



# User Manual For Protein Tracking System (PTS)

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# **1- INTRODUCTION**

 ${\sf T}$ hank 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.

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# **2- GETTING STARTED**

 $\mathbf{Y}_{\mathsf{ou}}$  can get PTS Add-on simply by downloading from <u>www.labcollector.com</u>. (

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.

#### OVERVIEW

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# **3- OVERVIEW**

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

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

PROTEIN TRACKI	NG SYSTEM				Rome		ldd Project	Admin	Setap
roject / keyword :	Anjohan	· # Protein :	AND DNA :	AllD Amey	• # Choose user for re-	ot From	ha	SEARCH	Languaget an
vuject Tree	•	Tobs status		T	TAL Res Completed: 0	Last pro	trins created:		
Only My Proteins		Currently, there are 10 ac	tive project(s) on 11 project(s) ne			Date	Protein	Project	Requester
Quark search: Tivd [Find litest   Find Prev Prot02979029 Prot08020 Prot08020 Prot092029 Prot7920 Prot7920 Prot7920 Prot7920 Prot7920		Number of angoing pri Number of angoing tra Number of angoing su Number of angoing pu Number of angoing an	nsfections: pernatar/ts : ritications:	ins 1 7 2 2 2		2012-02-17 2012-02-17 2012-02-17 2012-02-18 2012-02-18 2012-02-18 2012-02-18 2012-02-18	Prot8101 Prot7902 Prot1	BGD0012 Prot9628 LANG2012 Test bypass 62097029 Prot7920 718691	
ANG2012 Pro19628 BGDU012		Live Feed - PROTE Prior Proteins	ume - Reg. ID Project	ONA number (C t (ID: 11), 2		EIN REQUEST		lated) validation (	Actions

## 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).

Home	Add Project	Admin	Setup

## 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.

🛍 Jobs status	TOTAL Req Completed: 12
Currently, there are 20 active project(s) on 27 project(s) registered	till today.
Proteins	
Number of ongoing protein requests:	17
Number of ongoing transfections:	51
Number of ongoing supernatants :	8
Number of ongoing purifications:	7
Number of ongoing analysis:	8

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.

Date	Protein	Project	Requester
2011-07-21	116740315	AZERTY	Staff Team
2011-07-21	222103	AZERTY	Laurent
2011-07-21	126034364	AZERTY	Laurent
2011-07-21	11096033	My Fisrt Project	Staff Team

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...

Live Feed - PROTEIN REQUESTS:							
Prior. Protein name - Req. ID	Project	DNA number	Cell Line	status	Comments	Request validated? validation Date	Actions
📥 🔁 🖸 prot456 - 108	P22 (ID: 14)			[[[]]] PROTEIN REQUEST	()	Do	@ 🗟 🗟 🖏 🛄
🔺 😫 🗈 test - 107	P13 (ID: 5)	test		[[]][] PROTEIN REQUEST	()	Do	•

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.

Longuager

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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:

AND Assey

• // Choose user for report • From

AND DHA

- Protein Request
- Transfection
- Supernatant Transfer

Anywhere - I Proteil

- 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 ( <sup>(A)</sup>) 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* 

LabCollector		2	and the second		DEMO MOD	(Super Administrator ) DE
PROTEIN TRACKING SYSTEM			Home	Add Project	Admin	Setup
oject / keyword : / Protein : AND DN	A : # Choose user for re	eport • From to	SEARCH			Language: en 👻
oject Tree    Proteins: My Fisrt Project :  Create Protein Request						
Unity Hy Proteins		Proteins In M				
Ind   Find Next   Find Pre Ny Fisrt Project	DNA number Cell Li 21361359 rm522	ne status	Comments Add comments here()	Request validated?	validation Date	Actions
Libéd     Libéd     Superative     Superative     Andysee						

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

Labcollector			2	232.02	2693	Logout   W	Aelcome, Laurent DEMO MOI	(Super Administrator ) 3E
					Home	Add Project	Admin	Setup
Project / keyword : # Protein : AND DNA :		Choose user for report - From	a to	SEA	RCH			Languages en 🗣
Project Tree		teins: My Fisrt Project ×						
Conly My Proteins	0 078	ate Protein Request		Proteins In M	First Project			
Quick search: Find   Find Next   Find Prev	Prior.	Protein name - Reg. ID	NA Cell unber Line	status	Comments	Request validated?	validation Date	Actions
B Wy First Project B Protein Requests B A 11096033-1		And a subscription of the subscription of the subscription of the	361359 NM522	([[]]] PROTEIN REQUES	Add comments here()	De	(Julie	@ 9 9 9 9 4 U
<ul> <li>Supervalant tranfors</li> <li>Portugation</li> <li>Analyses</li> </ul>	•							
Hide / Show archived projects Collapse all Expand all								

