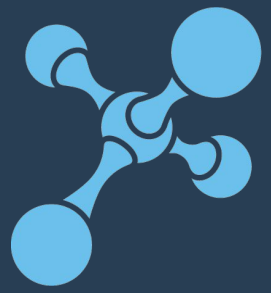


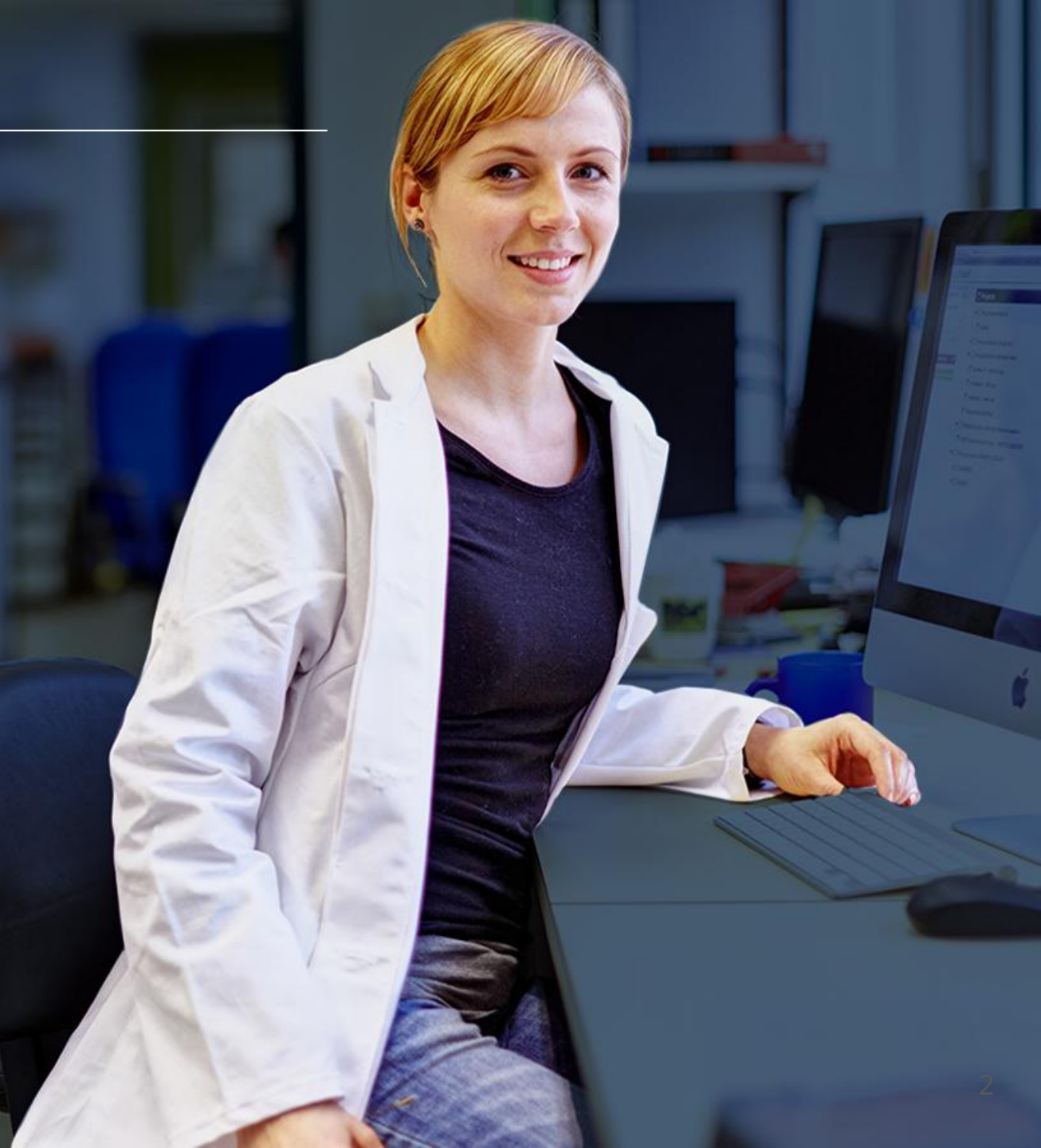
labfolder

Introduction - TU Delft

Yannick Skop, Managing Director & CCO

ABOUT LABFOLDER

1. Launched 5 years ago
2. Founded by MPI researchers
3. Based in Berlin
4. 20,000+ users worldwide
5. A team of passionate scientists & computer nerds
6. Support 7 days a week



A FAMILIAR FACE

labfolder Notebook

NOTEBOOK MANAGE DASHBOARD

+ Add Filter: Projects (1) Authors (1) Tags (3) Dates

Yannick Skop | Entry 1/1: Project introduction: WT1 isoforms | in Project: 28.02.2018 Investigating WT1 | created: 28.02.2018 | modified: 28.02.2018 | WT1 Cancer Fibrosis

Investigating the differential instructive roles of WT1's isoforms

Introduction: The Wilms' tumour 1 gene and its isoforms

The Wilms' tumour 1 (WT1) gene was given its name because of its crucial role in the development of the eponymous paediatric kidney tumour, where the gene was originally identied. The human gene is located on chromosome 11 and consists of 10 exons,spanning about 50 kilobases (kb) of genomic sequence.

