

MANUAL

LIOFeron®TB/LTBI Analysis Software

INTRODUCTION

LIOFeron®TB/LTBI Analysis Software is a PC-based program for the analysis of ELISA raw data obtained from the LIOFeron®TB/LTBI Interferon Gamma (IFN-γ) Release Assay.

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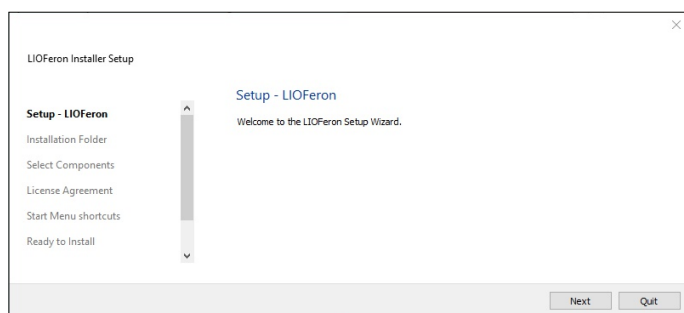
DOWNLOAD

LIOFeron®TB/LTBI Analysis Software is a PC-based program for calculating LIOFeron® test results. Please contact us for a download link. For more information, please visit

<https://lionex.de>

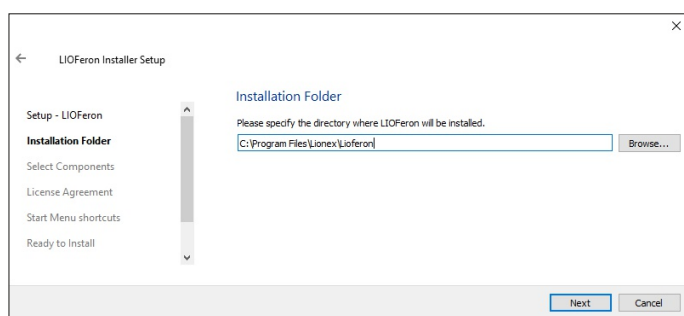
INSTALLATION

Double-click the LIOFeron®TB/LTBI Analysis Software installation file and follow the prompts to install the software.



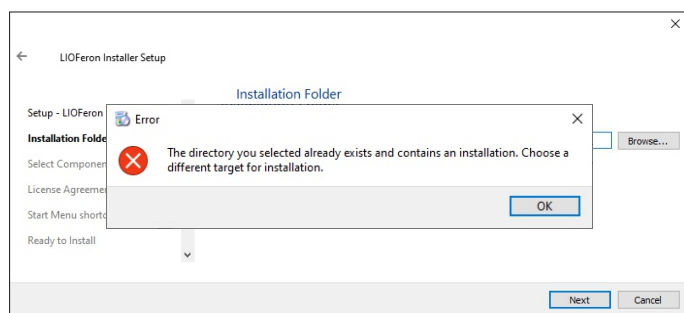
The language for the installer is automatically selected according to your system settings.

Click Next to continue



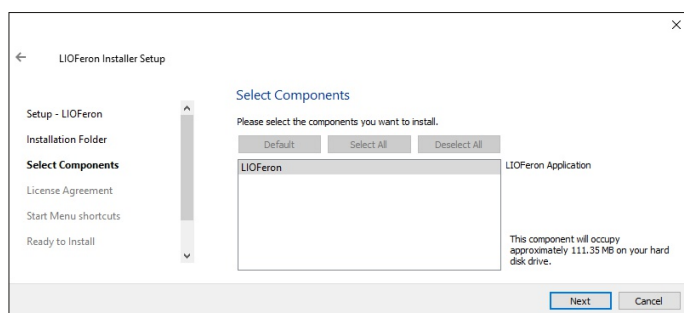
You can select the destination folder for the installation. It is recommended to keep the default value.

Click Next to continue



If an older version of the software is already installed on your system, you may see this dialog. Uninstall the previous versions using your system tools before continuing.

Click OK to continue



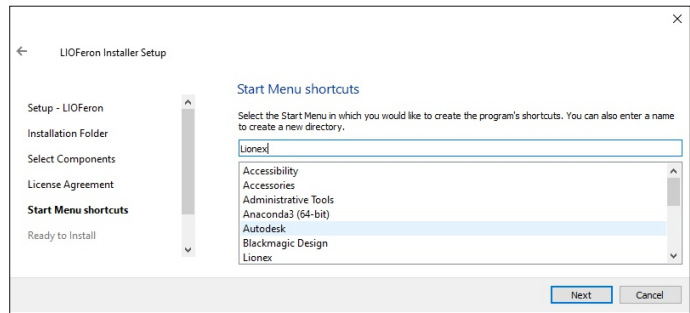
After selecting the directory for the software installation, the software is ready for installation.

Click Next to continue

INSTALLATION (cont.)

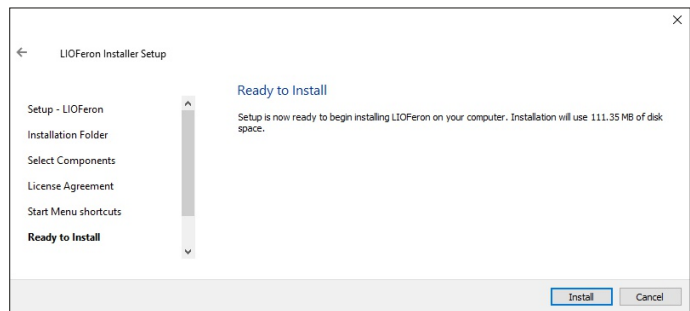
If you like, you can add the software shortcut to the Start menu folder.

