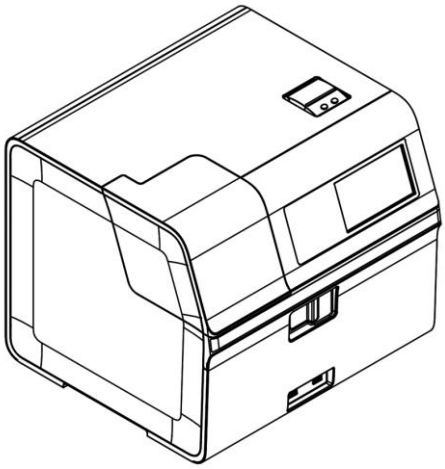
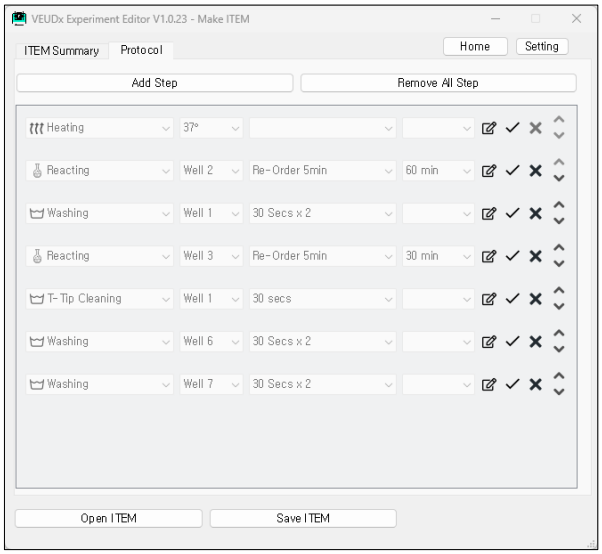
Operation Manual

VEUDx Experiment Editor





UM-VEUDx-1.0

Index

1. Installation

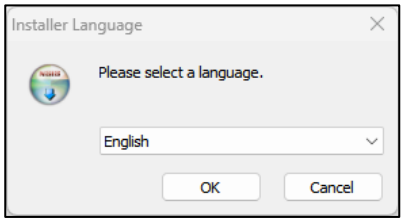
1.1 Installation

1.1.1 Execution

Execute VEUDx Experiment Editor Setup V1.x.x.exe on PC.

