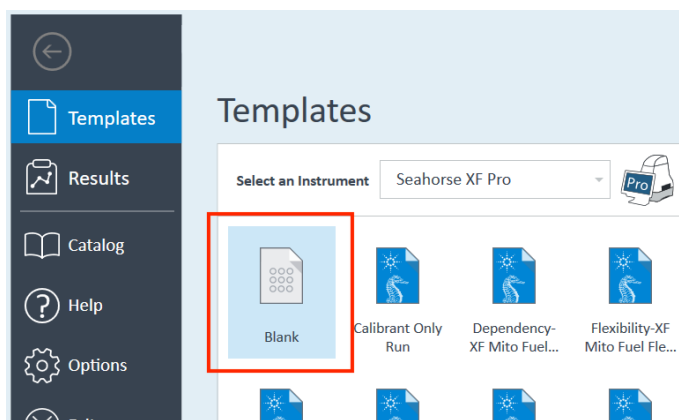


# How to Import Group Definitions and Other Assay Template Properties Using the CSV Import Feature in Agilent Seahorse Wave Pro Software and Agilent Seahorse XF Pro Software

The CSV import feature, available in both Wave Pro and XF Pro software, allows you to quickly create detailed assay template files (e.g., for a compound screen) by importing an Excel spreadsheet – a specially formatted Excel file saved in the CSV file format – containing the desired group definitions, names, plate map assignments, and more.

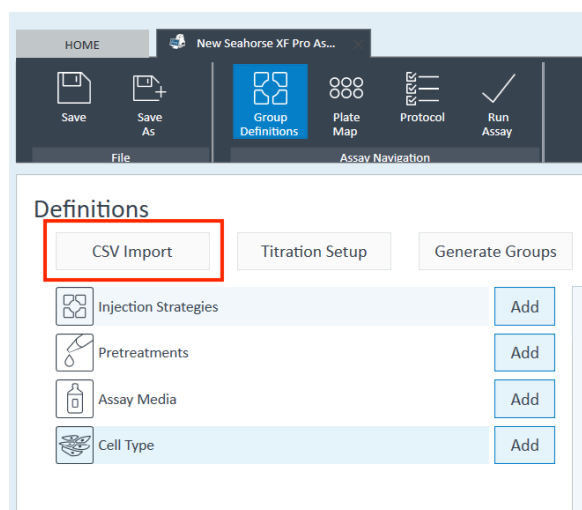
How to use the CSV Import feature:

1. Launch Wave Pro or XF Pro software
2. Open the Blank template from the Templates view (Figure 1).



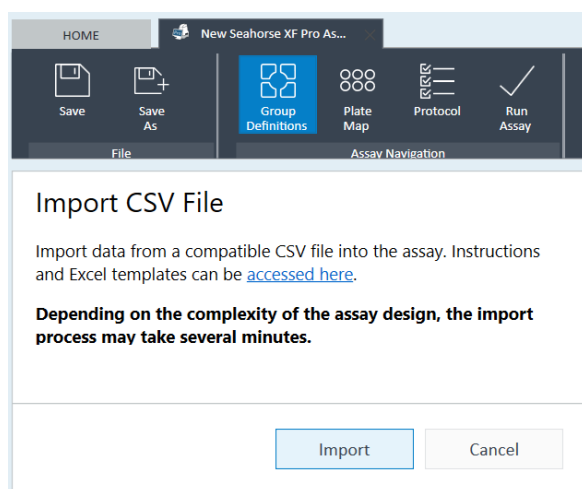
**Figure 1.** The Blank template pictured in the Templates view.

- On the Group Definitions view, click **CSV Import** (Figure 2).



**Figure 2.** CSV Import button.

You are now on the CSV Import view (Figure 3).



