

LabCollector



User Guide For LabCollector SNP Manager



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1- INTRODUCTION

Thank you for choosing one of AgileBio's solutions for the management of your lab.

1

The **SNP Manager Add-on** for LabCollector LIMS allows users to manage tubes containing markers used in SNP genotyping Platform.

This add-on is dedicated to the treatment of SNP Genotyping workflow and the generation of marker picklists for Fluidigm EP1 file creation.

2- INSTALLATION

You can obtain **SNP Manager Add-on** simply by downloading it from www.labcollector.com. LabCollector software has to be installed first as it contains the framework. LabCollector support documents for installation are available on our website. **SNP Manager Add-on** can be installed on any operating system (Windows, MacOS X and Linux).

2

Unzip and copy-paste **SNP Manager Add-on** Folder to the “extra modules” folder. For Windows it would look like:

```
C:\Programs\AgileBio\LabCollector\www\Extra_modules\snp_manager
```

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

The **SNP Manager Add-on** requires a configuration step of the database (Figure 1). This step adds custom fields in LabCollector **Samples module**. These custom fields are necessary for the correct functioning of this add-on.

Installation process

Setup

The SNP manager add-ons requires a step of configuration of the database.
This step is going to add some custom fields into the Samples module.

Preferences

The default separator you want to use in the generated files by SNP Manager:
Comma (.)

The documents categorie where your request will be saved:
SNP Manager requests

The plate type for the fluidigm EP1 file:
SBS96

Proceed to installation

Figure 1

At this step, you will set the preferences:

2

- The **separator option** defines the separator used in files generated by the SNP Manager Add-on (EP1 file or picking list) and the separator selected by default for file import (scan files or new marker instance).
- The **documents categories option** configures the document category in which user requests will be saved. The add-on automatically creates the “SNP Manager Requests” category but you can choose any other category available in the Documents module.
- The **plate type option** incorporates the plate type model used in the EP1 file generated by the add-on.

Once you have selected the options, click on the **Proceed to installation** button to finalize the installation.

At this step, a list of custom fields will be added to LabCollector Samples module:

- Technology.
- Alias.
- Design strand.
- FAM allele.
- VIC allele.
- Ordering status.
- Ordering code.
- Performance.
- Validation.



Do not delete those custom fields.

3- SNP MANAGER INTERFACE

3-1.Homepage

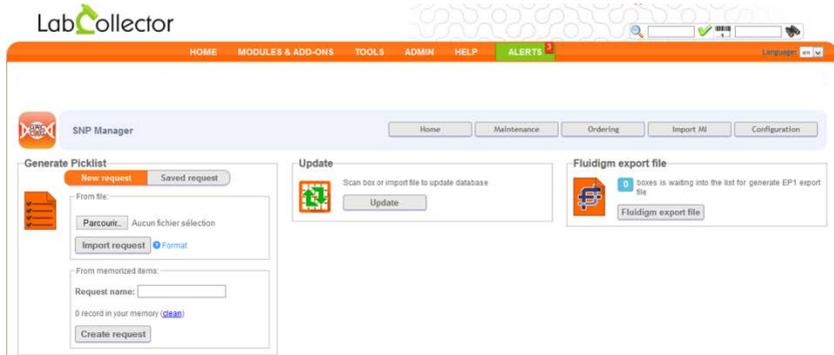


Figure 2

The main interface of the SNP Manager Add-on (Figure 2) presents the three steps of the workflow:

- Picklist creation from a request list.
- Tube position and location update.
- Fluidigm EP1 files generation.

There is also a menu bar for additional functionalities:

- **Maintenance:** To perform tube and marker update and status changes.
- **Ordering:** - To see marker lists waiting to be ordered.
- To import new tubes to the database.
- **Import MI:** To import new markers to the database.

3-2.Import new Marker Interface

The first step to use your SNP Manager Add-on is to import new marker instances to the database.

To import new markers, you have to go to the import marker interface (Figure 3) by clicking on the **Import MI** button in the menu bar.



