# LabCollector

## User Manual
## For
## Protein Tracking System
## (PTS)

# Summary

## 1- INTRODUCTION

Thank you for choosing AgileBio solutions for the management of your lab. **The Protein Tracking System (PTS)** is a web-based solution allowing efficient management of all your protein production and purification service activities. Unlimited number of projects can be created. Numerous management tools are included to help your lab managing a protein production service.

The **PTS** module is suitable for routine projects and technical platform service activities. The **PTS** is an Add-on fully integrated with **LabCollector**, the LIMS we developed for life science R&D labs, Pharma and Biotech industries. Indeed, you can link information from LabCollector database to protein production projects.

Note that AgileBio also offers an autonomous version of the **PTS** (without LabCollector). Using this version LabCollector database links aren't permitted.

**LabCollector** is a copyrighted product from AgileBio.

## 2- GETTING STARTED

$Y$ou can get **PTS Add-on** simply by downloading from [www.labcollector.com](www.labcollector.com). LabCollector has to be installed first as it contains the framework. LabCollector support documents for installation are available on our website. **PTS Add-on** can be installed on any operating system (Windows, MacOS X, Linux).

Unzip and paste **PTS Add-on** Folder in the directory:

AgileBio Folder > LabCollector > www > Extra_modules.

Open LabCollector, the **PTS Add-on** module is now activated. Click on the module to finish the installation.

# 3- OVERVIEW

The **PTS** homepage is divided in several sections (see next picture):

- Menu bar
- Language selector
- Dashboards
- Search engine
- Tree view



### 3-1. Menu Bar

The menu bar consists of multiple tabs. The first one "Home" allows users to come back to the homepage of the **PTS** and close all opened tabs. The next tab is used to create new protein production projects. The Admin bar is accessible only by an administrator because it consists of a user access administration table. The last tab allows the administrator to setup the **PTS** module (add custom fields, manage analysis and units).
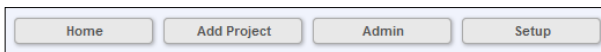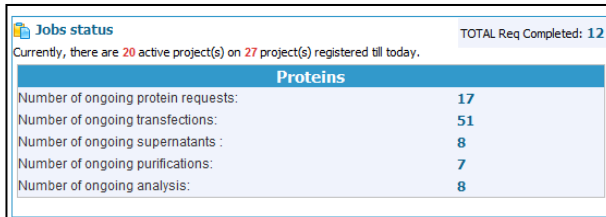


### 3-2. Dashboards

The homepage displays several dashboards, so users can have a look on the activity at a glance.

The first dashboard (Jobs status) is the synthesis of all opened jobs in the lab regarding the protein production activity and an indicator of the total completed

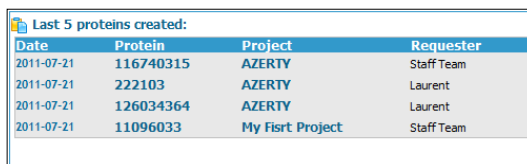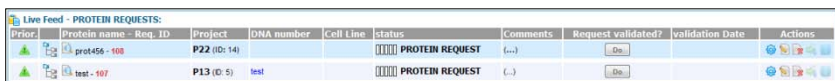request. By clicking the number, you will be automatically redirected on the related page of interest.



The next dashboard displays the last 5 proteins created by users. Each protein is identified by its name, the date of creation, the related project and the requester of the protein production.



The last dashboard is also the main screen of the **PTS**. It is used as a dashboard to check protein production progress and as an operating table to fill information about projects, proteins…



When you get connected to the **PTS**, this dashboard displays automatically protein requests. Several data are available on this dashboard as the production progress and main protein identification information. Protein request step as other process steps of production will be described later in this document.

### 3-3. Search Engine

A search engine is integrated to the module to help user finding information quickly. Filters (Project/Protein/DNA/Assay) in the search engine work with an autocomplete system.

*Definition : Autocomplete system involves the program predicting the word that the user wants to type in without typing it in completely. You can also display information by selecting user and by time period.*



Results are displayed in the main window of the **PTS** and organized according to the category they belong:
- - Protein Request
- - Transfection
- - Supernatant Transfer
- - Purification
- - Analysis

### 3-4. Tree view

The **PTS** allows users to find projects, proteins using a tree view which is a widely used tool to switch from a file to another.