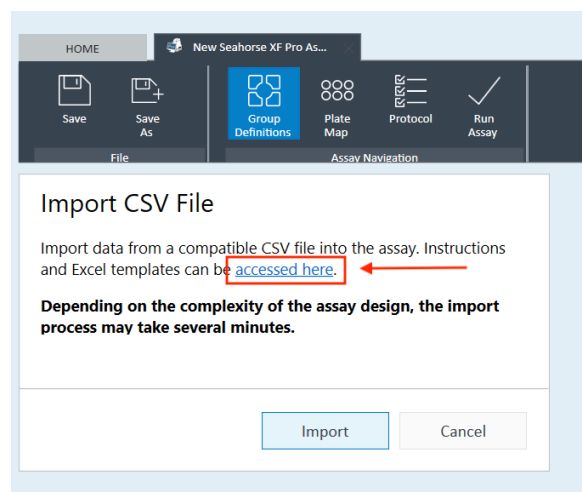
**Figure 3.** The CSV Import view.

If you have already created your Excel CSV file, then go to step 13.

OR

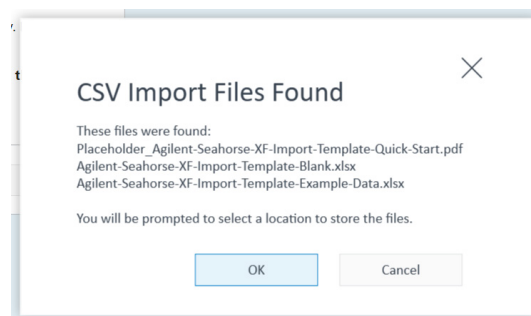
If you have NOT created your Excel CSV file, then you must create your CSV file using the file called *Agilent-Seahorse-XF-Pro-Assay-Import-Template.xlsx*.

- Create a blank copy of the Agilent-Seahorse-XF-Pro-Assay-Import-Template.xlsx file from CSV Import view by clicking the link pictured in Figure 4.



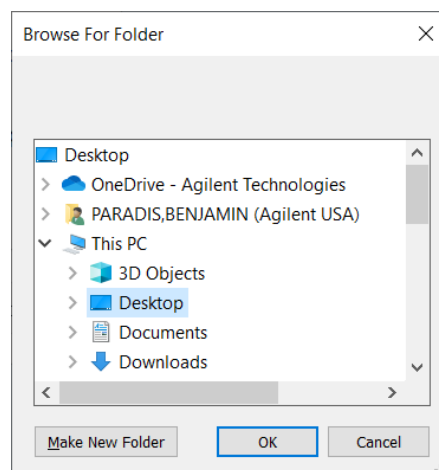
**Figure 4.** Create new copies of the Excel import template using the red outlined link.

- Click **OK** on the **Files Found** dialog (Figure 5).



**Figure 5.** Files found dialog.

- Select a file save location (Figure 6).



**Figure 6.** Choose a save location for the CSV Import files.

7. Open the file called: *Agilent-Seahorse-XF-Pro-Assay-Import-Template.xlsx*.
8. Enter a Project Name into cell A3 (Figure 7).  
**Note:** A Project Name is required to use the CSV import feature. If this cell is left blank, you will see an error (Figure 24).

	A	B	C
1		<b>Assay Information</b>	
2	Project Name	Principal Investigator	Plated By
3	New XF Project Name		
4		<b>Assay Groups</b>	
5	Group Name	Control Group Type	Well
6			A1
7			A2
8			A3
9			A4
10			A5
11			A6
12			A7
13			A8
14			A9

**Figure 7.** Enter a Project Name into cell A3. This field is required.

9. Designate the corner well positions A1 (row 6), A12 (row 17), H1 (row 90), and H12 (row 101) as Background group wells (Figure 8). If you have unassigned assay wells, do not leave these rows blank. Assay wells not assigned to a group should be designated as Background group wells prior to CSV import.