Figure 3

Then, upload new markers by clicking on **choose file** and select the file containing your markers list in the browser window. You have to check that you have the appropriate file separator for the file that you are willing to upload. Then click on the **Import** button.

You can have more information on file format by clicking on the **Format** link next to the **Import** button.

A list of markers is displayed (Figure 4). Here you can verify marker information.

Marker ID	Preferred Name	Design strand	FAM Allele	VC Allele	Order code	Technologie
mBRS00001111_C01	CROPS0111	+	A	C	4389375	KASP
mBRS00001112_C01	CROPS0112	-	T	C	4389376	KASP
mBRS00001113_C01	CROPS0113	-	T	C	4389377	KASP
mBRS00001114_C01	CROPS0114	-	T	G	4389378	TaqMan
mBRS00001115_C01	CROPS0115	+	T	C	4389379	TaqMan
mBRS00001116_C01	CROPS0116	-	A	G	4389380	KASP
mBRS00001117_C01	CROPS0117	+	A	G	4389381	KASP
mBRS00001118_C01	CROPS0118	+	T	C	4389382	KASP
mBRS00001119_C01	CROPS0119	+	T	C	4389383	KASP
mBRS00001120_C01	CROPS0120	-	C	T	4389384	KASP

Save into database

Selecting ordering status:

To be ordered

Ordered

No action

Save

Figure 4

To finalize the import, click on the **Save** button at the bottom of the page (Figure 5). You can choose the ordering status for these markers by selecting the desired status in the list.



Save into database

Selecting ordering status:

To be ordered

Ordered

No action

Save

Figure 5

Once the markers are imported into the database, a confirmation message is displayed (Figure 6). You can click on **view records** to see the list of the last markers created in LabCollector Samples module. To return to the SNP Manager add-on main interface, click on **return home**.



Tabulation

Import Format

New marker successfully import to database

view records return home

Figure 6

3-3.Ordering Interface

The Ordering interface allows you to add newly ordered tubes to the database and to link them to an existing marker. You can also visualize the marker lists which have the "to be ordered" status.

3

To go to the ordering interface (Figure 7), click on the **Ordering** button in the menu bar.



Figure 7

The ordering interface is separated in two functions: Receive Tubes and Order Tubes.

3-3-1.Receive Tubes

Receive Tubes function allows you to add new tubes to the database. To add tubes, click on the **Choose file** button (Figure 8) and select the file containing your marker list in the browser window. Check that you have the appropriate file separator for the file you wish to upload. Then click on the **Import** button.

You can have more information on file format by clicking on the **Format** link next to the **Import** button.

Figure 8

Once the file is imported, a table listing the new tubes is displayed (Figure 9). By default, their status is “backup”.

Receive tubes
List of receive tubes

	Marker UID	Preferred Name	Tube code	Status
<input checked="" type="checkbox"/>	mBRS00001111_C01	CROP50111	125100	Backup
<input checked="" type="checkbox"/>	mBRS00001112_C01	CROP50112	125101	Backup
<input checked="" type="checkbox"/>	mBRS00001113_C01	CROP50113	125102	Backup
<input checked="" type="checkbox"/>	mBRS00001116_C01	CROP50116	125105	Backup
<input checked="" type="checkbox"/>	mBRS00001117_C01	CROP50117	125106	Backup
<input checked="" type="checkbox"/>	mBRS00001118_C01	CROP50118	125107	Backup

--- Status for selected tubes: ---
Change status for the selected tubes before save them in database, the default status will "backup".

Active
 Backup
update status

--- Save tube to database: ---
This last step will save all the tubes of your list in the database, be sure that all tubes status are correct before processing.

Save

Figure 9

To change the status, select the corresponding tubes by clicking on the checkbox on their left. Then, select the new status at the bottom left corner of the page and click on the **update status** button (Figure 10).

Status for selected tubes: ---

Change status for the selected tubes before save them in database, the default status will "backup".

Active
 Backup
update status

Figure 10

When you have completed and updated the information, click on the **save** button on the right (Figure 11) to save the new tubes into the database.



