	41	0	0	2
15	89	1	1	1	3	35	35	40	51	33	0	0	2
16	134	0	1	1	1	44	44	39	34	46	0	0	2
17	19	1	1	1	1	28	46	33	44	51	0	0	2
18	145	1	2	1	3	42	45	39	35	46	0	0	2
19	11	0	2	1	2	34	46	45	39	36	0	0	2
20	117	0	3	1	3	34	49	39	42	56	0	0	2



# But documentation standards have not evolved



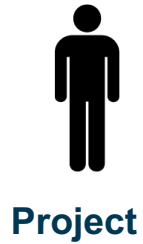
1938: Lab Notebook of Otto Hahn



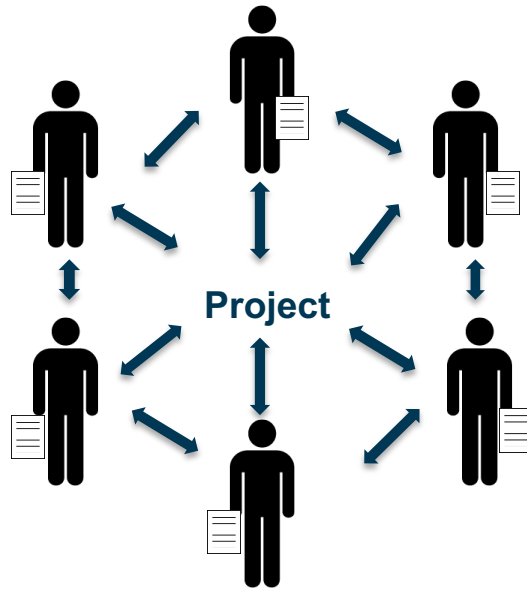
Today Paper Lab Notebook

# Alone or Together

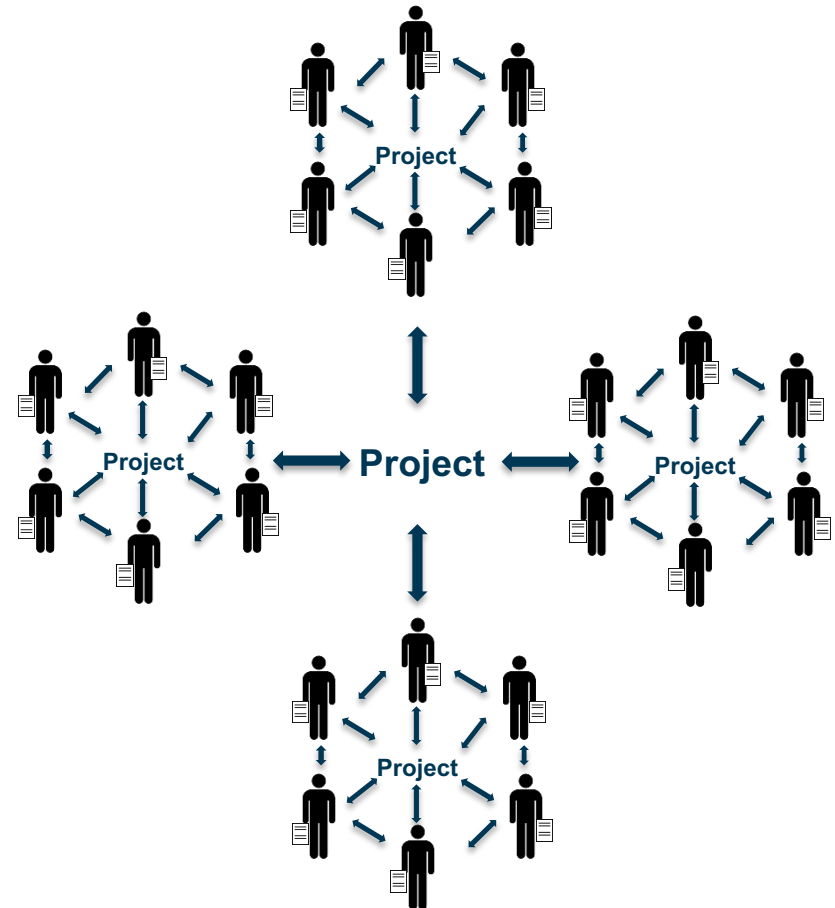
Individuum



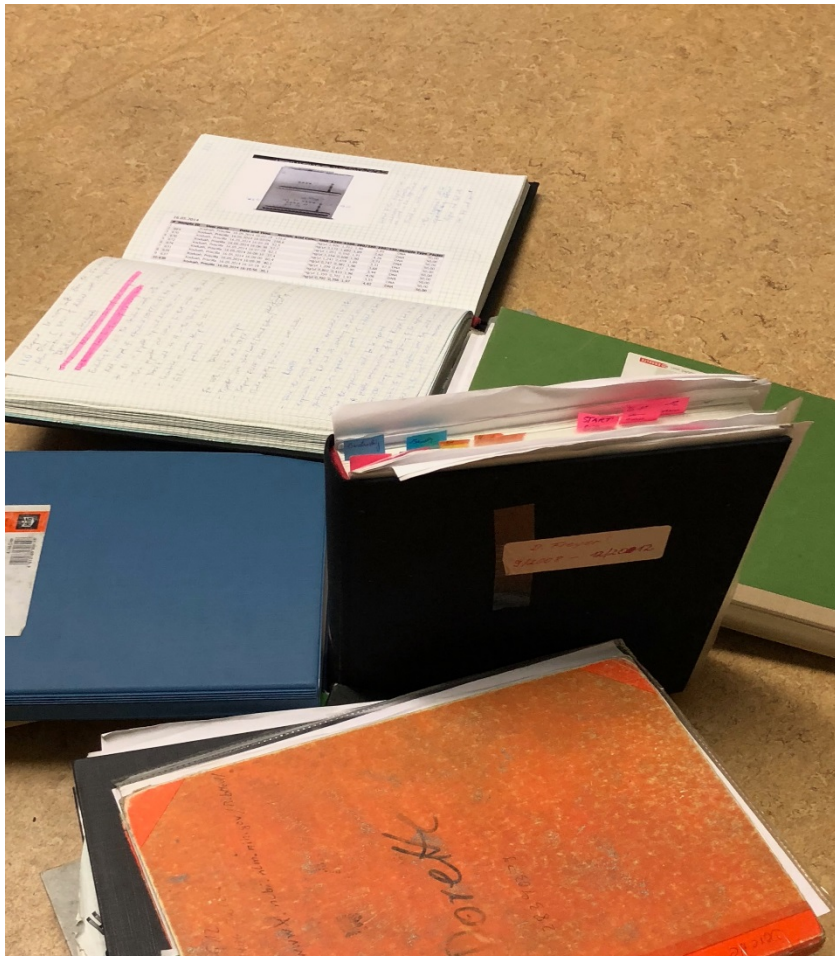
Workgroup



Institution / SFB



# Searching for data and experimental details



**ONE DOES NOT SIMPLY**



**FIND STUFF IN OLD NOTEBOOKS**

# Data and Data Documentation Safety

- Are data backed up back regularly?
- Is the storage solution safe ?



## The Challenge

Translating innovative discoveries in medicine has been extremely challenging over the last two decades, with an unsatisfactorily low percentage (less than 5%) of academic inventions leading to clinically relevant drugs or diagnostics world-wide.

Many blame Big Pharma for steering away from risky endeavors, while maximizing short-term profits. However, a careful analysis reveals that the low translatability of academic discoveries is equally due to the **lack of robust intellectual property** as well as the **lack of knowledge, expertise and resources** to de-risk and advance academic projects to drug discovery and development.

Labfolder ELN can be a pivotal instrument to combat some of these challenges

# What can laborfolder and BIH offer?

1. Provide infrastructure for enduring solution for research record keeping

2. Meeting international (industry) standards for record keeping

- validation
- time stamps
- audit trail
- copies of record

Sign &  
Witness



Sign entry

I hereby certify that I have performed the experiment and/or created this entry.

▼ Sign with login credential

Enter your account password

▶ Sign with handwritten signature (biometric signature)

Cancel Sign



# BIH / Charité Server offered since 2017



Sign in with your email and password

Login

[Forgot password?](#)

Still don't have a labfolder account?

Create account



<https://labfolder.bihealth.org> is running on our own BIH Server

## APPLY FOR AN ELECTRONIC LAB NOTEBOOK ACCOUNT

### Who can apply for an account ?

Group leaders at the Charité can register their group for an account at the labfolder server of the BIH. This task can also be delegated to a group member who can register on behalf of the group leader.