	A	B	C
1		<b>Assay Information</b>	
2	Project Name	Principal Investigator	Plated By
3	New XF Project Name		
4		<b>Assay Groups</b>	
5	Group Name	Control Group Type	Well
6	Background		A1
7			A2
8			A3
9			A4
10			A5
11			A6
12			A7
13			A8
14			A9
15			A10
16			A11
17	Background		A12
18			B1

**Figure 8.** Two Background group assignments for wells A1 and A12.

10. If your experiment design requires control groups, you can assign special control group attributes to wells in your assay template. Please refer to the list below:
  - Type *Positive* in column B for the appropriate rows/wells (Figure 9) to designate those wells as the Positive Control group in your assay template file (Figure 10).

	A	B	C
1		<b>Assay Information</b>	
2	Project Name	Principal Investigator	Plated By
3	New XF Project Name		
4		<b>Assay Groups</b>	
5	Group Name	Control Group Type	Well
6	Background		A1
7	Positive Control Group Name	Positive	A2
8	Positive Control Group Name	Positive	A3
9	Positive Control Group Name	Positive	A4
10	Positive Control Group Name	Positive	A5
11	Positive Control Group Name	Positive	A6
12	Positive Control Group Name	Positive	A7
13	Positive Control Group Name	Positive	A8
14	Positive Control Group Name	Positive	A9
15	Positive Control Group Name	Positive	A10
16	Positive Control Group Name	Positive	A11
17	Background		A12
18			B1

**Figure 9.** Assay wells A2 to A11 (rows 7 to 16) are assigned the Positive control group type in the CSV Import file.

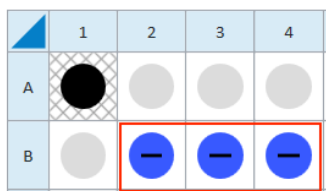
	1	2	3	4
A				
B				

**Figure 10.** A plus sign denotes assay wells assigned to the Positive control group type.

- Type *Negative* in column B for the appropriate rows/wells (Figure 11) to designate those wells as the Negative group in your assay template file (Figure 12).

1	Assay Information		
2	Project Name	Principal Investigator	Plated By
3	New XF Project Name		
4	Assay Groups		
5	Group Name	Control Group Type	Well
6	Background		A1
7	Negative Control Group Name	Negative	A2
8	Negative Control Group Name	Negative	A3
9	Negative Control Group Name	Negative	A4
10	Negative Control Group Name	Negative	A5
11	Negative Control Group Name	Negative	A6
12	Negative Control Group Name	Negative	A7
13	Negative Control Group Name	Negative	A8
14	Negative Control Group Name	Negative	A9
15	Negative Control Group Name	Negative	A10
16	Negative Control Group Name	Negative	A11
17	Background		A12
18			B1
19			B2

**Figure 11.** Assay wells A2 to A11 (rows 7 to 16) are assigned the Negative control group type in the CSV Import file.

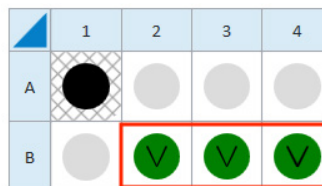


**Figure 12.** A minus sign denotes assay wells assigned to the Negative control group type.

- Type *Vehicle* in column B for the appropriate rows/wells (Figure 13) to designate those wells as the Vehicle group in your assay template file (Figure 14).

1	A	B	C	
2	Project Name	Principal Investigator	Plated By	Plated
3	New XF Project Name			
4	Assay Groups			
5	Group Name	Control Group Type	Well	
6	Background		A1	Media
7	Vehicle Group Name	Vehicle	A2	
8	Vehicle Group Name	Vehicle	A3	
9	Vehicle Group Name	Vehicle	A4	
10	Vehicle Group Name	Vehicle	A5	
11	Vehicle Group Name	Vehicle	A6	
12	Vehicle Group Name	Vehicle	A7	
13	Vehicle Group Name	Vehicle	A8	
14	Vehicle Group Name	Vehicle	A9	
15	Vehicle Group Name	Vehicle	A10	
16	Vehicle Group Name	Vehicle	A11	
17	Background		A12	
18			B1	
19			B2	
20			B3	
21			B4	

**Figure 13.** Assay wells A2 to A11 (rows 7 to 16) are assigned the Vehicle control group type in the CSV Import file.



**Figure 14.** A V denotes assay wells assigned to the Vehicle control group type.

- Type *Rot/AA* in column B for the appropriate rows/wells (Figure 15) to designate those wells as the Rotenone + Antimycin group in your assay template file (Figure 16).