Figure 11

Once the new tubes are successfully imported into the database a confirmation message is displayed (Figure 12). You can click on **Update tube position** to access the maintenance interface and perform box database update. For more details, please refer to Section 3-4. Maintenance Interface.

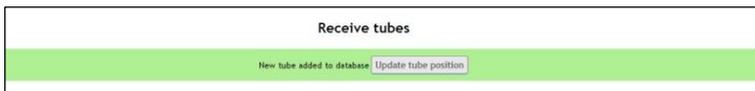


Figure 12

3-3-2.Order tubes

You can access the marker lists with "to be ordered" status by clicking on the **order** button on the right of the Ordering interface (Figure 13).



Figure 13

The Order list allows you to export a list of selected markers in the .csv file format. Simply, select the needed markers and click on **Generate a list for selected markers** button (Figure 14).



Figure 14

Once these markers have been ordered, you can also change their status by selecting the needed markers and clicking on the **Change status of the selected markers to ordered** button (Figure 15).



Figure 15

3-4.Maintenance Interface

The Maintenance interface allows users to perform actions on tubes and markers stored in the database. You can change the status of tubes and markers or update tube position and location.

To access the Maintenance interface (Figure 16), click on the **Maintenance** button in the menu bar.

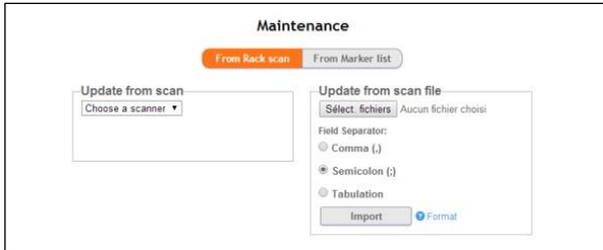


Figure 16

You can perform maintenance actions on tubes and their associated markers by scanning boxes ("From Rack scan" tab) or by updating a predefined list of markers ("From Marker list"). Just select the corresponding tab (Figure 17). These two means are explained in the following two sections, respectively.

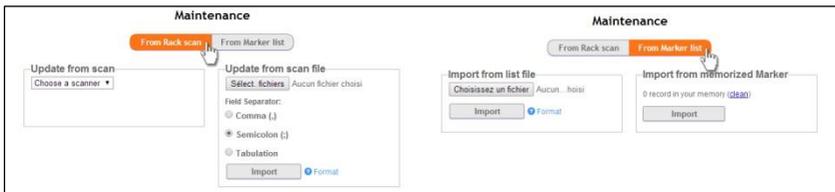


Figure 17

3-4-1. Scanner tool

You can perform scanner maintenance in two ways:

- Directly scan the box with the scanner functionality integrated in LabCollector
- Upload scanner files.

To perform maintenance by direct scan, select the scanner in the drop-down menu and click on the **Scan** button (Figure 18).



Figure 18

Once the scan is performed, a box layout is displayed (Figure 19). At this step, users can verify information accuracy.

	1	2	3	4	5	6	7	8	9	10	11	12
A	0029507 226				0029507 243		0010823 734	0010823 735	0010823 736	0010823 737	0010823 738	0010823 739
B	0029507 193				0029507 230		0010823 746	0010823 747	0010823 748	0010823 749	0010823 750	0010823 751
C	0029507 169				0029507 211		0010823 758	0010823 759	0010823 760	0010823 761	0010823 762	0010823 763
D	0029507 199				0029507 166		0010823 770	0010823 771	0010823 772	0010823 773	0010823 774	0010823 775
E	0029507 236				0029507 246		0010823 782	0010823 783	0010823 784	0010823 785	0010823 786	0010823 822
F	0029507 237				0029507 208		0010823 794	0010823 795	0010823 796	0010823 797	0010823 798	0010823 811
G	0029507 188				0029507 170		0010823 806	0010823 807	0010823 808	0010823 809	0010823 810	0029507 176
H	0029507 206				0029507 167		0010823 787	0010823 819	0010823 820	0010823 821	0010823 799	0010823 818

8/PPL

validate

Figure 19

If the box layout is as expected, click on the **validate** button to perform database update.