Click Next to continue

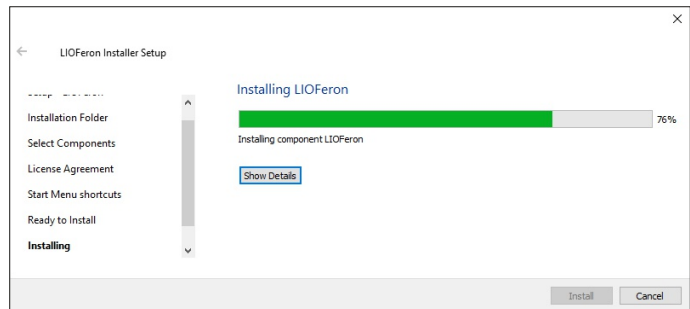


Start the installation process by clicking on the "Install" button

Click Install

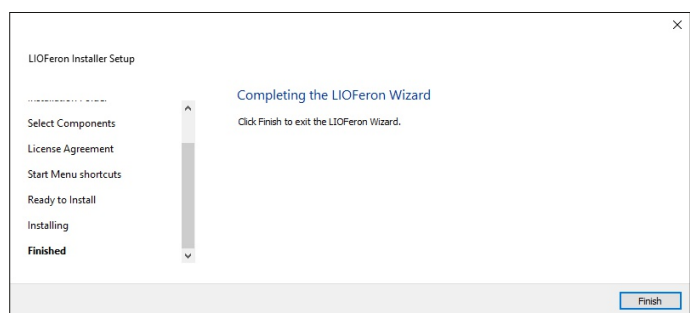


The status of the installation is indicated by a progress bar.



When the installation process is completed, you can close the window by clicking the "Finish" button.

Click Finish



PREREQUISITES

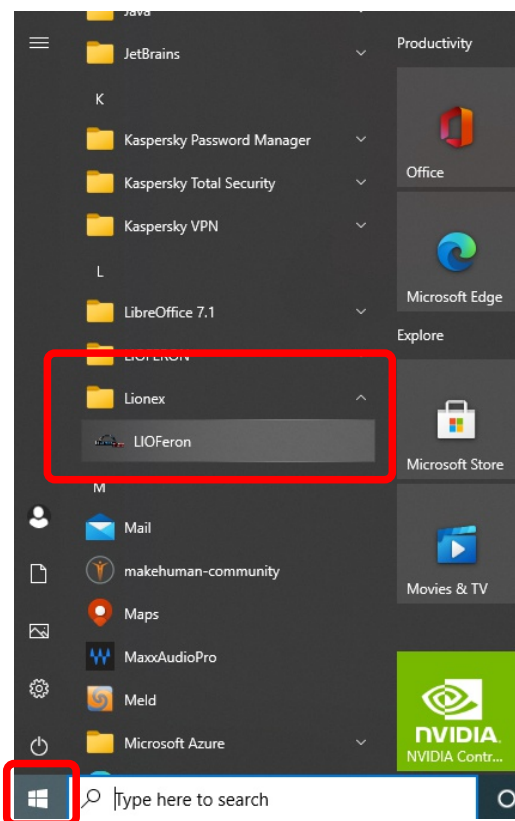
To open the result reports, a PDF reader must be installed on the computer.

A popular pdf reader, Adobe Acrobat Reader, can be downloaded from <https://get.adobe.com/reader>

STARTING THE PROGRAM

Click on the LIOFeron Analysis Software shortcut in the Start Menu to open the LIOFeron®TB/LTBI Analysis Software.

Alternatively, the program can be started by clicking on the *.exe file in the program folder.



THE MAIN PROGRAM WINDOW

The main program window consists of three parts. The Tool Bar at the top of the window contains information and the main controls.

It contains three buttons:

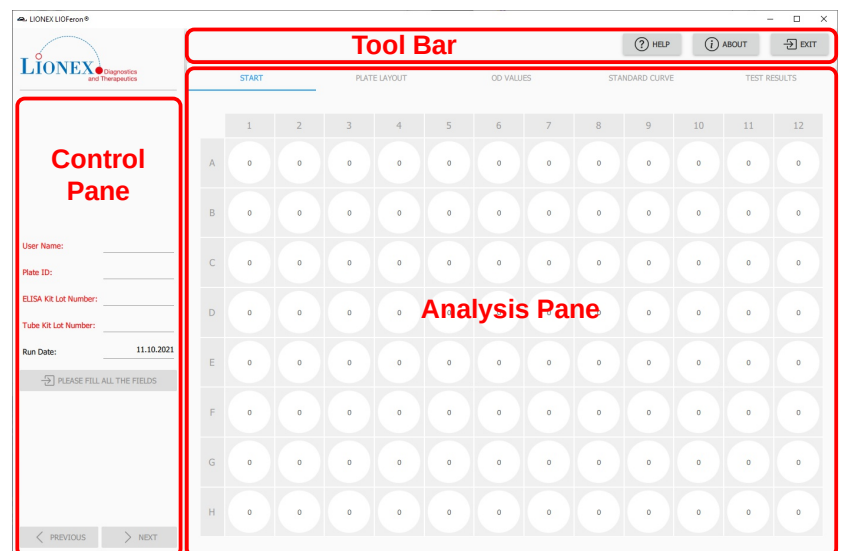
- Help:** Displays the help information.
- About:** Displays application and version information.
- Exit:** Closes the application.

On the left side of the window is the Control Pane. It is used to display information about the current analysis step and to control the analysis behavior.

The largest part of the application window is used for the Analysis Pane. It contains five tabs corresponding to the analysis steps.

The Analysis Pane tabs can be selected by clicking the corresponding label at the top of the Analysis Pane or by using the Previous or Next buttons of the Control Pane.

The content of the Control Pane is updated to match the information of the selected Analysis Pane tab.



PERFORMING AN ANALYSIS

The LIOFeron®TB/LTBI Analysis Software consists of the following steps for the analysis of raw data from the LIOFeron®TB/LTBI Interferon Gamma (IFN- γ) Release Assay.