1	Assay Information		
2	Project Name	Principal Investigator	Plated By
3	New XF Project Name		
4	Assay Groups		
5	Group Name	Control Group Type	Well
6	Background		A1
7	Rotenone + Antimycin Group Name	Rot/AA	A2
8	Rotenone + Antimycin Group Name	Rot/AA	A3
9	Rotenone + Antimycin Group Name	Rot/AA	A4
10	Rotenone + Antimycin Group Name	Rot/AA	A5
11	Rotenone + Antimycin Group Name	Rot/AA	A6
12	Rotenone + Antimycin Group Name	Rot/AA	A7
13	Rotenone + Antimycin Group Name	Rot/AA	A8
14	Rotenone + Antimycin Group Name	Rot/AA	A9
15	Rotenone + Antimycin Group Name	Rot/AA	A10
16	Rotenone + Antimycin Group Name	Rot/AA	A11
17	Background		A12
18			B1
19			B2

Figure 15. Assay wells A2 to A11 (rows 7 to 16) are assigned the Rot/AA control group type in the CSV Import file.

	1	2	3	4
A		Ⓡ	Ⓡ	Ⓡ

**Figure 16.** An R denotes assay wells assigned to the Rotenone + Antimycin A control group type.

11. Add group names for all well positions (column A, row 6 through 101, Figure 17).

**Note:** A group name is required for all well positions, if a well is left blank (empty) you will see an error (Figure 24).

	A	B	C
1		Assay Information	
2	Project Name	Principal Investigator	Plated By
3	New XF Project Name		
4	Assay Groups		
5	Group Name	Control Group Type	Well
6	Background		A1
7	Group 2		A2
8	Group 3		A3
9	Group 4		A4
10	Group 5		A5
11	Group 6		A6
12	Group 7		A7
13	Group 8		A8
14	Group 9		A9
15	Group 10		A10
16	Group 11		A11
17	Background		A12
18	Group 1		B1
19	Group 2		B2
20	Group 3		B3
21	Group 4		B4
22	Group 5		B5
23	Group 6		B6
24	Group 7		B7
25	Group 8		B8
26	Group 9		B9

**Figure 17.** Example of group names assigned to each well (row).

12. Save a copy of the Excel file as a comma delimited (CSV) file (Figure 18), then close the Excel CSV file before importing to Wave Pro or XF Pro.