- You can hide the tree view by clicking the arrow on the right in the orange block.

- A quick search section is integrated to search by keyword in the tree view, then you can use "Find", "Find next", "Find prev" to move from a result to another one quickly.
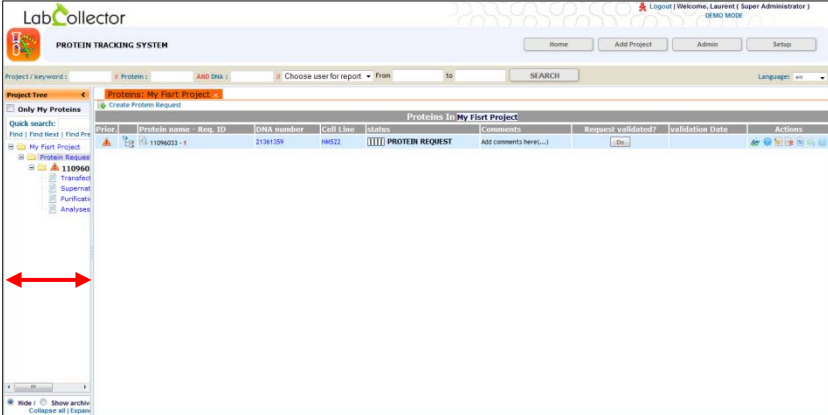
- The checkbox "Only My Proteins" allows filtering information according to user profile: if checked only files you involved in will be displayed. This checkbox can be used as an additional filter of the search engine bar.

- The tree view displays folders organized by projects names, protein requests, protein names and protein production steps. Note that a colored icon ( ⚠ ) for priority level is displayed in front of protein names.

- The last block allows users to display or to hide archived projects. From this section you can also collapse all the tree view or expand it at all.
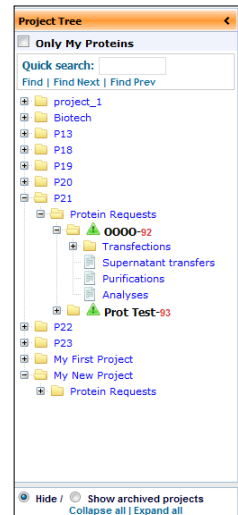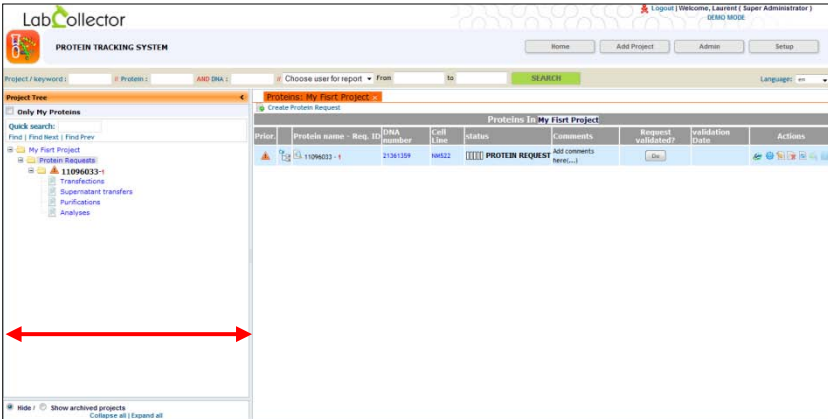
*Tip: the **PTS** tree view window can be resized using the handler bar between the tree view and the main dashboard window. This function is useful to read entire names (projects, proteins…) in the tree view*



*Scroll the handler bar with your mouse to resize the tree view window.*

# 4- SETUP

## 4-1. Admin Tab

Before using the **PTS** module, the administrator has to manage user access by selecting the Admin tab in the menu bar. A popup is displayed showing all contacts in LabCollector database.