1. Start the analysis
2. Create a plate layout
3. Insert OD values
4. Perform data analysis
5. Generate PDF report

The software has an Analysis Pane with Start, Plate Layout, OD Values, Standard Curve and Test Results tabs. The currently active tab (or analysis step) is highlighted.

The software guides the user through the analysis tabs by the pressing the "Next" button. Export of results is not possible until the entire analysis is complete and the final Test Results tab has been reviewed and approved.

Each analysis step can be reviewed at any time by clicking the "Previous" button or by selecting the appropriate tab in the tab bar.

Tab Bar: Each tab corresponds to one of the five analysis steps

LIONEX LIOFeron®

LIONEX® Diagnostics and Therapeutics

User Name: _____ Test User

Plate ID: 123

ELISA Kit Lot Number: 456

Tube Kit Lot Number: 789

Run Date: 11.10.2021

START TEST

PREVIOUS NEXT

Tab Bar: START, PLATE LAYOUT, OD VALUES, STANDARD CURVE, TEST RESULTS

	1	2	3	4	5	6	7	8	9	10	11	12
A	0	0	0	0	0	0	0	0	0	0	0	0
B	0	0	0	0	0	0	0	0	0	0	0	0
C	0	0	0	0	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0
G	0	0	0	0	0	0	0	0	0	0	0	0
H	0	0	0	0	0	0	0	0	0	0	0	0

Previous

Next

START THE ANALYSIS

Open the **Start** tab in the Analysis Pane to start a new analysis.

If you have already started a test before, you have to click the Reset Test button to reset the data and start a new test.

The screenshot shows the LIONEX LIOFeron® software interface. The 'START' tab is selected and highlighted with a red box. Below the tab, there are input fields for 'User Name' (Test User), 'Plate ID' (123), 'ELISA Kit Lot Number' (456), 'Tube Kit Lot Number' (789), and 'Run Date' (11.10.2021). A red box highlights the 'RESET TEST' button. To the right of the input fields is a 12x8 grid representing a microplate layout, with columns numbered 1 to 12 and rows lettered A to H. Each cell in the grid contains a '0'. At the top right, there are buttons for 'HELP', 'ABOUT', and 'EXIT'. At the bottom left, there are 'PREVIOUS' and 'NEXT' buttons.

METADATA ENTRY

Enter User Name, Plate ID, ELISA Kit Lot Number, Tube Kit Lot Number and Run Date.

All fields must contain data. Otherwise, the Start button will not appear.

The screenshot shows the LIONEX LIOFeron® software interface. The 'START' tab is selected. Below the tab, there are input fields for 'User Name', 'Plate ID', 'ELISA Kit Lot Number', 'Tube Kit Lot Number', and 'Run Date'. A red box highlights these input fields. Below the input fields, there is a message 'PLEASE FILL ALL THE FIELDS'. To the right of the input fields is a 12x8 grid representing a microplate layout, with columns numbered 1 to 12 and rows lettered A to H. Each cell in the grid contains a '0'. At the top right, there are buttons for 'HELP', 'ABOUT', and 'EXIT'. At the bottom left, there are 'PREVIOUS' and 'NEXT' buttons.

METADATA ENTRY (cont.)

When you have entered all the metadata for the new test, you can click the Start button to start the new analysis.

The screenshot shows the LIONEX LIOFeron software interface. On the left, there is a metadata entry form with the following fields: User Name (Test User), Plate ID (123), ELISA Kit Lot Number (456), Tube Kit Lot Number (789), and Run Date (11.10.2021). Below these fields is a blue button labeled 'START TEST' with a red rectangle around it. At the bottom left are 'PREVIOUS' and 'NEXT' navigation buttons. The main area on the right displays a 12x8 grid of wells, each containing a '0'. Above the grid are tabs for 'START', 'PLATE LAYOUT', 'OD VALUES', 'STANDARD CURVE', and 'TEST RESULTS'. The 'START' tab is currently selected. At the top right of the main area are 'HELP', 'ABOUT', and 'EXIT' buttons.

This screenshot shows the same LIONEX LIOFeron software interface as the previous one, but with the 'NEXT' button at the bottom left highlighted with a red rectangle. The 'START TEST' button is no longer highlighted. All other elements, including the metadata fields and the 12x8 grid of wells, remain the same.

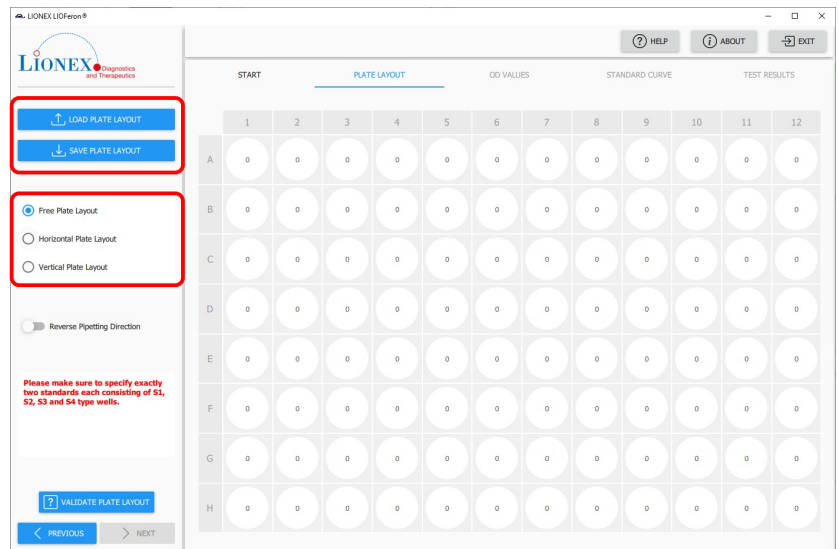
After the new test analysis has been started, you can proceed to the next step by clicking the Next button.