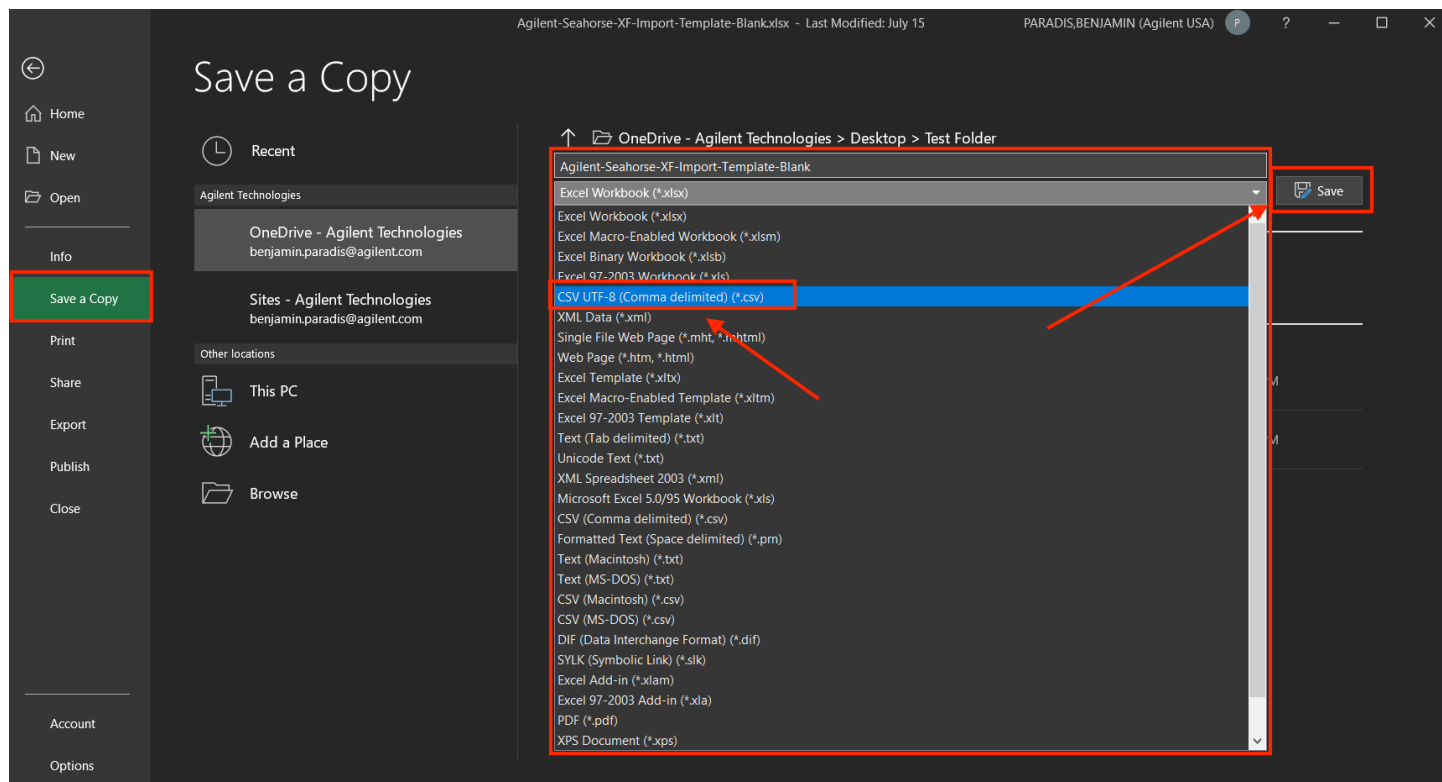


Figure 18. Save the Excel file as a CSV file.

13. Now in Wave Pro or XF Pro software, click **Import** (Figure 19), browse to the Excel CSV file, and click **Open** (Figure 20) to begin the template creation process (Figure 21). The time to complete the template creation process depends on the amount of information in the CSV file; in most cases it is very quick, less than 1 minute.