Mutations in the gene were identifed not only in a considerable portion of Wilms' tumours, but also in diffrent congenital syndromes, characterised by severe kidney disease, gonadal dysgenesis, heart and diaphragm problemsThe +/+ isoform includes both the 17 aa (amino acids), deriving from the usage of exon 5, and the KTS between the thirds and fourth zinc fingers, generated by the use of the alternative splice donor site in exon 9; the +/- variant encodes for the 17 aa, but lacks the KTS; the -/+ isoform includes only the KTS residues, while in the -/- variant both the 17aa and the KTS are excluded.

Objectives

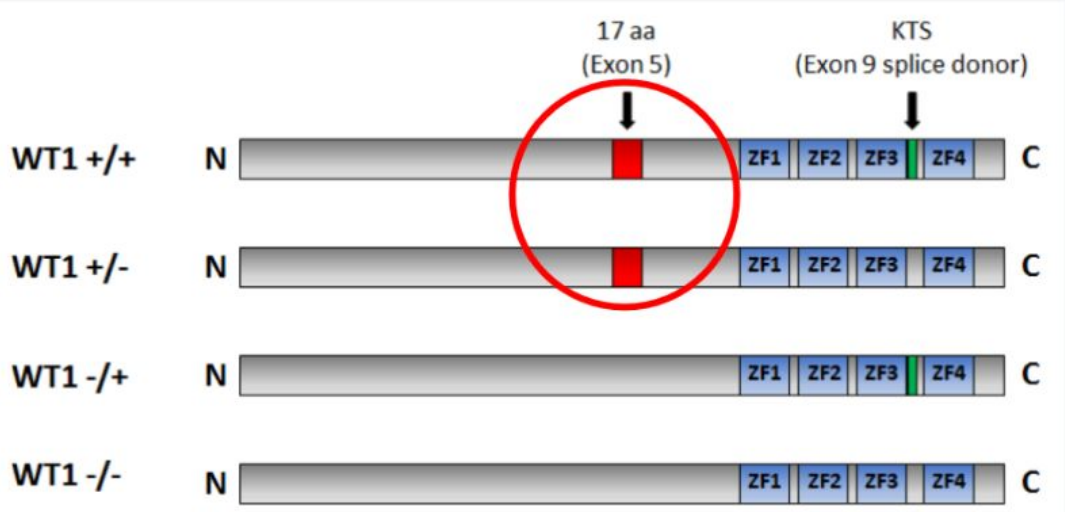
The functions of WT1 and its isoforms have been so far addressed in vivo using KO models, which have provided pivotal insights on the role of WT1 in development and disease. Nonetheless, they did not allow the investigation of the instructive role of the transcription factor. In order to address in vivo which processes WT1 is able to induce, mice models for the upregulation of WT1 will be needed.