PLATE LAYOUT

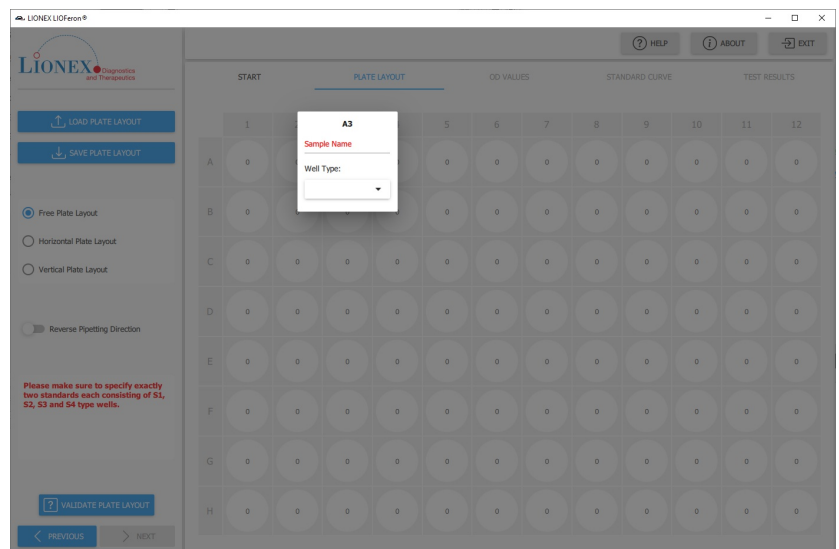
The buttons Load Plate Layout and Save Plate Layout can be used to open a previously saved layout or to save the current layout to a file.

For more information, see the chapter "Working with Plate Layout Files".

The plate layout can be created with predefined horizontal or vertical sample orientations or a free layout.



In the Free Layout mode, the sample names and well types can be inserted for each individual well by selecting it with a click of the left mouse button in the Analysis Pane.

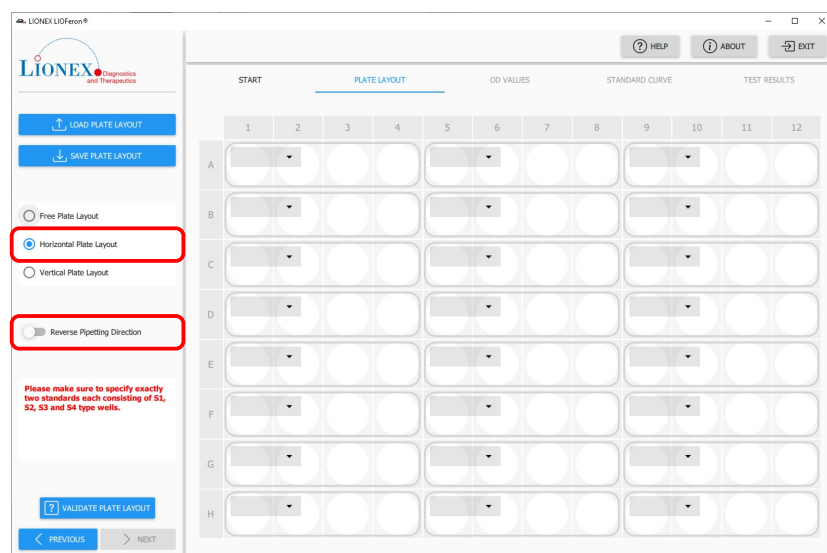


The popup dialog can be closed by clicking anywhere in the main window area, or hitting the Enter or Esc keys.

The data is automatically applied when the dialog is closed.

PLATE LAYOUT (cont.)

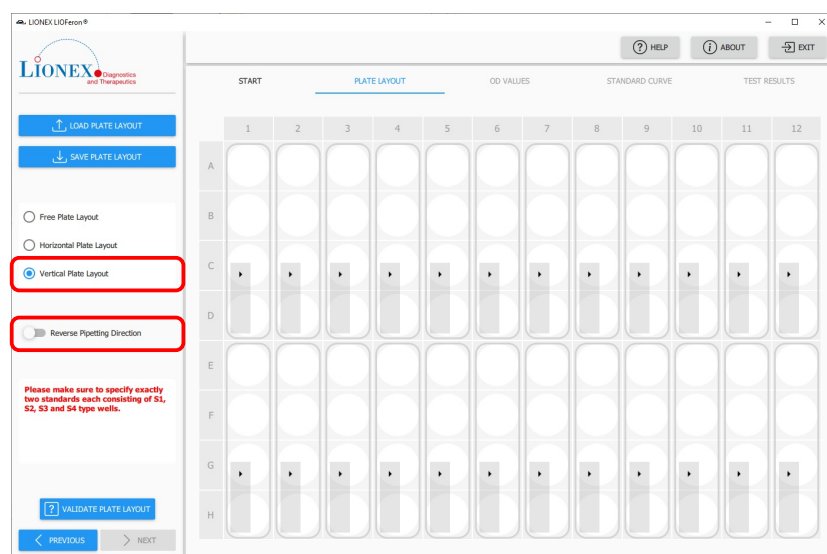
In Horizontal Plate Layout mode, the four sample wells can be inserted in one step if the standard pipetting sequence is used from left to right.



The standard pipetting sequence for Horizontal Plate Layout is NC — TB A — TB B — PC from left to right.

The pipetting direction can be reversed by activating the Reverse Pipetting Direction switch.

The Vertical Plate Layout mode can be used if the standard pipetting sequence is used from top to bottom.



The standard pipetting sequence for Vertical Plate Layout is NC — TB A — TB B — PC from top to bottom.

As in the Horizontal Plate Layout mode, the pipetting direction can be reversed by activating the Reverse Pipetting Direction switch.

PLATE LAYOUT (cont.)