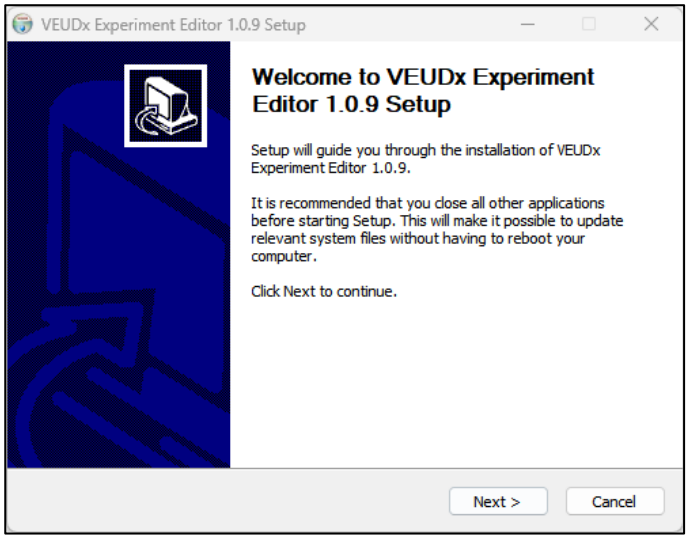
1.1.2 Language selection

Choose the language you want to use



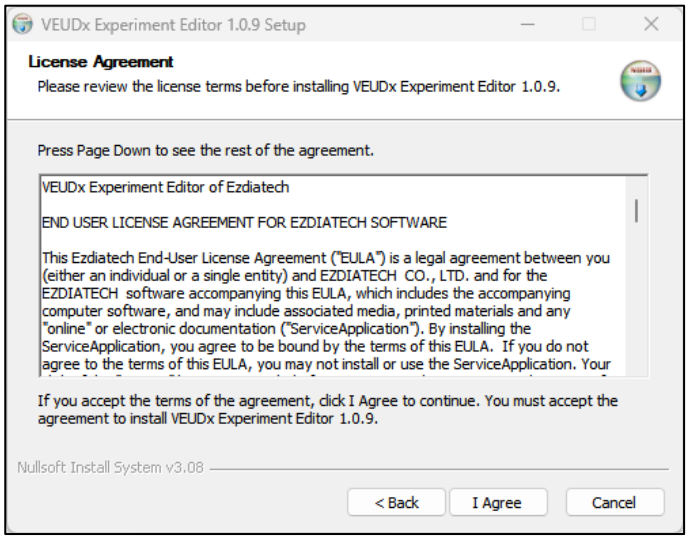
1.1.3 Start installation

Check the contents and click 'Next'.



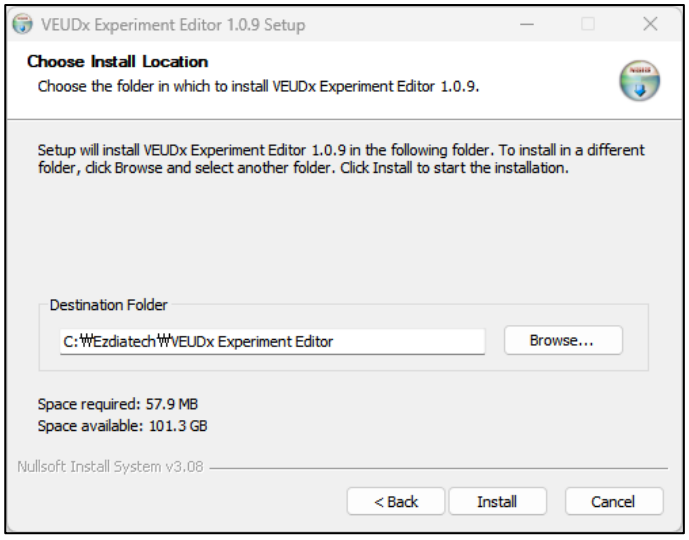
1.1.4 Check License

Read the license agreement and click 'I Agree'.



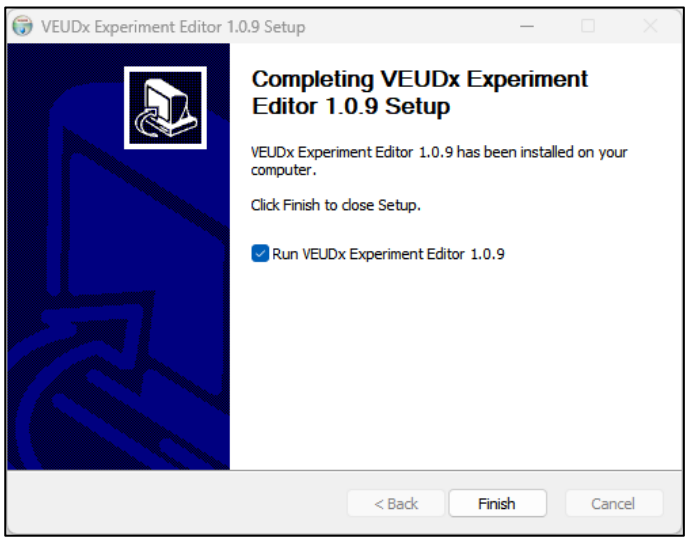
1.1.5 Installation location

Check the installation path and click 'Install'.



1.1.6 Installation completion

Check to run the program and click 'Finish'.



2. Term definition

2.1 ITEM

2.1.1 ITEM ITEM consists of ITEM name(ex) TBI, Neurology), Marker name, Pixel Cut, Experiment Protocol, etc.

2.1.2 Protocol Protocol is a collection of experimental procedures (Steps).

2.1.3 Step This is the procedure for each well. (ex) Well 6 Washing 1 min)

2.1.3 ITEM file ITEM File is created as VEUDxITEM_ITEM_name.zip file.
(ex, VEUDxITEM_TBI.zip)

2.2 LOT

2.1.1 LOT Depending on the produced LOT, it consists of Made Date, Serial, Expire Date, etc. An ITEM file is required to create a LOT.