To perform maintenance by scan file upload (Figure 20), click on the **Select files** button and select the request file in the browser window. You have to check that you have the appropriate file separator for the file that you wish to upload. Then click on the **Import** button to perform database update.

You can upload multiple scan files at once by selecting multiple files in the browser window. Make sure that all these files have the same field separator.

You can have more information on file format by clicking on the **Format** link next to the **Import** button.

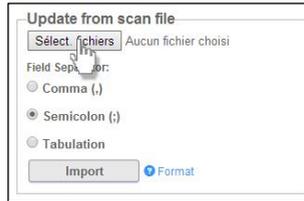


Figure 20

When you validate a box scan or a scanner file import, an update of the database is automatically performed and you are directed to the tubes view (Figure 21).

Rack list							
Tubes added							
Tubes removed							
Tubes moved							
List of tubes for the rack: test-rack_01							
Marker UID	Preferred Name	Tube code	Rack	Position	Status	Ordering	
<input checked="" type="checkbox"/>	mBRS00001112_C01	CROPS0112	125101	test-rack_01	A1	Backup	
<input checked="" type="checkbox"/>	mBRS00001111_C01	CROPS0111	125100	test-rack_01	B1	Action	
<input checked="" type="checkbox"/>	mBRS00001113_C01	CROPS0113	125102	test-rack_01	C1	Action	
<input checked="" type="checkbox"/>	mBRS00001116_C01	CROPS0116	125105	test-rack_01	D1	Backup	
<input checked="" type="checkbox"/>	mBRS00001117_C01	CROPS0117	125106	test-rack_01	E1	Action	
<input checked="" type="checkbox"/>	mBRS00001118_C01	CROPS0118	125107	test-rack_01	F1	Backup	
<input checked="" type="checkbox"/>	mBRS00001123_C01	CROPS0123	125112	test-rack_01	G1	Backup	
<input checked="" type="checkbox"/>	mBRS00001120_C01	CROPS0120	125109	test-rack_01	H1	Backup	

Action for selected assays:

<p>Status</p> <p><input checked="" type="radio"/> Action</p> <p><input checked="" type="radio"/> Backup</p> <p><input type="radio"/> Empty (the tubes marked empty will be deleted)</p>	<p>Ordering</p> <p><input type="radio"/> To be ordered</p> <p><input type="radio"/> Ordered</p> <p><input type="radio"/> No action</p>
---	--

[update](#)

Figure 21

This view displays the complete list of tubes present in the box as well as the modifications that took place in this box.

You can click on top of the list to see modification details (Figure 21). “Tubes added” displays all tubes added, “Tubes removed” displays all tubes removed and “Tubes moved” displays all tube movements in this box (Figure 22).

Tube code	Position	Marker UID	Preferred Name	Status
125112	G1	m8FS0000112_C01	CRPFS0112	Active
125108	G1	m8FS0000119_C01	CRPFS0119	Backup
125101	B1-A1	m8FS0000112_C01	CRPFS0112	Active
125100	A1-B1	m8FS0000111_C01	CRPFS0111	Active

Figure 22

To change the status, select tubes by clicking on the checkbox on the left. Then, select the new status at the bottom of the page. You can also change the marker status of the selected tubes by choosing the corresponding status in the ordering list. To update the status, click on the **update status** button (Figure 23).

Figure 23

3-4-2.Marker list

You can perform maintenance based on a marker list in two ways:

- Import a marker list file.
- Use LabCollector memorized record functionality.

To upload a file click on “choose file” in the “From file” tab (Figure 24), select the corresponding request file in the browser window, validate and click on the **import** button.

You can have more information on file format by clicking on the **Format** link next to the **Import** button.



Figure 24

To use LabCollector memorized record function, go to the Samples module. Then, load all or only the desired samples and click on the “memorize record” icon on the right of all corresponding samples (Figure 25).