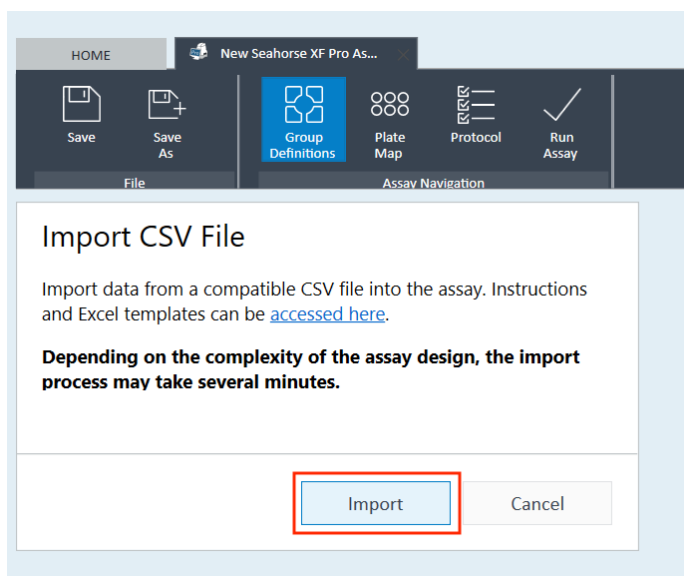
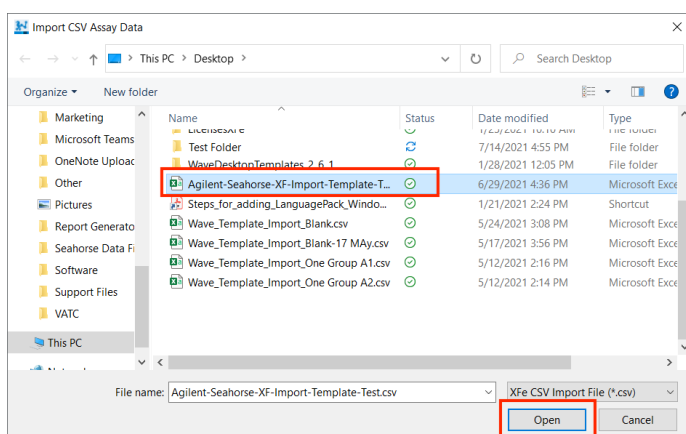
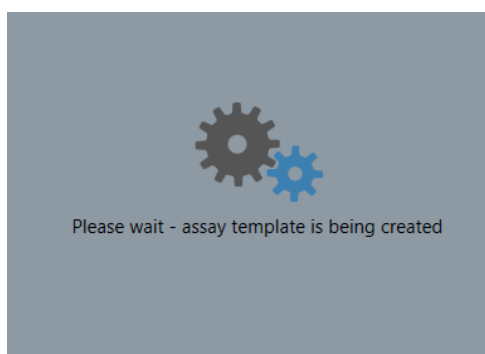


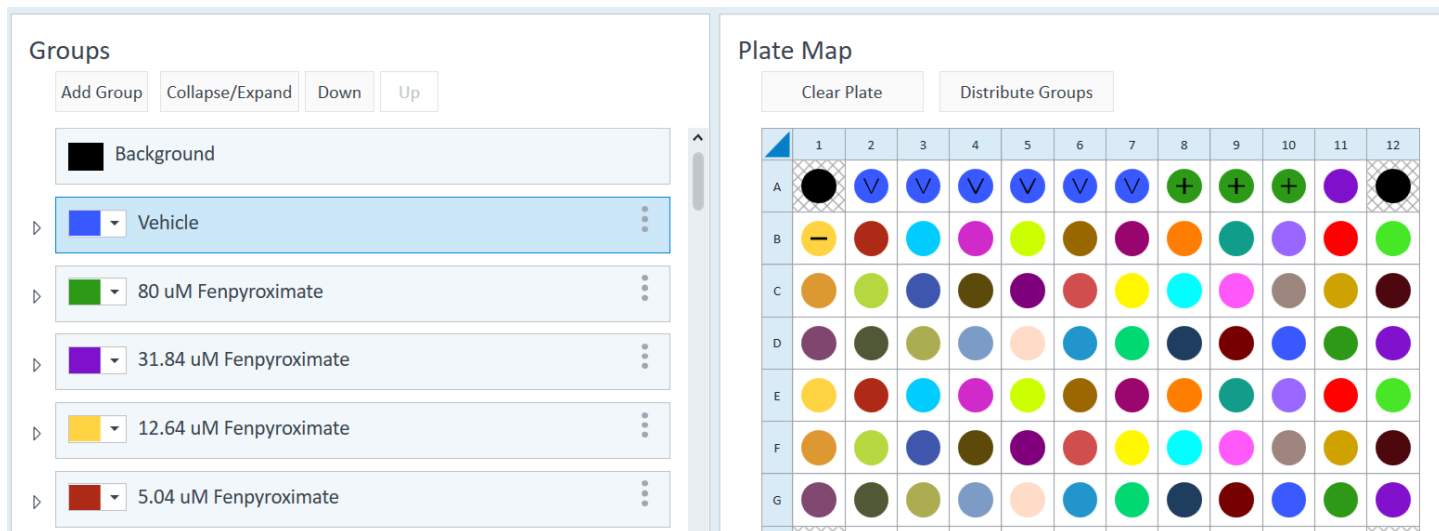
Figure 19. Import CSV view.