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The administrator defines people who can have an access to the **PTS** module. Then, he must choose a level permission for each collaborator (Admin or User). An Admin level status allows a collaborator to manage user accounts and **PTS** setup. Then you can identify people who can create protein request and who can be a project scientific coordinator (PSC). The remaining columns represent protein production steps managed in the **PTS**:

- Protein Transfection Step
- Supernatant Transfer Step
- Protein Purification Step
- Analysis Step

So the administrator can select finely steps that will be accessible for each user. When many users are involved in the protein service activity, a search engine is integrated to find users quickly. You can search by User Name and User Email.

## 4-2. Setup Tab

Once level permissions are defined, staff members with an Admin level permission can setup **PTS** module using the Setup Tab in the menu. The Setup window is divided in 3 main parts:

- Custom Field Editor

You can add many custom fields from this section. Custom fields are used to adapt the **PTS** to your lab needs regarding the protein production activity. Several field types are available like text, web link, checkbox and radio button. Preset values can also be edited. If you decide to enter more than one preset field value, use the | (ALT GR + 6)to separate values.

Then you can identify which protein production step is related to the custom field. A list of edited custom field is displayed below the editor.

- Analysis Editor

The final step for protein production is the analysis to confirm and valid the intermediate or end product. As many analysis methods exist, you can define a list of methods used in the lab to characterize the produced protein.

- Units Editor

As protein requests vary according to client needs, you can define units used in the lab to produce the protein. It can be volume, weight, concentration…
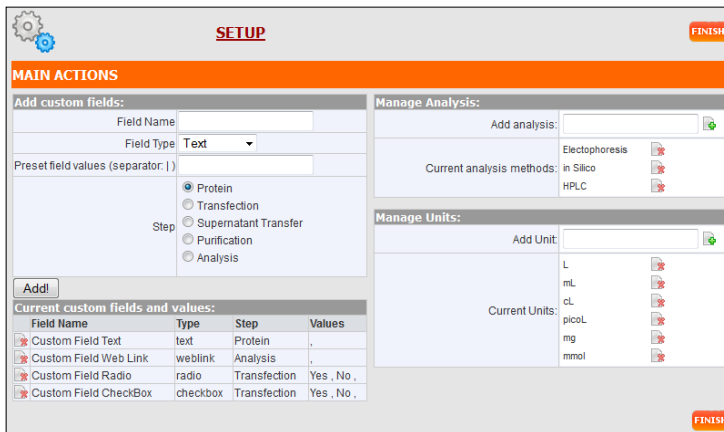
# 5- MANAGE A PROTEIN PROJECT

$\mathsf{T}$his section describes all protein production steps managed in the **PTS** module. The process is divided in 5 parts:

- Protein Request
- Protein Transfection
- Supernatant Transfer
- Protein Purification
- Protein Analysis

## 5-1. Protein Request

When the lab receives a request, the first step is to create a project. A **PTS** project can be related to a single job, multiple jobs or a client. Click the tab in the Menu bar to add a new project which will be identified by a name, a date and a Project Scientific Coordinator (PSC). Once edited, a new folder is created in the tree view.



The main dashboard displays a quick preview of the project. From this preview, 3 buttons are integrated: Delete project / Print project / Archive project. The preview also shows how many proteins are involved in the project and how many are active, ongoing, completed or archived. Note that archiving project is different from archiving proteins. The last line of the preview shows the main information about the requested protein. As it's not edited yet, there is nothing to display.



Now click on the project folder in the tree view, the protein request folder appears and the main dashboard allows you to create new protein requests (  ). Several

fields are displayed to define the request. The first part of the screen is related to general information about the protein and users involved in the project. Some of these fields like Protein name, DNA number, Cell Line, Protein Requester and PSC works with an autocomplete system links to LabCollector database.



Click the "Add user from list" to display the user list. All collaborators are displayed in the list. User access profiles are also shown so you can choose the right collaborators for this request. Multiple users can be selected.



The 2$^{nd}$ part of the protein request is related to DNA preparation. Note that some of protein production steps can be skipped using checkbox (bypass transfection, bypass supernatant transfer, bypass purification). The protein request also integrates email notifications system for each production step allowing users involved in the project to follow up production progress. If custom fields were edited for the protein request step they are displayed in this part.