**If you belong to a group which already has an account at the labfolder server of the BIH, you do not have to apply for an account here. The administrator of your group is able to create an account for you directly on the labfolder server.**

### What if I already use labfolder in the cloud (labfolder.com)

In this case please contact us under [elabbook@bihealth.de](mailto:elabbook@bihealth.de) before you apply for an account. At the moment, labfolder is working on a way to transfer all of your data from the cloud to the BIH server.

### How to apply for an account?

To apply for an account, please follow this [Link](#) and fill out the form.

- If you are the group leader choose "I am a group leader (PI)"
- In case you act on behalf of the group leader, who delegated this task to you choose: **I am a group member and act on behalf of the group leader"**

If you do not have a mandate from your group leader yet, you can still use the form to receive additional information about the Electronic Lab Notebook (choose **I am a group member**) but you can not apply for an account at the labfolder server.

### What are the next steps after filling out the form?

- When your application has been processed, you will be able to access to the BIH labfolder portal.
- At the portal, you can schedule a webinar for your group in order to learn how the Electronic Lab Notebook is used.
- After the webinar, your group as well as your administrator account will be created.
- As a group administrator you can create the accounts for your group members directly at the labfolder server.

### Contact

You can contact [elabbook@bihealth.de](mailto:elabbook@bihealth.de) if you have any questions or requests regarding the electronic lab book at BIH.

[Electronic Lab Notebook – FAQs >](#)

<https://www.bihealth.org/en/quest-center/service-infrastructure/how-to-apply-for-an-eln-account/>

# Alone – Always the first step

## LABFOLDER ACCOUNT CREATION



Create a single user account for [labfolder.bihealth.org](https://labfolder.bihealth.org).

To work together as a team, you need to be invited to an existing labfolder group or register your group [here](#).

MDC Researchers: The conditions of access for MDC members after the integration of the BIH into the Charité are still being clarified. If you have specific questions, please contact the [BIH Change Management](#)

All fields are mandatory.

First Name*	Last name*
Your E-Mail*	
Password (minimum 8 Characters)	
Retype password	

To be able to inform you, if other members of your group are already using labfolder at the BIH, we need to identify the group, you belong to. For this reason we ask you to provide the email address of the group leader.

## Register for a BIH Labfolder group

**Group leaders and group members acting on behalf of group leaders** belonging to Charité and (perspectively) MDC must register here for a Labfolder group at the BIH.

Please select an option \*


please select ▼

First name\*

Last name\*

Email\*

Subscribe to labfolder Newsletter

I'm not a robot   
reCAPTCHA  
Privacy - Terms

By continuing, you agree to Labfolder's [Terms of Use](#) and acknowledge reading the [Privacy Policy](#).

SUBMIT

<https://form.bihealth.org/>

<https://www.labfolder.com/bih/#bih1>

# Request a Group – to work together

<LAB FOLDER>

Groups > Tutoren

NOTEBOOK

MANAGE

DASHBOARD



+ Add

Invite user

Add new subgroup

Invite existing user to a group

- BIH Admin (admin)
- Isabella Cosson (admin)
- AG 1
  - Ingo Demo November 2020 (admin)
  - Isabella Cosson
  - AG1.1
- AG 2

Administration

settings



BIH Admin



Isabella Cosson

About this group

No group description set yet. The group administrator can do this in the group settings page.

support

recommend

## LABFOLDER ACCOUNT CREATION



Create a single user account for labfolders@bihi.org.  
To work together, we learn, you need to be invited to an existing labfolder group or register your group here.

MLIC Researchers: The conditions of access for MLIC members after the integration of the first into the Portal are set along the link. If you have specific questions, please contact the [BIH Change Management](#).

All fields are mandatory.

First Name\*  Last name\*

Your E-Mail\*

Password (minimum 8 Characters)

Repeat password

To be able to inform you, if other members of your group are already using labfolder at the BIH, you need to identify the group you belong to. For this reason we ask you to provide the email address of the group leader.