# **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.

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.

earch User By: er Name:			AND Use	r emai	I:			Searc
								INISH
8	6	8			4			
Jean	0	Admin	Prot. req.	PSC	Transf.	Sup. transf.	Purif.	An.
Alan Jones	ŏ	Admin		V	V	V		
Joe Smith	õ		V		V			
Pierre	Õ	Admin						
Wagner	0	Admin	<b>V</b>					
Marie	0	Admin						
John	0	User						
Erdal	0	User						
Laurent Perrier	0	User						
Michel	0	User						

## 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...

MAIN ACTIONS						
Add custom fields:				Manage Analysis:		
Field Name	9			Add analysis:		
Field Type	Text	•			Electophoresis	
Preset field values (separator:	eset field values (separator,   )			Current analysis methods:		
Protein				HPLC		
○ Transfection Step ○ Supernatant Transfer						
			Manage Units:			
© Purification			Add Unit		[	
	Analys	Analysis			L	
					mL	
Add!					cL	
Current custom fields and Field Name		Char	Values	Current Units:	picoL	
Custom Field Text	Type text	Step Protein	values		mg	
Custom Field Web Link	weblink	Analysis	•		mmol	
Custom Field Radio	radio	Transfection	, Yes, No,			
Custom Field CheckBox	checkbox	Transfection	Yes, No,			

This 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.

Add project ጰ		
		ADD A NEW PROJECT:
Project Code:		
Date:	2012-02-20	
Project Scientific Coordinator:	Pierre -	
Add project		

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.

	Project PTS769880 Preview	🗰 🗰 📾					
Quick preview:							
Project Code:	PT5769880						
Creation Date:	2012-02-20	1					
PSC:	Claire	Archive project					
Total Proteins in Project: 0 active : 0 ongoing and 0 completed / 0 archived							
Prior. Protein name - Reg. ID	DNA number Cell Line status Comments Request validated? validation Da	te Action					

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 ( $\mathbb{R}$ ). 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.

	Pn	oteins In My New Project			
ATE PROTEIN REQUEST					
ein Details		Users Details	-		
Protein name:		Protein Requester:			
DNA number:		PSC:			
Amount:	L •	End User(s):		Add user from list	1
Cell Line:		Status Details			
Expected MW(kDa):		Request Date:	2011-07-20		
C Stable /	Transient	Priority:	Low -		
iments					-
Modifications:					
Piourcacions.					
Comments:					
Commerces					

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.

	Select Users To Add:	
		FINISH
User name	User Role	Add
Joe Smith	Admin - Protein Requester - Project Scientific Coordinator - Transfection team - Supernatant Transfert team - Analysis team	
Pierre	Admin - Project Scientific Coordinator	1
Daniel		1
Wagner	Admin - Protein Requester	
Laure Sabatier	- Frolein Requester	
		FINIS

The 2<sup>nd</sup> 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.

DNA Prep Required?	YES 🖲 NO			
Send mail to:		DNA Prep number:	(from plasmids)	
Seq. Confirmed by:		Construct made by:		
DNA Comments:				
ional options				
lypass Transfection 🔲 Bypass Su	per. Transf. 🔲 Bypass Purification			
Send mail to	Protein Requester			
Send mail to	End User(s)			
protein checkbo	c 🖾 protval1, protval2			
Test separateu	r: bleu			
	t: test			

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)
- Øpen 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

Proteins: My New Project 🙁											
Create Protein Request											
Proteins In My New Project											
Prior. Protein name - Reg. ID	DNA number	Cell Line	status	Comments	Request validated?	validation Date	Actions				
A 23 116740316 - 105	seq 2	NM522/pT218	IIII PROTEIN REQUEST	add comment()	Do						

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.

	© Create Protein Request									
© Create Protein Request Proteins In My First Project										
Prior.	Protein name -	Req. ID DNA number	Cell Line	status	Comments	<b>Request validated?</b>	validation Date	Actions		
Æ	🔁 🕒 11096033 - <b>113</b>	11096033	NM522/pTZ18	PROTEIN VALIDATED	add comments()	🤣 by Pierre	2011-07-21	🖉 🖗 🗑 📷 🗟 🖏 🛛		

## 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  $(\mathbb{N})$  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 ( $\fbox$ ).

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.