Once finished, the tree view displays a new folder in the Protein Request folder. This folder represents the protein production process and all production steps are created. When clicking the protein request folder, the main screen shows a synthesis of protein project. To validate the protein request, click "Do", the validation is always dated for traceability. Blue highlighted words mean there are links to LabCollector database (DNA Number and Cell Line). You will find below used icons and their significations:

⚠  Priority level of the job
🔲  Show the Protein in the tree view
🔍  Show Protein details
▌▌▌▯▯  Production progress (number of validated steps)
🔷  Open the LabCollector protein file in a new window
⚙  See progress details
🔖  Edit protein file
🔖  Delete protein file
📄  Duplicate protein file
🔷  Create a derived sample in LabCollector database
🔷  Open the LabCollector derived sample in a new window



Once the protein request is validated, click the Protein Request folder in the tree view and have a look on the main dashboard: the progress bar is modified. You can continue with the next step (Protein transfection) or create another protein request.
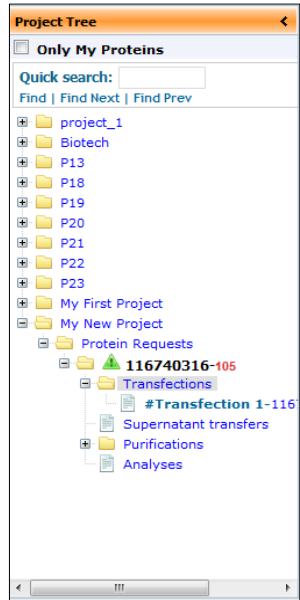
## 5-2. Protein Transfection

After protein validation, go to the tree view and open the protein folder, the transfection file is automatically created. Click on Transfection, the main dashboard shows the validated protein request. You can edit the file (🖉) or add new transfection in the same request.



*Note: the **PTS** module operating mode is always the same. Once you have finished a step, you can follow up the production progress using the tree view (click the Protein Request folder). Then choose the file of interest to begin the next step then click the icon to define it ( ➕ ).*

*Reminder: protein transfection and/or supernatant transfer steps can be skipped (See Protein Request section).*

The Protein transfection step allows authorized users to add information about this process. Transfections are identified by a batch number.

The operation is always dated. Fill the different standards and custom fields. If you need to link cell culture data from a local or web server, paste the pathway to the file of interest. You can add multiple cell culture links.

When finished you must complete the step by clicking the « Do » button. You can add new transfection steps or click the Protein Request folder to check the project progress. Choose the Supernatant Transfer folder to go to the next step.



### 5-3. Supernatant Transfer

After protein transfection, choose the supernatant transfer folder in the tree view and create a new supernatant file from the main dashboard ( ). A transfection batch selector is integrated to find quickly the right transfection. Fill requested fields if necessary and save file. You can now validate it with the "Do" button then create new supernatant transfers or go to the purification step.

## 5-4. Protein Purification

To begin this step, open the protein folder in the tree view and choose the Purification folder. Some fields are pre-filled but you can modify them ( ).

*Note: the "Link to Data" field isn't active the first time (you must open the file again).*
*Note bis: ETA Estimated Time of Achievement / LPS field means LipoPolySaccharides.*



The purification step section integrates a "Start" and a "Do" button meaning the beginning and the end of purification process are recorded.

### 5-5. Protein Analysis

When protein purification step is complete, you can move to the final step: Protein Analysis. Open the Protein Request folder in the tree view and select Analysis folder. You can edit the file to define the protein analysis method used in this project.



When analyses are finished you can click the step complete button "Do". Go to the protein request folder and check the protein production synthesis. All steps are now completed and the job is done. Click the Protein Detail icon ( 🔍 ) and you can archive the protein ( 📁 ) and go to another job in the same project or in another project.

# 6- UPGRADING AND UPDATING

To update or upgrade the **PTS Add-on** module, just download it on our website ([www.labcollector.com](http://www.labcollector.com)). Then, unzip the folder and paste files in the following folder:

Programs > AgileBio > LabCollector > www > LabCollector* > Extra_Module > Protein_Tracking_System

*The name of this folder is the Laboratory Nickname chosen when LabCollector was installed.*

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