Aiming to address the instructive role of WT1 and to dissect the differences between its variants, I wanted to create cellular systems for the inducible expression of single isoforms of the transcription factor. I derived two epithelial cell models in which is possible to induce WT1 isoforms expression and I started characterizing the effects of the induction by gene expression analysis and cellular assays.

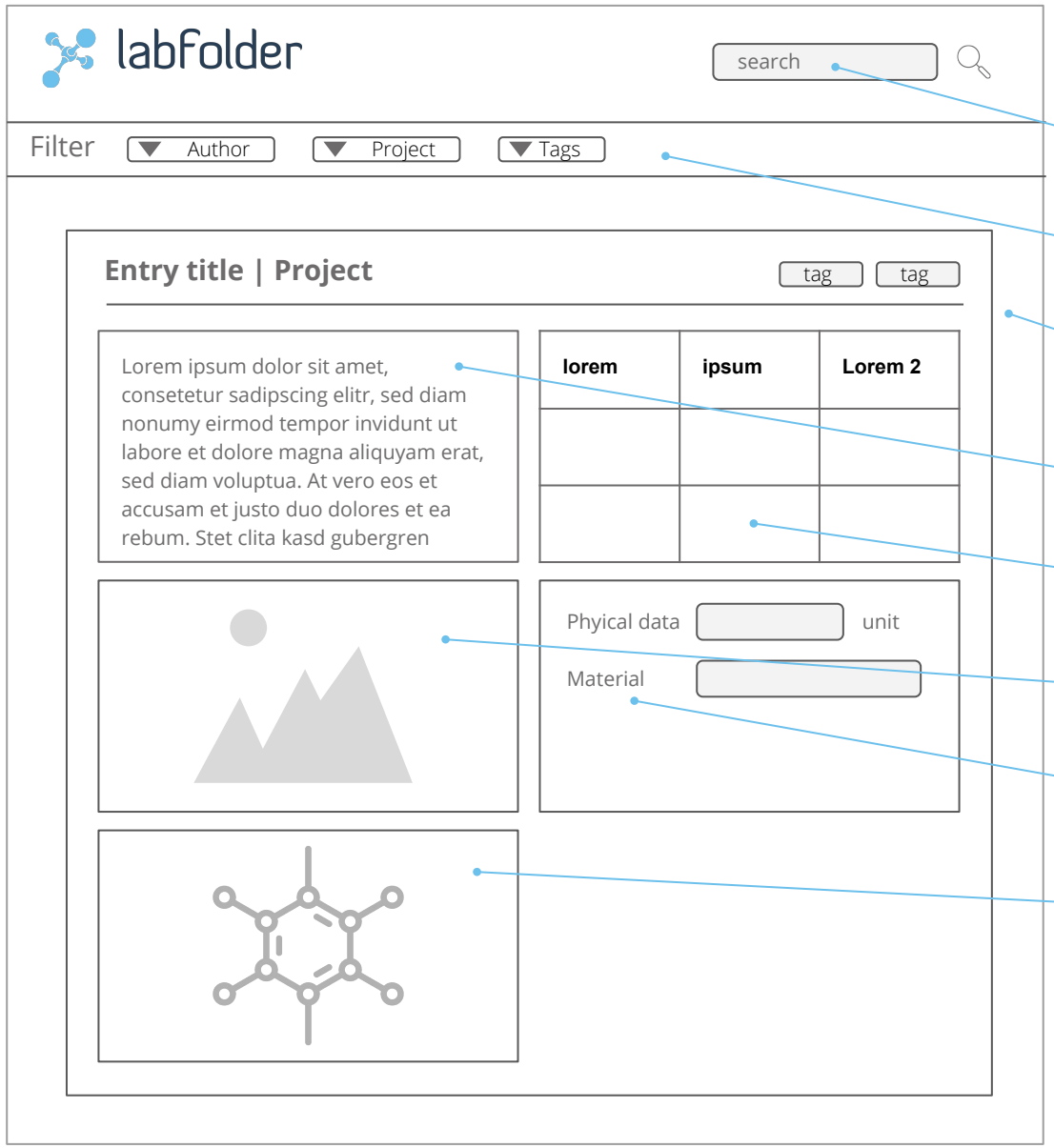
As WT1 exhibits specific functions depending on tissue and cellular context, using these cell lines disclosed interesting outcomes following WT1 induction, but came along with multiple limitations. Therefore, my final goal was to derive embryonic stem cells (ES) to generate mouse models, in which the expression of single variants could have been temporally(and spatially) controlled.