When the plate layout creation complete, the layout must be validated by clicking the Validate Plate Layout button. The plate layout must be validated before you can proceed to the next step.

If there are any problems with the plate layout, it will be shown in the message area.

Message Area →

Validation Button →

Please make sure to specify exactly two standards each consisting of S1, S2, S3 and S4 type wells.

VALIDATE PLATE LAYOUT

When the validation is successfully completed, you can proceed to the next step by clicking the Next button.

Validation Completed →

VALIDATE PLATE LAYOUT

NEXT

OD VALUE ENTRY

The OD Values tab is used to insert the OD values from the ELISA reader. They can be inserted manually by clicking on one of the wells.

The OD values can also be imported from Excel clipboard or ELISA reader files of supported ELISA readers.

The screenshot shows the LIONEX LIOFeron® software interface. The sidebar on the left contains several buttons: 'PASTE FROM EXCEL CLIPBOARD', 'LOAD D52 OD VALUES', 'LOAD REVEL OD VALUES', a 'Message Area' box, and 'VALIDATE OD VALUES'. The main area displays a 12x8 grid of wells. The 'PASTE FROM EXCEL CLIPBOARD' button and the 'VALIDATE OD VALUES' button are highlighted with red boxes. The grid shows numerical OD values for each well, with some wells highlighted in red and others in green.

	1	2	3	4	5	6	7	8	9	10	11	12
A	1.795	0.976	0.367	0.048	1.698	1.886	1.924	2.03	0.337	0.671	0.378	1.048
B	1.852	1.091	0.4	0.064	0.546	0.61	0.54	1.579	0.721	0.749	0.74	0.881
C	0	0	0	0	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0
G	0	0	0	0	0	0	0	0	0	0	0	0
H	0	0	0	0	0	0	0	0	0	0	0	0

The OD value data can be imported from Excel by copying the data in the spreadsheet and pasting it using the Paste From Excel Clipboard button. Please make sure that the column and row layout matches the layout of the Analysis Pane.

The OD values can also be loaded from supported ELISA readers exports. Please make sure that the plate layout matches the layout of the reader file and load the data by clicking the button for your ELISA reader device.

If the OD Values have been successfully validated, you can proceed to the next step by using the Next button.

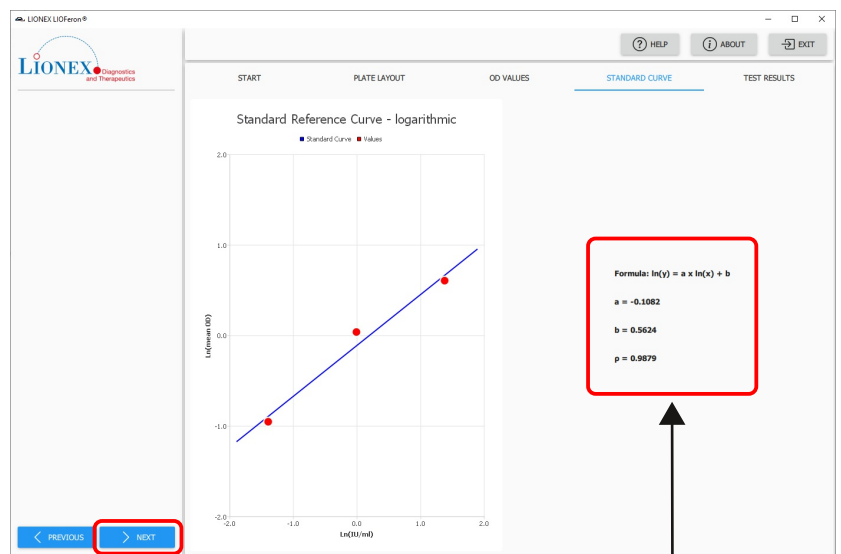
The screenshot shows the LIONEX LIOFeron® software interface after successful validation. The 'VALIDATE OD VALUES' button is now checked, and the 'NEXT' button is highlighted with a red box. The grid of wells remains the same as in the previous screenshot.

	1	2	3	4	5	6	7	8	9	10	11	12
A	1.795	0.976	0.367	0.048	1.698	1.886	1.924	2.03	0.337	0.671	0.378	1.048
B	1.852	1.091	0.4	0.064	0.546	0.61	0.54	1.579	0.721	0.749	0.74	0.881
C	0	0	0	0	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0
G	0	0	0	0	0	0	0	0	0	0	0	0
H	0	0	0	0	0	0	0	0	0	0	0	0

STANDARD CURVE

The Standard Curve tab displays the resulting standard curve and its parameters.

With the Next button you can proceed to the Test Results.



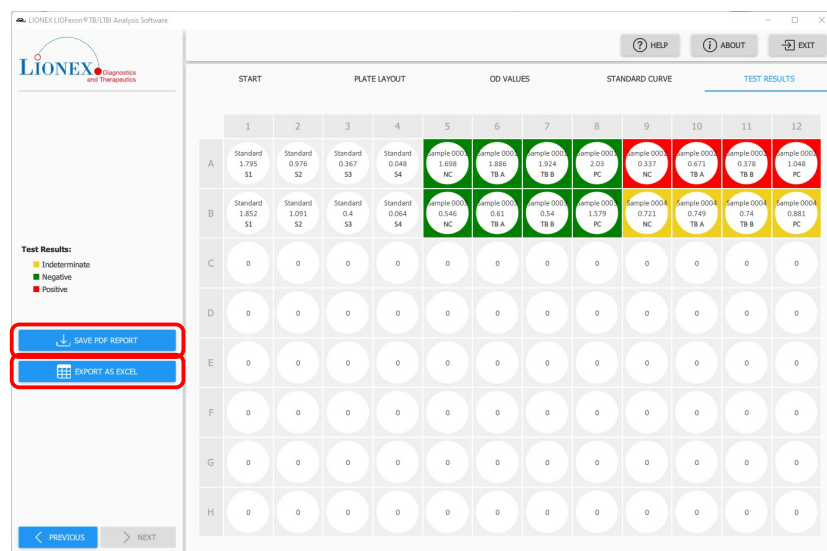
Standard Reference Curve
Parameters

TEST RESULTS

The results of the evaluated tests can be reviewed on the Test Results tab.