		Transfections On My New Pr	roject For Request ID: 105 / 3	116740316			
insfection Batch #	Date	Comments	and proceedings and the second s	Step completed?	End Date	Actions	
Transfection 1	2011-07-20	Add comments		Do			-
DIT TRANSFECT	ION FOR PROT. REQU	EST: 105 / 116740316					
	Transfection batch no.:	Transfection 1	Tra	insfection date : 20	11-07-20		
		Add links related to this tran			Click to add link		
	Operators:	Daniel (1)	Add user from list				
	Send mail to:	Protein Requester PSC Fnd User(s)					
	Custom Field Radio:	O Yes O No					
	Custom Field CheckBox:	Yes No					

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.

Proteins: My New Project 😒									
Create Protein Request									
Proteins In My New Project									
Prior. Protein name - Reg. ID	DNA number	Cell Line	status	Comments	Request validated?	validation Date	Actions		
🔺 🔡 🕒 116740316 - 105	seq 2	NM522/pTZ18	TRANSFECTION DONE	add comment()	V by Pierre	2011-07-20	6 9 9 9 9 9 4		

## 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.

IMv	V New Project] Supe	matant >> F	R: 105	×						1
	Supernatant transfer									-
-		Su	pernata	nt Trans	fers O	Ay New Project For Request ID	105 / 116740316			
ADD S	UPERNATANT									
	Protein Batch: #Trans	fection 1 - 1167	40316 •							
SUPFI	RNATANT TRANSFI	R PARAMET	FRS							i l
		Volume:		L	•					
		Date:	2011-07-2	20						
		Comments:								
		Operators:				Add user fr	om list			5
		Send mail to:		ein Reques user(s)	ter					2
						Save				
No.	Batch #	Date	Comr	nents			step completed?	end date	Actions	
50	Transfection 1						Do		🕞 😒	

# 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 ( $\Im$ ).

*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.* 

	Pu	rifications On My New	Project For Request ID:	: 105 / 116740310	5		
D PURIFICATION							
lect Transfection Batch: #Transfe	ction 1 - 116740316	(52) · (with completed super-	satant)				
PDATE NEW PURIFICATION F	OR BATCH: #TF	RANSFECTION 1					
ETA:	2011-07-20			Concentration:		L	•
Amount:		L •		LPS:		L ·	-
Link to Data:	YOU NEED TO S	SAVE FURIFICATION FIR	ST BEFORE ADDING LINKS				
operators:			Add user from list	]			
Send mail to:	Protein Reque	ster					
Comments:							
Batch # Conc.	Amount Commen	fs	Save	start Date	step Completed?	end [	Date Action

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

O Add	Purification							
		Purifications On M	y New Project For Request	ID: 105 / 116740	316			
	Batch # Conc.	Amount Comments	Initiated	start Date	step Completed?	end Date	Acti	ion
25	C Transfection 1 1 mmol	2 mg Add comments	🥜 by Pierre	2011-07-20	Do		1	8
26	Transfection 1 1 mmol	3 mL Add comments	Start		Do		1	1
					Charle Dates		_	2
	Purification ID:				Start Date:			
	ETA:	2011-07-20			Concentration: 1			
		2011-07-20 3 mL Protein Requester						
	ETA: Amount:	2011-07-20 3 mL Protein Requester PSC			Concentration: 1			

## 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.

		Analyses On My	New Project For Request ID: 105 /	116740316		
	Batch #	Analysis Analysis d	te Comments	Step Completed?	End Date	Actions
5	Transfection 1	HPLC 2011-07-20	Add comments	🤣 by Pierre	2011-07-20	1
6	C Transfection 1	HPLC 2011-07-20	Write your comments here!	De		D 1
NALY	SIS FOR BATCH: #TRANSFECT	TION 1 For PROTEIN REQ. # 105 /	116740316		DNA: S	EQ 2 📄
	ID: 2	26		Test perfor	med: HPLC	
		Analyze 2			Date: 2011-07-20	
		Nrite your comments here!				
	Link to data:	/LOCAL SERVER/ANALYZE FOLDER/PROTE	N 116740316 DATA			
	Operators:	Daniel (1)   Pierre (5)				
	Send mail to:	Protein Requester PSC End user(s)				
	Custom Field W	tak tisk				

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 ( $\mathbb{R}$ ) and you can archive the protein ( $\mathbb{P}$ ) and go to another job in the same project or in another project.

Proteins: My New Project 😒									
Create Protein Request Proteins In My New Project									
Prior.   Protein name - Reg. ID	DNA number	Cell Line	status		Request validated?	validation Date	Actions		
🔺 🎦 🕮 116740316 - 105	seq 2	NM522/pTZ18	ANALYSIS DONE	add comment(,)	🖋 by Pierre	2011-07-20	# @ 🖢 🖻 🗳 🗉		

# 6- UPGRADING AND UPDATING

 $T_{\text{o}}$  update or upgrade the **PTS Add-on** module, just download it on our website (<u>www.labcollector.com</u>). 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.



#### http://www.labcollector.com

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