2.1.2 LOT file A LOT XML file that stores LOT information and a Barcode PDF file are created.
Ex)
VEUDxLOT_TBI_EZTB22111601.xml
VEUDxLOT_TBI_EZTB22111601_BarCode.pdf

2.3 QC Material LOT

2.3.1 QC Material LOT Depending on the produced QC Material LOT, it consists of Made Date, Serial, Expire Date, etc. An ITEM file is required to create a QC Material LOT.

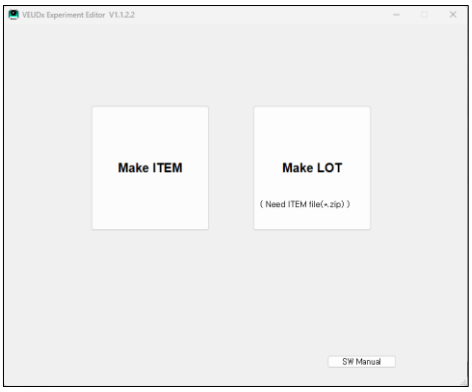
2.3.2 QC Material LOT file QC Material LOT XML file that stores LOT information and a Barcode PDF file are created.
Ex)
VEUDx_QC_LOT_TBI-assay_230921001.xml
VEUDx_QC_LOT_TBI_230921001_BarCode.pdf

3. Start

3.1 Start screen

3.1.1 Start screen

On the start screen, you can select 'Make ITEM', 'Make LOT', 'Make QC Material LOT' or 'SW Manual'.



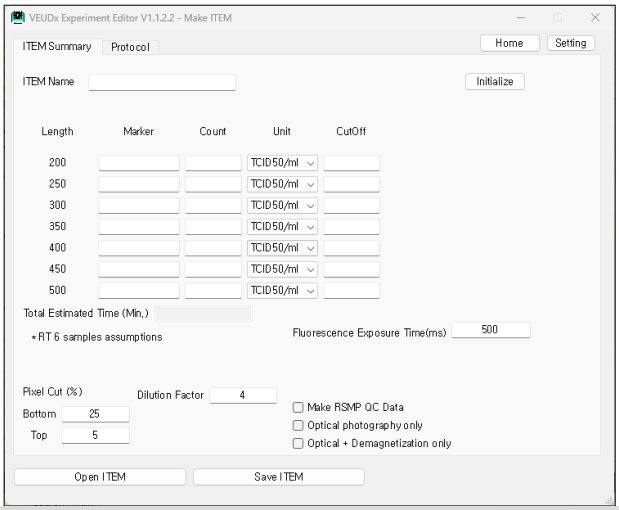
4. Make ITEM

4.1 ITEM creation start screen

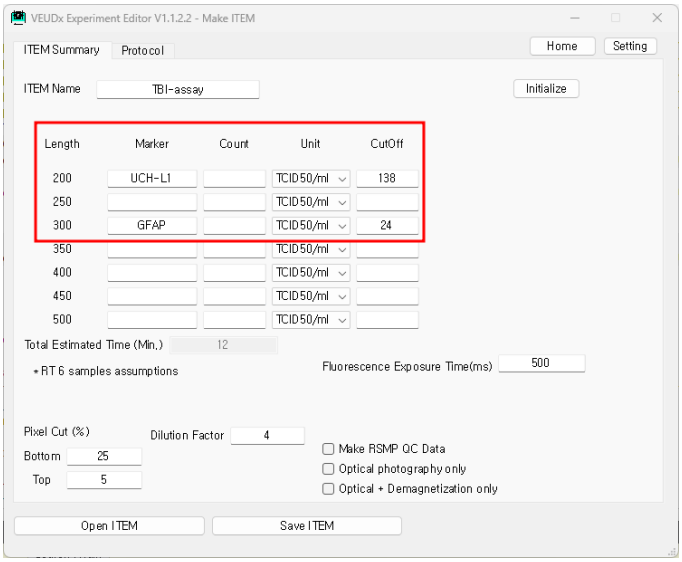
4.1.1 Start screen

ITEM Open, save and edit are possible.