**Figure 20.** Locate the CSV file and click **Open** to begin the template creation process.



**Figure 21.** Wave Pro and XF Pro will display this message during the template creation process.



**Figure 22.** The plate map view in Wave Pro (or XF Pro) showing the list of groups (left) and the plate map assignment of those groups (right).

14. Once the template creation process is complete, you will automatically return to the Group Definitions view (not pictured), where you can review the list of groups created from the CSV file.

**Note:** After the template creation process is finished, do not use the Generate Groups button found on the Group Definitions view. This function will overwrite the groups and plate map assignments automatically created using the CSV import feature.

On the Plate Map view (Figure 22) you can review the list of groups AND group assignment on the plate map.

15. To finish your assay template, go to the Instrument Protocol view (Figure 23) and add the appropriate protocol steps to your template.

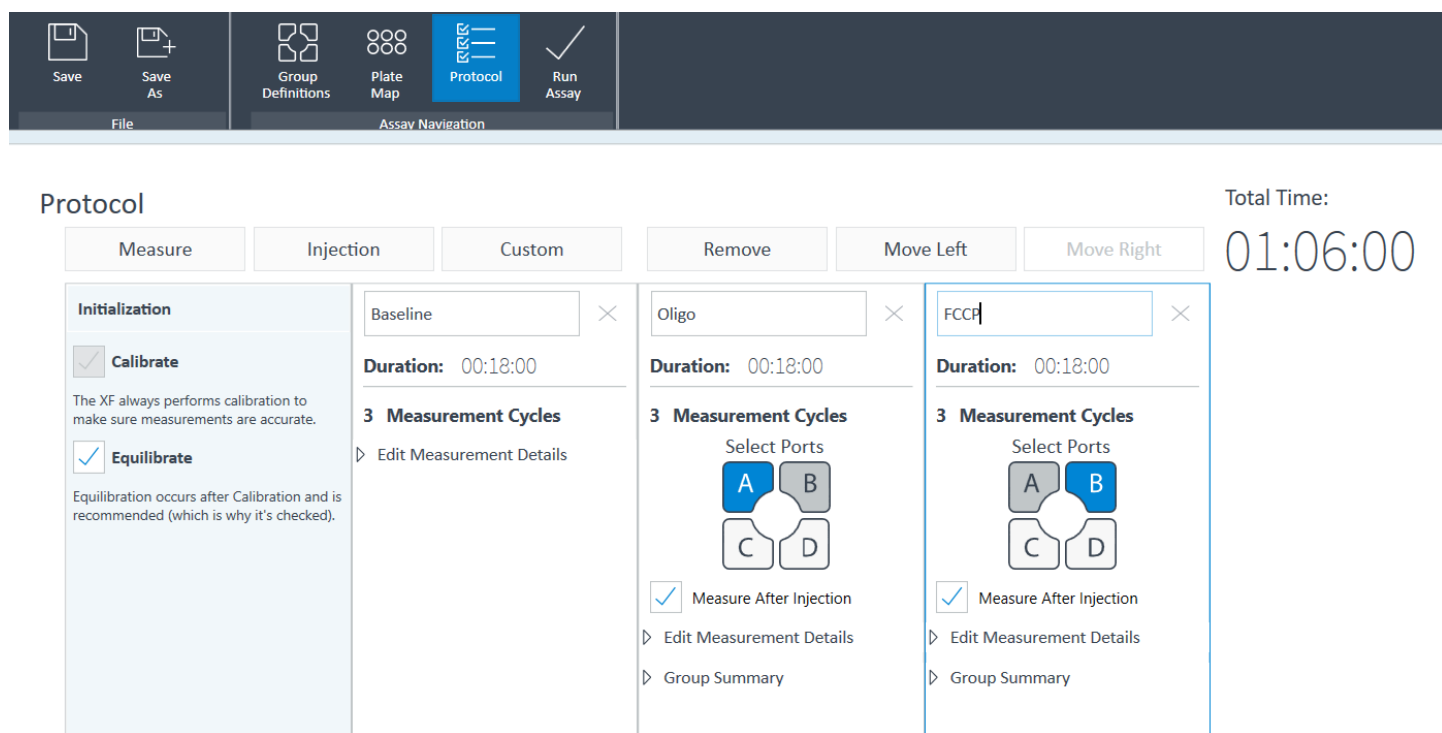


Figure 23. Instrument protocol view in Wave Pro and XF Pro software.

16. If you are using you PC & Wave Pro software to create your template, save the assay template file to a USB flash drive or shared network directory, then import to the XF Pro Analyzer. If you created the assay template using Wave Pro or XF Pro software (on the XF Pro controller), you can begin you assay when ready.



## Other important information

17. The Excel CSV import file must contain the following minimum data to be a valid import file: (1) project name and (2) group names. If this information is not contained in the Excel CSV import file, Wave Pro and XF Pro will display an error message (Figure 24).

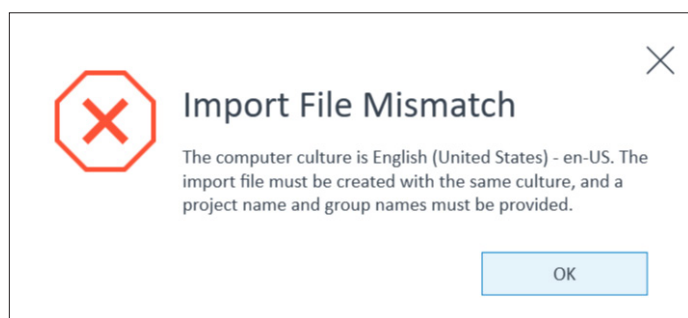