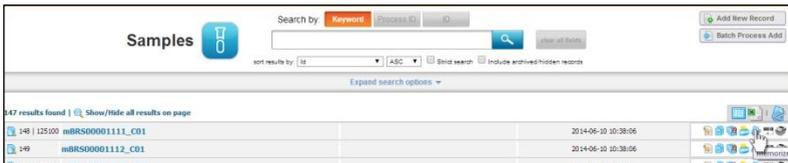


Figure 25

Then, go back to SNP Manager add-on Maintenance interface and click on the **Import** button of the “Import from memorized Marker” tab (Figure 17 & Figure 26).



Figure 26

When you import a marker list from memorized records, you have access to a list of the corresponding tubes.

4. SNP WORKFLOW

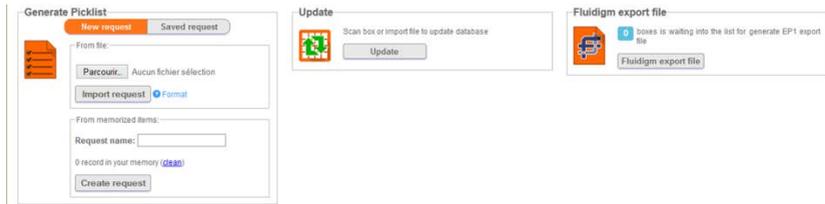


Figure 27

The different steps of the SNP workflow are displayed on the home page of the SNP Manager Add-on (Figure 27).

4-1. Generate Picklists

The Generate Picklist function allows users to either upload a file containing a list of markers ("From file" tab) or search and reload past requests ("Saved request" tab), both of which allow the creation of picklists.

To upload a file click on "choose file" in the "From file" tab (Figure 28), select the corresponding request file in the browser window, validate and click on the **import** button.

You can have more information on file format by clicking on the **Format** link next to the **Import** button.



Figure 28

The request file imported will be automatically saved in LabCollector Documents module under the same name as the request file and in the category previously chosen during the installation process.

If you want to retrieve one of these saved files click on the "Saved request" tab (figure 29 & 30).

Note: The default picklist format applies to the Floyd 2D picker (<http://www.floydubepicker.com/>)



Figure 29

4

This tab will display the last ten saved requests. You can perform a search by request name with the field above the request list then, click on the request file you need.

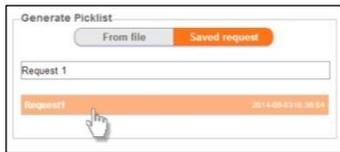


Figure 30

Once a request file is imported or a saved request is chosen, you will be directed to the request interface.

4-1-1.Request interface

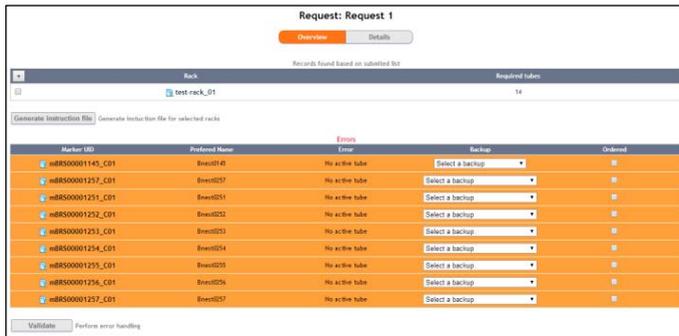


Figure 31

The request interface (figure 31) displays certain information on your request. The first table, at the top of the interface, displays the plate list necessary for the picking process.

You can generate a picklist file for the selected plates in the list. You can select a plate by clicking on the checkbox on the left. Once your selection is made, click on the **Generate instruction file** button to generate the instruction file for the Floyd 2D TubePicker (Figure 32).



Figure 32

The second table informs users if some problems or errors prevent the execution of the request. For examples: no “active” tube for a marker, a marker is unknown in the database...

To address these issues, you can perform actions such as “Selected a backup” tube or order a marker. To choose a “backup” tube: select one in the drop-down menu. To order a marker: click on the checkbox on the right. To validate your action, click on the **validate** button at the bottom of the error table (Figure 33).