labfolder

Projects

Filter: Title Authors (0) Dates Apply Filter

	Owner	Last Modified	Created
Group projects: Exp Neuro			
!Fehlersammlung Labfolder 1.18.3	BIH Admin	19.02.2018 15:46	16.10.2017 10:35
!Fehlersammlung Labfolder 1.20.2	BIH Admin	28.02.2018 13:50	28.10.2017 15:38
AG Boehm-Sturm VCL_POLD_2017	Philipp Boehm-St...	07.06.2018 16:12	19.04.2017 07:28
ARC-DAB-Staining auf Neurone	Janet Lips	17.12.2016 09:09	07.07.2015 15:02
bitte löschen!	Janet Lips	17.12.2016 09:09	16.09.2015 09:59
Cellprofiler neuronale Zellkultur	Dorette Freyer	13.07.2018 13:07	12.01.2018 14:15
Ctx Kulturen bis staining	Dorette Freyer	09.12.2016 11:29	27.06.2016 16:15
DF 04-16 labrotation neuronal cell culture	Dorette Freyer	17.02.2018 09:50	
DF 13-16 ibidi Test	Dorette Freyer		31.05.2018 14:19
DF Phänotypisierung MCTX Kulturen	Dorette Freyer	16.06.2017 15:53	16.06.2016 13:44
DF test 2016-10-31	Dorette Freyer		31.10.2016 17:16
Gedaechtnisstuetze To Do in der Histo	Ingo Przeszdzing	14.02.2017 19:03	14.02.2017 18:51
Historical Correlates of Voxel Based Morphomet...	Ingo Przeszdzing	20.04.2018 11:36	18.02.2018 13:33
Masterarbeit Ferdinand Browa	Dorette Freyer	03.11.2017 14:12	06.01.2017 14:02
mTOR activation in epileptiform activity in vitro	Mariam Hafsia	05.07.2018 17:48	21.02.2018 16:16
Nebennieren AG Pruess	Ingo Przeszdzing	06.12.2016 12:10	19.10.2016 15:41
Optimization of Rodent Brain Fixation Methods	Esmeralda Heiden	15.03.2018 17:44	15.03.2018 17:18
RAS	René Bernard	06.03.2014 13:42	06.03.2014 13:42
Sorcs2	André Rex	31.01.2018 17:20	15.07.2016 10:47
Stat 3 - PCR	Maximilian Agel		06.01.2016 13:16
Stat 3 - PCR	Maximilian Agel		06.01.2016 13:17
Stat 3 PCR	Maximilian Agel		06.01.2016 13:18
Surplus Material Management (SPARE)	Esmeralda Heiden	08.05.2018 10:44	20.10.2017 10:49
Test Forschungsprozess	Ingo Przeszdzing	09.07.2018 10:09	04.07.2018 15:51
Tet Tag Test PFA vs NaCl	Moritz Eggens	16.05.2018 12:30	13.04.2018 11:18
Training	Esmeralda Heiden	25.10.2017 13:22	25.10.2017 13:22
Wunschliste: Material Database	Ingo Przeszdzing	29.10.2017 09:03	25.10.2017 16:43
Exp Neuro IT Projekte Sebastian und Ingo	Ingo Przeszdzing		21.04.2015 20:06
FACS	Ingo Przeszdzing		01.12.2014 17:51
Histologie Fachbereichsarbeit	Ingo Przeszdzing	14.02.2017 08:56	07.02.2014 13:07
Kollaborationen	Ingo Przeszdzing		17.04.2015 19:36
Praktika	Ingo Przeszdzing		01.07.2014 16:25
Projekte Histologie	Ingo Przeszdzing		27.11.2014 10:07
QM / FBL Aufgaben	Ingo Przeszdzing		12.06.2014 15:08
Group projects: BIH Admins			

### Settings

Your content (projects, templates, folders) is always shared with the group admins, even if you don't select them in the share settings.

Share with:

- Biochemie
- Dirk Megow (*admin*)
- Fachbereichs-TA
- Christa Josties
- Sonja Blumenau
- Yvonne Amoneit

Cancel Save

# Adding Data

labfolder Notizbuch

+ Hinzufügen Filter: Projekte (0) Autoren (0) Tags (0) Datum

Ungeladene

Ungeladene

PCR\_Template.xlsx 8.9 KB

CBA.pdf 455.6 KB


Primäre\_Neurone\_Div7\_-13-10-11.doc 453.0 KB

Färbung Primäre Neurone in 24 Well Platte !!!