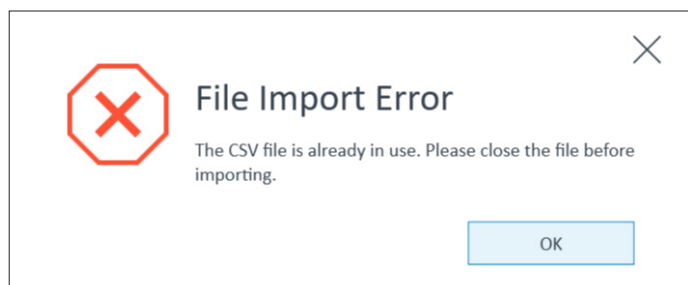


Figure 24. Error message displayed when project name and/or assay wells (rows) are not assigned a group. This message also appears if a language compatibility issue is detected.

18. Close your Excel CSV import file prior to Wave Pro or XF Pro import. If the Excel CSV file is left open, the import process cannot start and Wave Pro or XF Pro will display an error (Figure 25).



**Figure 25.** Error message displayed by Wave Pro and XF Pro if the Excel CSV import file is not closed prior to import.

19. The language locale of the PC used to create your Excel CSV import file must be the same language locale of the PC with Wave Pro software, where you will import the Excel CSV import file. If there is a language compatibility issue detected, you will see this error message (Figure 24)
- If a PC with a Windows OS language locale (e.g., French) is used create the Excel CSV import file, this Excel CSV import file can only be imported to Wave Pro software on a PC with the same French Windows OS language locale.
  - If the same PC is used to create the Excel CSV import file, then to create the assay template with Wave Pro, you will not encounter any language compatibility issue.
20. Wave Pro software can be installed on the XF Pro Controller (computer) and any Windows PC. Wave Pro software is validated for compatibility with Windows OS languages for: English, German, French, Chinese (Traditional) and Japanese.
21. XF Pro Controller software can only be installed on the XF Pro Controller (computer); the XF Pro Controller Windows OS is set to the 'English' language locale and must never be changed.

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This information is subject to change without notice.

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