In this thesis I will first explain the cloning process to generate plasmids for the inducible expression of WT1 single isoforms, second I will describe the stable and inducible epithelial cell models and ES cells derived with these plasmids. Last, I will discuss the results obtained from the induction of single WT1 isoforms in the differentiated cell lines.

Four_main_Isoforms_WT1.jpg



PRODUCT: CORE FUNCTIONALITIES



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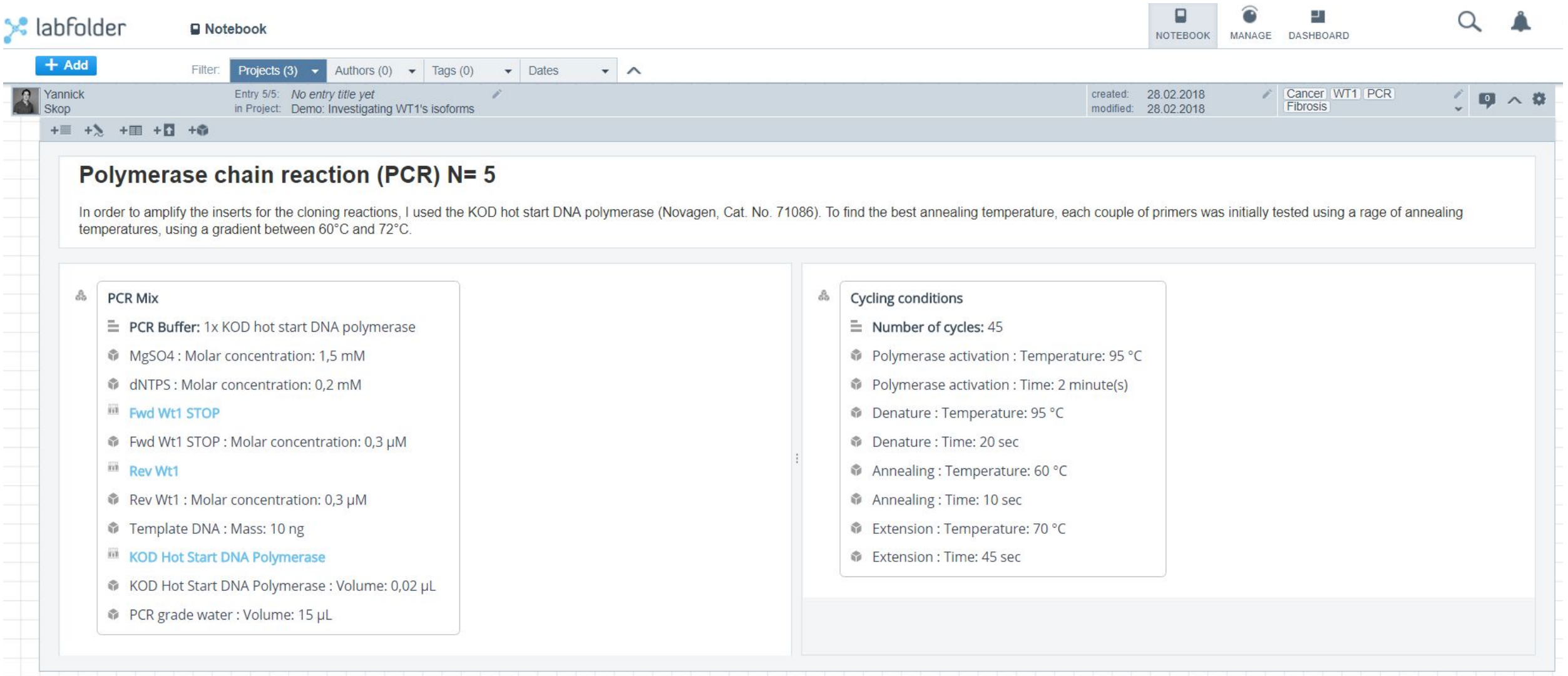
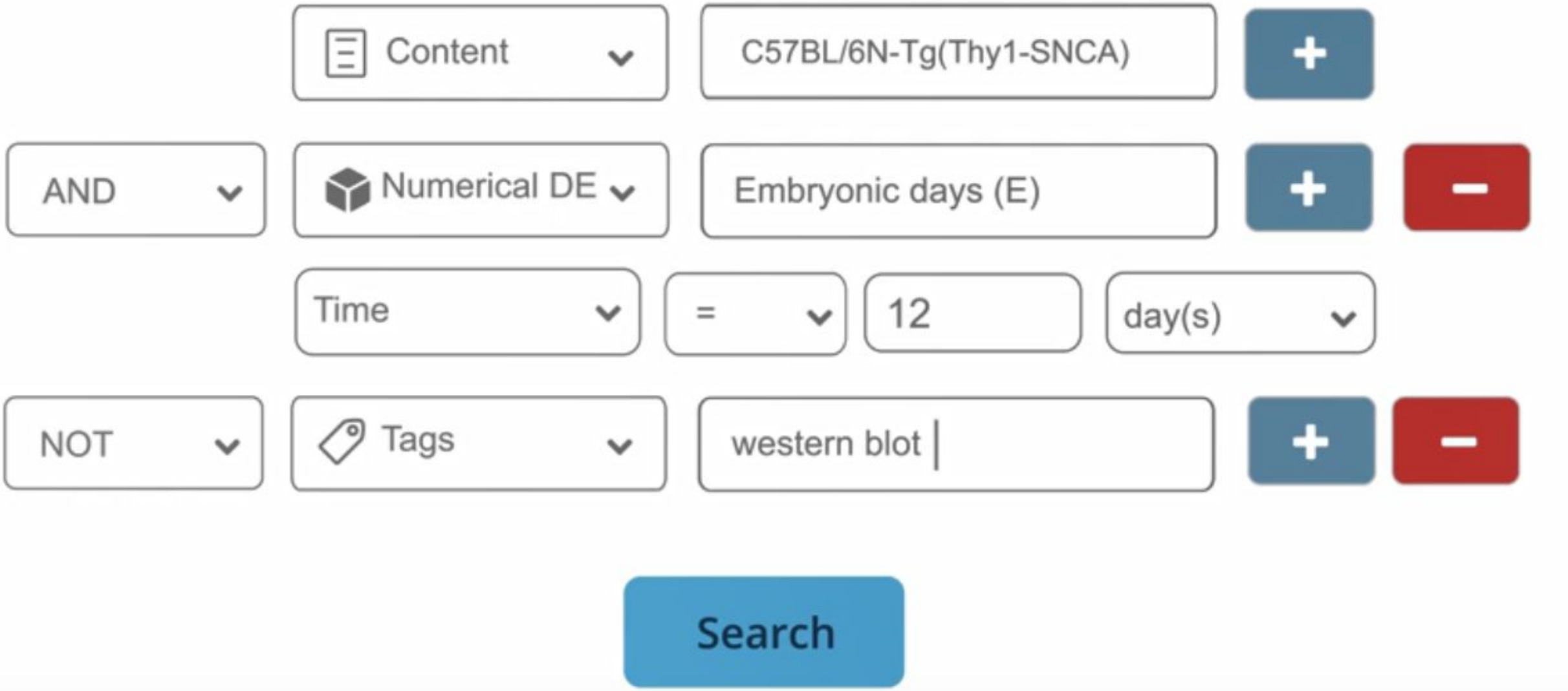