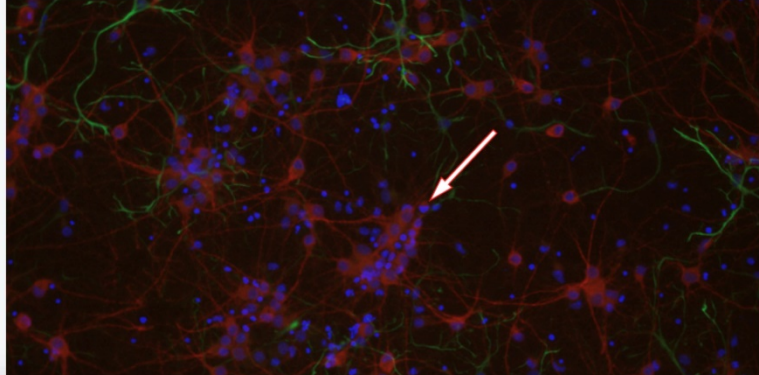
Lösungen:  
**Blocking:** 0,5% Saponin in PBS + 1% NGS  
**Verdünnungs Lösung für Antikörper:** 0,1% Saponin + 1% NGS

3x Waschen PBS  
20 min permeabilisieren und Blocken mit **Blocking Lösung**  
1x Waschen mit **Verdünnungs Lösung**  
Inkubation mit Prim AKs in **Verdünnungslösung** 1h RT  
3x Waschen mit **Verdünnungs Lösung**  
Inkubation mit Sek AKs in **Verdünnungs Lösung** 30 min RT  
3x Waschen mit **Verdünnungs Lösung**  
Inkubation mit DAPI 3 min RT  
3x Waschen mit PBS

Silber001.tif



678.jpg



	A	B	C	D	E	F	G	H	I	J
1	Well	Prim AK	Verdünnung	Sek AK	Verd					
2	1	-		GaM Alexa 546+ GaRab Alexa 488	1:1000					
3	2	Maus-Anti NeunN	1:500	GaM Alexa 546	1:1000					
4	3	Rabbit MAP2	1:500	GaRab Alexa 488	1:1000					
5	4	Rabbit GFAP	1:500	GaRab Alexa 488	1:1000					
6	5	Maus NeuN + Rabbit MAP2	1:500	GaM Alexa 546 + GaRab Alexa 488	1:1000					
7	6	Maus MAP2 + Rabbit GFAP	1:500	GaM Alexa 546 + GaRab Alexa 488	1:1000					
8	7	Maus NeuN + Rabbit GFAP	1:500	GaM Alexa 546 + GaRab Alexa 488	1:1000					
9										
10										

File size error

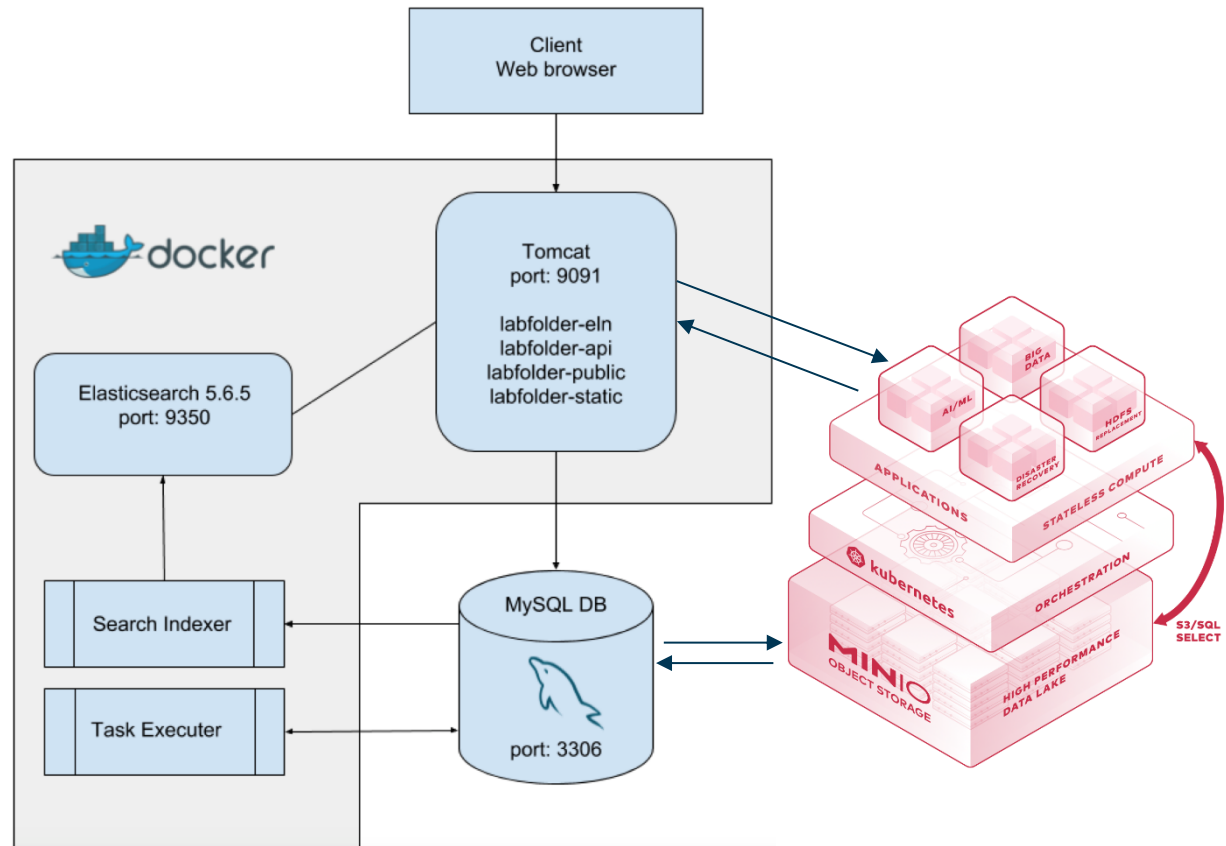
Only files up to 25MB are allowed for uploading.