Color coding is used for a quick overview of the test results:

- GREEN:** Positive Test Result
- RED:** Negative Test Result
- YELLOW:** Indeterminate Test Result
- GREY:** Standard or unused well



The Save PDF Button allows you to create and save a PDF report of the test results.

"Export as Excel" will open a Microsoft Excel worksheet with the test results.

If the test results are exported as PDF, they are saved to the specified location and opened automatically.

Test data including the test result

Quality control of standards

Standard curve

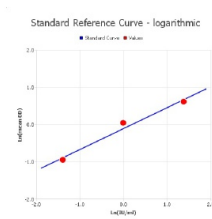
Test evaluation scheme



SampleID	Well	IU/ml	IU/ml - NC	25% of NC	Standard	Result
Sample 02	NC	0.18		0.044	passed	Positive
	Tb A	0.60	0.42			
	Tb B	0.21	0.04			
	PC	1.32	1.14			
Sample 03	NC	0.41		0.103	passed	Negative
	Tb A	0.50	0.09			
	Tb B	0.41	-0.01			
	PC	2.73	2.32			
Sample 01	NC	3.11		0.777	passed	Negative
	Tb A	3.75	0.64			
	Tb B	3.88	0.77			
	PC	4.27	1.16			
Sample 04	NC	0.68		0.169	passed	Indeterminate
	Tb A	0.73	0.05			
	Tb B	0.71	0.03			
	PC	0.97	0.29			

Quality control of standards	Value	Criteria	Passed
S1 OD mean	1.82	> 0.60	ok
S1 OD coefficient of variation	1.56 %	<15.00 %	ok
S2 OD coefficient of variation	5.56 %	<15.00 %	ok
S3 OD maximum deviation from mean	0.02	< 0.04	ok
S4 OD maximum deviation from mean	0.01	< 0.04	ok
R	0.99	> 0.98	ok

User Name: Test User | Plate ID: 123 | ELISA Kit: 456 | Tube Kit: 789 | Run Date: 13/08/2023 1 / 2



NC Negative Control (%)	TA - NC Therapeutic - Negative Control (%)	TB - NC Therapeutic - Negative Control (%)	PC - NC Placebo Control - Negative Control (%)	
	< 0.35	< 0.35	< 0.35	
	> 0.35 and < 25 % of Negative Control value	> 0.35 and < 25 % of Negative Control value	> 0.35 and < 25 % of Negative Control value	Negative
	< 0.35	> 0.35 and < 25 % of Negative Control value	> 0.35	Negative
	> 0.35 and < 25 % of Negative Control value	< 0.35	< 0.35	Negative
	> 0.35 and < 25 % of Negative Control value	not relevant	not relevant	Indeterminate
	< 0.35	> 0.35 and < 25 % of Negative Control value	< 0.35	Indeterminate
	> 0.35 and < 25 % of Negative Control value	> 0.35 and < 25 % of Negative Control value	< 0.35	Indeterminate
	< 0.35	> 0.35 and < 25 % of Negative Control value	< 0.35	Indeterminate
	> 0.35 and < 25 % of Negative Control value	< 0.35	< 0.35	Indeterminate
	< 0.35	< 0.35	< 0.35	Indeterminate

User Name: Test User | Plate ID: 123 | ELISA Kit: 456 | Tube Kit: 789 | Run Date: 11/08/2021 2 / 2

WORKING WITH PLATE LAYOUT FILES

A predefined plate layout can be read or written by the LIOFeron®TB/LTBI Analysis Software using the "Load Plate Layout" button. A plate layout can also contain OD data.

The plate layout file is a simple "txt" file. It can be created or edited with the standard Windows text editor or any other simple text editor.

The first line of the file contains a description of the file format and version. It should always read as follows for the current version of the software:

```
# Lionex Elisa Analysis Software; file_format: v2
```

The rest of the file describes one well per line. Each line contains 4 columns separated by semicolons:

<Plate Position>;<Type>;<Sample Name>;<OD>

Plate Position:

A1, A2, A3 ... - ... H12

Type:

for sample wells: NC, TB_A, TB_B, PC

for standard wells: S1, S2, S3, S4

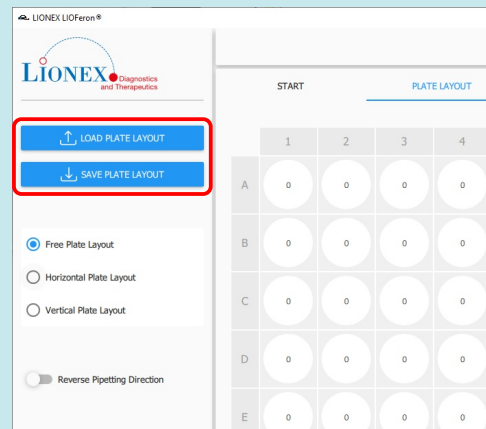
Sample Name:

for sample wells: Any text is allowed, but not the reserved keywords "Standard", "S1", "S2", "S3" or "S4"

for standard wells: *Standard* must be used as Sample Name

OD:

Number, "." is used as decimal separator



When loading a plate layout file, please examine carefully the imported data before proceeding to the next step and take care of any import error messages.

WORKING WITH PLATE LAYOUT FILES (cont.)