ADVANCED SEARCH CAPABILITIES



USED ACROSS DIFFERENT FIELDS

- Molecular Biology
- Neurogenetics
- Biochemistry
- Chemical Engineering
- Oncology
- Genetic Pediatrics
- Biopolymers
- Plant Biology
- Biophysics
- Biotechnology
- Organic Chemistry
- Neuroscience
- Nanoscience
- Marine Biology
- Immunology
- Materials Engineering
- Chemical Ecology
- Geoscience

DATA ENTRY

Integrate all your data

Drag & Drop all file formats into your electronic lab notebook and have your results side by side with your experimental procedure. Access your data anywhere in the world and download it from any computer.

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Import, preview, and extract Word and Excel files in labfolder's ELN. Work on these documents inside labfolder while always keeping a copy of the original file.

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With labfolder, you can also create a sketch from scratch using our mobile app or web browser.

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Once you have entered data, you may want to export it later. You can download uploaded files in their original format, and we also offer PDF and XHTML exports for entries, projects, and even your entire electronic lab notebook.

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You, as a scientist, permanently remain the legal owner of any data authored by you and uploaded to labfolder. All your data will be accessible only to you unless you explicitly share it or grant access permissions to others, including labfolder.

Cloud system

Use our servers and get 300GB of storage per user. Take advantage of free daily backups and maintenance.

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Always find what you are looking for with our powerful filter tool. Retrieve your data by filtering for projects, team members, dates, and also tags that can be added to each entry and shared in projects.

Time Stamps

All your entries and projects have time stamps that provide valuable information for data creation and modification. You can also add your own time stamps based on experimental needs.

Universal and Advanced Search

Use the search tool in our digital lab notebook to find the content you are looking for in your entire research history. You can search by tags, content, title, and dates such as before, after, or range.

Sign & Witness

Labfolder offers a Sign & Witness app that can be integrated for free. Our tool complies with international laboratory regulations, including FDA CFR 21 part 11.

BUILT FOR TEAM WORK

Create and share projects

You are already collaborating with other scientists in different projects, so why not organize your lab notebook in the same way?

Share projects with specific team members or with your entire team thanks to custom share settings.

Store and share protocols/templates

Create or import protocols and templates in your ELN and share knowledge with your colleagues. If you want to re-use previously recorded information without dedicated protocol templates, clone the original into a new entry.

Discuss your data

Comment and discuss your data with your colleagues inside your lab notebook. You will have access to the group projects and also your team members' notebooks, meaning you can comment on the data and discuss it with them.

Send messages and assign tasks

Unclutter your email from lab related discussions. Use labfolder to message or assign tasks to your team or specific colleagues and follow up on the issues with real-time status updates.

APP INTEGRATIONS

Figshare

Open access is becoming a science standard and we are ready for it. Install the free Figshare app and easily export your lab notebook to the data repository of Figshare.

Dropbox

Export your lab notebook content to Dropbox and easily share it with anyone in the world.

Labfolder API

Labfolder offers a rich API that allows for the integration of different tools, software and instruments.

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Customer Satisfaction Survey 2018

Satisfaction score

9 out of 10

Likelihood to use labfolder in 5 years

9 out of 10

Learn more: www.labfolder.com/case-studies/

THANK YOU FOR YOUR ATTENTION!

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