OK

# Adding Data – coming soon

## Object Storage

- 100 x more storage (at the beginning)
- No technical file size limitation
- New interface to browse / share / edit files



# Deleting: No, but hiding

## Altering records: Yes, but logged

- Only the person that made the entry, can edit the entry

History of this entry

18.03.2016 16:43	Excel imported
18.03.2016 16:43	Element added
01.09.2015 16:54	Text element was edited
01.09.2015 16:54	Text element was edited
01.09.2015 16:52	Layout changed
01.09.2015 16:52	Text element was edited
01.09.2015 16:51	Table element was edited
01.09.2015 16:51	Element added
01.09.2015 16:48	Element removed
01.09.2015 16:48	File was uploaded
01.09.2015 16:48	File was uploaded
01.09.2015 16:48	Element added
01.09.2015 16:47	Element added
01.09.2015 16:46	Image was uploaded
01.09.2015 16:46	Element added
01.09.2015 16:46	Table element was edited
01.09.2015 16:45	Table element was edited
01.09.2015 16:44	Element added
01.09.2015 16:44	Text element was edited
01.09.2015 16:41	Element removed
01.09.2015 16:41	Element added
01.09.2015 16:41	Text element was edited
01.09.2015 16:39	Entry title was set
01.09.2015 16:38	Element added
01.09.2015 16:38	Entry created

*Stunde)?*

1. Tiefkühlen (-80°C) von Kies über mehrere Stunden (3-4)
2. 125 ml 2-Methylbutan in 250 ml Becherglas geben
3. Beginn des Kühlvorgangs durch Kies (1-1,5 kg). Messung der vorherrschenden Aussentemp (T Labor)
4. Zeit bis Zieltemp. von -35°C erreicht ist T(Null); Messpunkt ist 1 cm über dem Boden in der Mittel des Gefäßes.
5. Versuch über eine Stunde den Temperaturbereich zwischen -30°C und -40°C zu halten; dazu Temp. Messung alle 5 min: T5; T10; T15; T20; T25; T30; T35; T40; T45; T50; T55; T60
6. Bei Unterschreiten von -40°C wird der umgebende Kies entfernt; wird -30°C überschritten, wird der Flüssigkeitsbereich des Becherglases von aussen maximal vom Kies umhüllt.
7. Sollte trotz aller Bemühungen bei der nächsten Messung der Wert -30°C überschritten sein, ist der Versuch abzubrechen

Labfolder Table

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	
13																	
14																	
15																	
16																	
17																	
18																	
19																	
20																	
21																	
22																	
23																	

Sheet1



# Adding Data – Templates

The screenshot shows a web-based template editor. At the top, it says '<LAB FOLDER> Templates > Ingos PCR Template'. Below this, there are input fields for 'Primer 3':', 'Primer 5':', and 'Annealing Temp.: Temperature: \_\_\_ °C'. A file named 'PCR\_Template.xlsx' (8.9 KB) is attached. Below the file is a spreadsheet titled 'PCR\_Template' with the following data:

	A	B	C	D	E	F	G	H	I	J
1	Substance	Single Volum:	Volume for n sample	Number of Samples						
2	dNTP	1		9	9					
3	primer A	1		9						
4	primer B	1		9						
5	TAQ Polymerase	1		9						
6	Buffer	5		45						
7	Water	11		99						
8	Total	20		180						

The screenshot shows a 'Notebook' interface. At the top, it says '<LAB FOLDER> Notebook'. There are buttons for '+ Add', 'Add new entry', and 'Use template'. Below these, there are filter options for 'Projects (1)', 'Authors (0)', 'Tags (0)', and 'Dates'. An entry is listed: 'Entry 5/5 : No entry title yet in Project: Demo Projekt des Admins!!!!'. Below the entry is an 'Empty File Element'.

The screenshot shows a 'Use template' dialog box. It contains a list of folders and templates. The 'Ingos PCR Template' is highlighted with a red circle. The dialog box has 'Cancel' and 'Use template' buttons at the bottom.



# Finding records – Apply Filters and Fulltext search

labfolder Notebook

Filter: Projects (1) Authors (0) Tags (0) Dates

Find an author...

- Ingo Przesdzing
- BIH Admins
- Ingo Przesdzing (admin)
- Exp Neuro
- Zellkultur
- Dorette Freyer (admin)
- Histologie
- Ingo Przesdzing (admin)
- Fachbereichs-TA
- Sonja Blumenau
- Christa Josties

created: 21.06.2018  
modified: 03.07.2018

Analyse pipeline 1-18  
2-18

## Notebook

Filter: Projects (0) Authors (0) Tags (0) Dates

Sheet0

### Fazit Slide 2-18

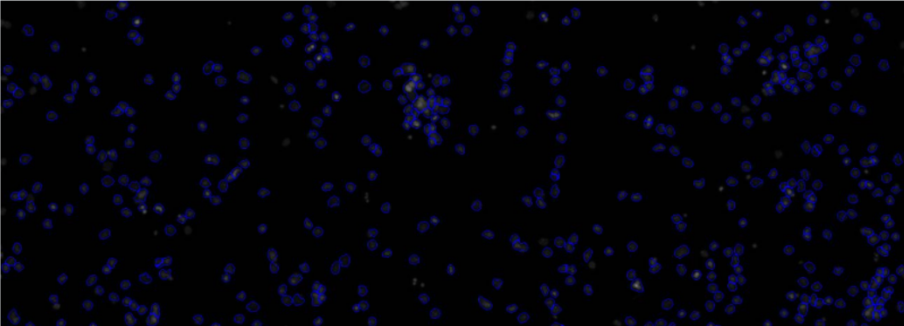
Hier wurde auf das Waschen nach dem Sekundärantikörper verzichtet und erst nach Inkubation mit DAPI gewaschen. Die Zellzahl ist deutlich höher als bei 1-18 und die DAPI Färbung sieht besser aus. Der ermittelte prozentuale Anteil NeuN+ Zellen entspricht in etwa dem von Slide 1-18. (ca 50 - 60 %) Die Helligkeit der Färbung ist bei 1:250 und 1:500 vergleichbar und nimmt bei 1:1000 merklich ab. Der Ermittelte prozentuale Anteil Sox9+ Zellen liegt bei ca 30 % bei allen 3 Verdünnungen.

Auffällig ist,

- dass bei der höchsten Sox9 AK Konzentration (1:250) die Fluoreszenzintensität der Färbung am schwächsten ist. Bei 1:500 und 1:1000 ist die Helligkeit der Färbung merklich höher (siehe Plots 2-18.pdf).
- bei den höheren Sox9 Verdünnungen (1:500 und 1:1000) ist jeweils eine größere Menge an Zellen auch NeuN positiv. Hier ist möglicherweise bei der Färbung etwas schief gelaufen.

Slide 2-18 NeuN 1:250

20180607-iprz-Sox9-NeuN-1h-02-18\_vom\_6-6-2018\_A2\_NeuN\_1\_z\_250\_s21\_ch00.jpeg



# Feature development: Inventory

## Adding a new category

### 1 Category name

Give your category a name to identify the kind of items that will be registered. For example: Antibodies, Reagents, Tissue samples, etc...







### 2 Category attributes

Attributes will better describe the items that you add to the category. For example: Clonality, storage temperature, location, hazard level, etc...