The following input file creates the plate layout as shown below:

```
# Lionex Elisa Analysis Software; file_format: v2
A1;S1;Standard;1.795
A2;S2;Standard;0.976
A3;S3;Standard;0.367
A4;S4;Standard;0.048
A5;NC;Sample 0001;1.698
A6;TB_A;Sample 0001;1.886
A7;TB_B;Sample 0001;1.924
A8;PC;Sample 0001;2.03
A9;NC;Sample 0002;0.337
A10;TB_A;Sample 0002;0.671
A11;TB_B;Sample 0002;0.378
A12;PC;Sample 0002;1.048
B1;S1;Standard;1.852
B2;S2;Standard;1.091
B3;S3;Standard;0.4
B4;S4;Standard;0.064
B5;NC;Sample 0003;0.546
B6;TB_A;Sample 0003;0.61
B7;TB_B;Sample 0003;0.54
B8;PC;Sample 0003;1.579
B9;NC;Sample 0004;0.721
B10;TB_A;Sample 0004;0.749
B11;TB_B;Sample 0004;0.74
B12;PC;Sample 0004;0.881
```

	1	2	3	4	5	6	7	8	9	10	11	12
A	Standard 1.795 S1	Standard 0.976 S2	Standard 0.367 S3	Standard 0.048 S4	Sample 0001 1.698 NC	Sample 0001 1.886 TB A	Sample 0001 1.924 TB B	Sample 0001 2.03 PC	Sample 0002 0.337 NC	Sample 0002 0.671 TB A	Sample 0002 0.378 TB B	Sample 0002 1.048 PC
B	Standard 1.852 S1	Standard 1.091 S2	Standard 0.4 S3	Standard 0.064 S4	Sample 0003 0.546 NC	Sample 0003 0.61 TB A	Sample 0003 0.54 TB B	Sample 0003 1.579 PC	Sample 0004 0.721 NC	Sample 0004 0.749 TB A	Sample 0004 0.74 TB B	Sample 0004 0.881 PC
C	0	0	0	0	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0
G	0	0	0	0	0	0	0	0	0	0	0	0
H	0	0	0	0	0	0	0	0	0	0	0	0

WORKING WITH ELISA READER FILES

OD values to be used for analysis can be imported from ELISA reader file exports. Only certain reader file formats are supported, which are described in this chapter.

Note: The import contains only the OD values from the reader file. The plate layout, which is used to capture the data by the reader, must be identical to the plate layout specified in the LIOFeron®TB/LTBI Analysis Software.

The current software version supports the DS2 and REVEL file formats. All other data in the files except the OD values are ignored.

The screenshot shows the LIONEX LIOFeron® software interface. On the left, there is a sidebar with the LIONEX logo and a 'PASTE FROM EXCEL CLIPBOARD' button. Below this, two buttons are highlighted with a red box: 'LOAD DS2 OD VALUES' and 'LOAD REVEL OD VALUES'. On the right, there is a 'START' screen displaying a 4x2 grid of wells. The wells are labeled A, B, C, and D on the y-axis, and 1 and 2 on the x-axis. The values in the wells are: A1: 1.795, A2: 0.976, B1: 1.852, B2: 1.091, C1: 0, C2: 0, D1: 0, D2: 0.

If you load an ELISA reader file, please check the imported data carefully before proceeding to the next step and pay attention to any error message during import.

WORKING WITH ELISA READER FILES (cont.)

These are examples of the DS2 file format:

Example 1: German file format

```
"Platten-ID";"0101-01-01"

Well - Positionen;Proben-Id;Rohdaten;Endergebnisse;
"A1";;1.448;1.448
"B1";;0.750;0.750
"C1";;0.254;0.254
"D1";;0.041;0.041
"E1";NC1008;0.049;0.049
"F1";TBA3008;0.055;0.055
"G1";TBB4008;0.058;0.058
"H1";PC2008;1.523;1.523
"A2";;1.489;1.489
"B2";;0.735;0.735
"C2";;0.240;0.240
"D2";;0.040;0.040
"E2";NC1008_1;0.046;0.046
"F2";TBA3008+1;0.073;0.073
"G2";TBB4008+2;0.079;0.079
"H2";PC2008_1;1.326;1.326
"A3";NC1008_2;0.054;0.054
"B3";TBA3008+3;0.060;0.060
"C3";TBB4008+4;0.073;0.073
"D3";PC2008_2;1.138;1.138
"E3";NC1008_3;0.054;0.054
"F3";TBA3008+5;0.060;0.060
"G3";TBB4008+6;0.066;0.066
"H3";PC2008_3;1.635;1.635
```

Example 2: English file format

```
"Plate ID";"0101-01-01"

Well Positions;Sample Id;Final Results;
"A1";;1.448;1.448
"B1";;0.750;0.750
"C1";;0.254;0.254
"D1";;0.041;0.041
"E1";NC1008;0.049;0.049
"F1";TBA3008;0.055;0.055
"G1";TBB4008;0.058;0.058
"H1";PC2008;1.523;1.523
"A2";;1.489;1.489
"B2";;0.735;0.735
"C2";;0.240;0.240
"D2";;0.040;0.040
"E2";NC1008_1;0.046;0.046
"F2";TBA3008+1;0.073;0.073
"G2";TBB4008+2;0.079;0.079
"H2";PC2008_1;1.326;1.326
"A3";NC1008_2;0.054;0.054
"B3";TBA3008+3;0.060;0.060
"C3";TBB4008+4;0.073;0.073
"D3";PC2008_2;1.138;1.138
"E3";NC1008_3;0.054;0.054
"F3";TBA3008+5;0.060;0.060
"G3";TBB4008+6;0.066;0.066
"H3";PC2008_3;1.635;1.635
```

WORKING WITH ELISA READER FILES (cont.)