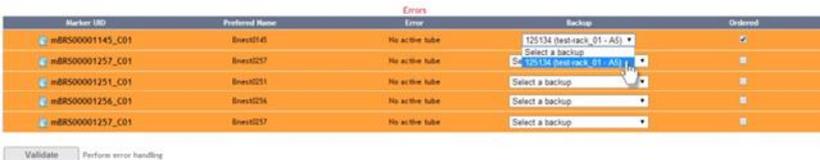


Figure 33

You have access to a details table (Figure 34) of the request that displays for each marker in the list its “active” tube code, plate name and position.



Figure 34

4-2.Update

The Update function allows users to access the scan function to import scan files or directly scan a plate to update tube position and location in the database. To go to the scan interface, click on the **update** button which is in the middle of the main interface (Figure 27 & Figure 35).

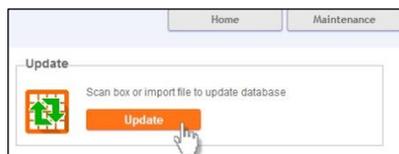


Figure 35

4-2-1.Scanner interface

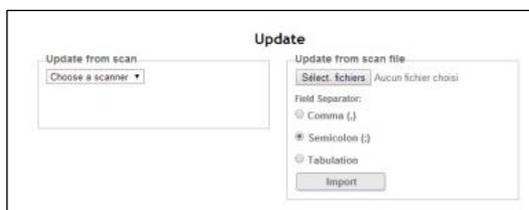


Figure 36

You can perform database update in two ways:

- Directly scan the box with the scan functionality integrated in LabCollector
- Upload scan files.

To perform maintenance by direct scan, select the scanner in the drop-down menu and click on the **Scan** button (Figure 37).



Figure 37

Once the scan is completed, a box layout is displayed (Figure 38). At this step, users can verify information accuracy.



Figure 38

If the box layout is as expected, click on the **validate** button to perform database update.

To perform an update by scanner file upload, click on the **Select files** button (Figure 39) and select the file in the browser window. Verify that you have the appropriate file separator for the file that you wish to upload. Then click on the **Import** button to perform database update.

You can upload multiple scanner files at once by selecting multiple files in the browser window. Make sure that all these files have the same field separator.

You can have more information on file format by clicking on the **Format** link next to the **Import** button.

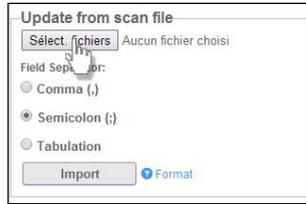


Figure 39

When the database is updated, a confirmation message appears at the top of the Scan interface (Figure 40). Boxes updated in this way are automatically added to the box list ready for the Fluidigm EP1 file export. You can access the “Generate Fluidigm interface” by clicking on the button on the right of the message (Figure 40). You can also perform other database update.



Figure 40

4-3.Fluidigm export file

The Fluidigm export file allows users to access the EP1 interface in which you can create EP1 file for plate selection.

To access the “generate EP1 file interface”, click on the **Fluidigm export file** button on the right of the main interface (Figure 27 & Figure 41).

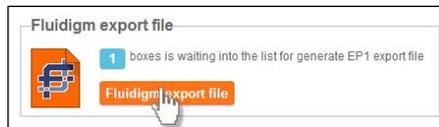


Figure 41

4-3-1 Generate EP1 file interface



4

The Generate EP1 file interface displays the list of boxes waiting for their EP1 file generation. You can fill this list by database update using the update interface or by box search using the field which is just above the list.

To search a box, just type a name into the field (Figure 42), suggestions will be displayed as a drop down list. You can click on a suggestion to complete the field. You can also manually enter the full box name. Then click on the **add** button to add the box to the list.



Figure 42

To generate EP1 file for a specific box, you can click on the **Generate EP1 file** button on the right of this box (Figure 43).

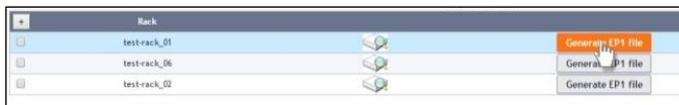


Figure 43

To generate multiple files at once, you can select multiple boxes by clicking on the checkbox on the left and then, click on the **Generate EP1 file** button above the list.



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