Attribute	Type	Values
Status *	Dropdown	Available, Out of stock, Ordered
Name *	Text	Not applicable

ADD ATTRIBUTE

# Feature development: Inventory

-  All items
-  Acids
-  **Antibodies**
-  Ketones
-  Plasmids
-  Reagent compounds

ADD CATEGORY

Antibodies (159 items)							FILTER	OPTIONS
	Storage temperature (°C)	Species reactivity tested	Antibody product type	File attachments				
ibody	-20	✓ Yes	Primary antibody	 1				
ibody	-20	✓ Yes	Primary antibody	 2				
ibody	-20		Primary antibody	0				
ibody	-20	✓ Yes	Primary antibody	 3				
ibody	-15	✓ Yes	Primary antibody	 3				
(GAP) Antibody	-13		Primary antibody	0				
dy	-10	✓ Yes	Primary antibody	 3				
both Muscle - Cy3™ antibody	-35		Primary antibody	0				
both Muscle antibody	-40	✓ Yes	Primary antibody	 3				

< 1 of 10 pages >

 ADD ITEM

?

PZ

# Feature development: Inventory

labfolder  
Material Database

All items

Active Archived

Acids  
Antibodies  
Ionic liquids  
Ketones  
Osmium  
Perchlorates  
Plasmids

ADD CATEGORY

Options for category Antibodies [BACK TO LIST](#)

ATTRIBUTES PERMISSIONS HISTORY

Determine who can do what in this category.

Role	Rights	Who has this role?	
Manager	Can view, edit, share, archive, and delete <b>this category</b> . Can view, create, edit, archive, and delete <b>items in this category</b> .		<input type="button" value="MANAGE"/>
Editor	Can view, edit, archive, and delete <b>this category</b> . Can view, create, edit, archive, and delete <b>items in this category</b> .	No one has this role yet.	<input type="button" value="MANAGE"/>
Power user	Can view, create, edit, archive, and delete <b>items in this category</b> .	No one has this role yet.	<input type="button" value="MANAGE"/>
User	Can view <b>items in this category</b> .		<input type="button" value="MANAGE"/>



## RE-PLACE — Implementing an electronic lab notebook as an quality assurance instrument in biomedical research

In August 2020 the research project RE-PLACE has started at the QUEST Center. The project is part of the BMBF funding line "Quality developments in science: Investigations on the meso-level". In cooperation with the Charité - Universitätsmedizin Berlin and the Otto-von-Guericke-University Magdeburg, RE-PLACE investigates the implementation of the electronic laboratory notebook labfolder as an instrument of quality assurance in biomedical research.

Further information

### BMBF PROJECT RE-PLACE

RE-PLACE studies the process of shifting from analogue documentation of research processes in paper lab books to so-called electronic laboratory notebooks (ELN). ELNs do not only digitalize the documentation of researchers' experiments, but also link their notes directly to research data generated in experiments. On the initiative of BIH QUEST Center, the Berlin Institute of Health (BIH) is currently implementing an [institutional programme to replace analogue research documentations with ELN Labfolder](#). To evaluate this implementation process, Charité - Universitätsmedizin Berlin together with Otto-von-Guericke-University Magdeburg started the BMBF-funded research project RE-PLACE in August 2020. RE-PLACE aims at assessing the overall value and benefits of adopting ELN Labfolder at BIH.

## What does the study offer?

Individual *Labfolder*  
**Training Courses** [1,5 h]  
tailored to your  
research team



Individual *Labfolder*  
**Tutorials** [2 - 3 x 1 h]  
tailored to your  
research team

**Online Surveys**  
[3 x 15 min]



- 1 You receive an individual *Labfolder* training that is tailored to the needs and requirements of your research team. As a result, you will be able to use the software effectively.
- 2 Your participation helps ELN programme planners of the QUEST Center to improve their *Labfolder* training formats.
- 3 Your participation helps future *Labfolder* users with their targeted integration of *Labfolder* into laboratory practice.

<https://www.bihealth.org/en/re-place/>



# Thank you!

<https://www.bihealth.org/de/forschung/quest-center/services/eln/>

<https://www.bihealth.org/de/quest-center/>

[quest-toolbox.bihealth.org](https://quest-toolbox.bihealth.org)

**Contact:** [elabbook@bihealth.org](mailto:elabbook@bihealth.org)

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