This is an example of the REVEL file format:

```
Statistics DLL Version 2.30
"File Name",7654321.TXT
"File Format",Matrix
"File Time",01.01.2021,15:00:00
```

```
[Assay],C:\REVEL\999-333.ASY
"Assay title",999-333
"Read Time",01.01.2021,15:00:00
"Operator",
"Comments",Incubation time 20 min
"Kit Lot Number",20210101-T01,2021-01-01
"Wells",A1 - H12
OD RESULTS
"Units",OD
```

```
[Results]
```

```
"Row A","Column 1","Column 2","Column 3","Column 4","Column 5","Column 6","Column 7","Column 8","Column 9","Column10","Column11","Column12"
"Sample ID","S1","S2","123100 nc","Testsample nc","T33","T41","T49","T57","T65","T73","T81","T89"
"Position","A1","A2","A3","A4","A5","A6","A7","A8","A9","A10","A11","A12"
"Well Label","T1","T9","T17","T25","T33","T41","T49","T57","T65","T73","T81","T89"
"OD Results",0.045,0.048,0.041,0.039,0.042,0.038,0.039,0.039,0.039,0.038,0.040,0.040
```

```
"Row B","Column 1","Column 2","Column 3","Column 4","Column 5","Column 6","Column 7","Column 8","Column 9","Column10","Column11","Column12"
"Sample ID","S1","S2","123100 tba","Testsample tba","T34","T42","T50","T58","T66","T74","T82","T90"
"Position","B1","B2","B3","B4","B5","B6","B7","B8","B9","B10","B11","B12"
"Well Label","T2","T10","T18","T26","T34","T42","T50","T58","T66","T74","T82","T90"
"OD Results",0.041,0.044,0.041,0.039,0.041,0.040,0.041,0.048,0.039,0.039,0.052,0.047
```

```
"Row C","Column 1","Column 2","Column 3","Column 4","Column 5","Column 6","Column 7","Column 8","Column 9","Column10","Column11","Column12"
"Sample ID","S1","S2","123100 tbb","Testsample tbb","T35","T43","T51","T59","T67","T75","T83","T91"
"Position","C1","C2","C3","C4","C5","C6","C7","C8","C9","C10","C11","C12"
"Well Label","T3","T11","T19","T27","T35","T43","T51","T59","T67","T75","T83","T91"
"OD Results",0.040,0.044,0.040,0.040,0.040,0.039,0.040,0.039,0.039,0.043,0.045,0.042
```

```
"Row D","Column 1","Column 2","Column 3","Column 4","Column 5","Column 6","Column 7","Column 8","Column 9","Column10","Column11","Column12"
"Sample ID","S1","S2","123100 pc","Testsample pc","T36","T44","T52","T60","T68","T76","T84","T92"
"Position","D1","D2","D3","D4","D5","D6","D7","D8","D9","D10","D11","D12"
"Well Label","T4","T12","T20","T28","T36","T44","T52","T60","T68","T76","T84","T92"
"OD Results",0.040,0.048,0.040,0.042,0.044,0.038,0.040,0.040,0.039,0.040,0.042,0.040
```

```
"Row E","Column 1","Column 2","Column 3","Column 4","Column 5","Column 6","Column 7","Column 8","Column 9","Column10","Column11","Column12"
"Sample ID","aa","12","123100 nc","Testsample nc","T37","T45","T53","T61","T69","T77","T85","T93"
"Position","E1","E2","E3","E4","E5","E6","E7","E8","E9","E10","E11","E12"
"Well Label","T5","T13","T21","T29","T37","T45","T53","T61","T69","T77","T85","T93"
"OD Results",0.045,0.044,0.041,0.041,0.047,0.039,0.040,0.040,0.043,0.040,0.051,0.043
```

```
"Row F","Column 1","Column 2","Column 3","Column 4","Column 5","Column 6","Column 7","Column 8","Column 9","Column10","Column11","Column12"
"Sample ID","aa","13","123100 tba","Testsample tba","T38","T46","T54","T62","T70","T78","T86","T94"
"Position","F1","F2","F3","F4","F5","F6","F7","F8","F9","F10","F11","F12"
"Well Label","T6","T14","T22","T30","T38","T46","T54","T62","T70","T78","T86","T94"
"OD Results",0.041,0.047,0.040,0.041,0.041,0.038,0.041,0.039,0.045,0.043,0.043,0.046
```

```
"Row G","Column 1","Column 2","Column 3","Column 4","Column 5","Column 6","Column 7","Column 8","Column 9","Column10","Column11","Column12"
"Sample ID","aa","cc","123100 tbb","Testsample tbb","T39","T47","T55","T63","T71","T79","T87","T95"
"Position","G1","G2","G3","G4","G5","G6","G7","G8","G9","G10","G11","G12"
"Well Label","T7","T15","T23","T31","T39","T47","T55","T63","T71","T79","T87","T95"
"OD Results",0.044,0.045,0.040,0.041,0.043,0.039,0.041,0.047,0.040,0.041,0.044,0.046
```

```
"Row H","Column 1","Column 2","Column 3","Column 4","Column 5","Column 6","Column 7","Column 8","Column 9","Column10","Column11","Column12"
"Sample ID","aa","cc","123100 pc","Testsample pc","T40","T48","T56","T64","T72","T80","T88","T96"
"Position","H1","H2","H3","H4","H5","H6","H7","H8","H9","H10","H11","H12"
"Well Label","T8","T16","T24","T32","T40","T48","T56","T64","T72","T80","T88","T96"
"OD Results",0.045,0.049,0.039,0.041,0.041,0.038,0.042,0.039,0.040,0.043,0.045,0.042
```

End of results

SPECIFICATIONS

Software specifications

LIOFeron®TB/LTBI Analysis Software

Version: 2.7.0

Catalogue Number: LIOFeron_Analysis_Software_2.7.0

System requirements

Intel® Pentium® processor, or equivalent

Microsoft® Windows® 10 or higher, 32-bit or 64-bit

2 GB RAM

500 MB available hard-disk space

Screen resolution 1280 x 720 pixels, or higher

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