- In the ITEM Summary tab, you can edit the item name, maker name by RSMP length, unit, CutOff, pixel cut, experiment time, Dilution Factor, Fluorescence Exposure Time, Optical photography only, etc.
- You can edit steps in the Protocol tab



- You must input information about the name, unit, and RSMP Length of the markers to be used for the item.
- Based on the input information, the fluorescence image is detected by RSMP Length and the result is calculated.

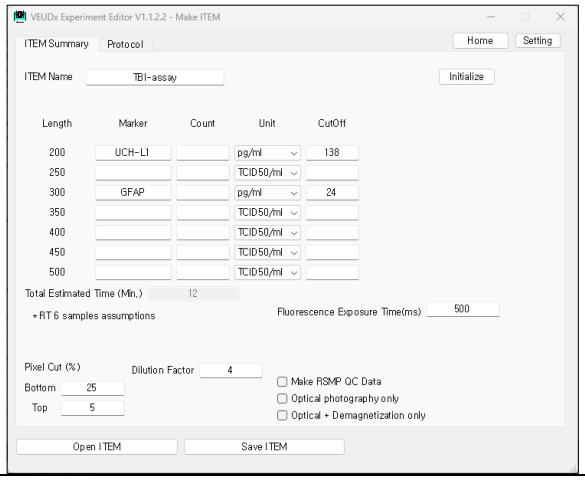


<VEUDx Analysis Result Screen>

4.2 Edit ITEM Summary

4.2.1 Open ITEM

Press the "Open ITEM" button to select the previously created ITEM file.
ITEM files are in *.zip. (ex, VEUDxITEM_TBI.zip)



4.2.2 Edit ITEM Summary

Editable below items

- Item name
- Marker name used by RSMP length
- Unit used by RSMP length
- CutOff for Result(Positive/Negative)

If you want to use a different concentration unit, you can add a concentration unit in 'Setting'

- Pixel Cut Bottom, Top (%)

  Remove noise caused by saturation when obtaining MFI.

  Defaults to Bottom 25% Top 5%.

- Dilution Factor

The calculated concentration value and the 'Dilution Factor' value are multiplied and displayed separately in a VEUDx Result(.csv) File.

UserID : Admin									
AnalysisDate : 2023-09-19 09:33:29									
RunningTime : 00:00:41									
ITEM : TBI-assay									
LOT ID : EZTB23072601									
	Result	Conc.(*DF)		Conc.		MFI		Well Bg B	Well Bg CV(%)
#.Sample		UCH-L1	GFAP	UCH-L1	GFAP	UCH-L1	GFAP		
1	Positive	792.476	744.264	198.119	186.066	21638.7	37300.6	3677.79	36.8548
2	Positive	429.024	321.724	107.256	80.431	12333.3	16572.3	3455.58	24.2337
3	Positive	96.304	80.84	24.076	20.21	4928.82	5770.24	3418.24	15.6008
4	Positive	7.8	28.432	1.95	7.108	3137.73	3673.79	3417.86	19.3441
5	Negative	4.36	2.012	1.09	0.503	1755.09	1652.69	2766.09	25.1271
6	Negative	6.824	2.636	1.706	0.659	2745.77	2165.72	2807.88	25.3188
		pg/ml	pg/ml	pg/ml	pg/ml				
ITEM(LOT	Marker	Cal_a	Cal_b	Cal_c	Cal_d	Cutoff			
TBI-assay(	UCH-L1	3329.702	1.156779	344418.6	1.03E+08	101(pg/ml)			
	GFAP	2685.655	1.089364	209949.7	73234192	17(pg/ml)			
Dilution Factor(DF) : 4									
Pixel Top cut : 5									
Pixel Bottom cut : 25									
FL_LED : 361									
FL_Exposure : 500									

<VEUDx Result(.csv) file>

- Fluorescence Exposure Time

The default value of Fluorescence Exposure is 500ms.(1~1000)

If the MFI value of the item you are using is high or low, adjust the 'Fluorescence Exposure' value.

(High MFI values can affect fluorescence saturation)

- Optical photography only

Check if you only want to image capture and Detecting

(RSMP is demagnetized)

- Optical + Demagnetization only

Check if you only want to image capture and Detecting

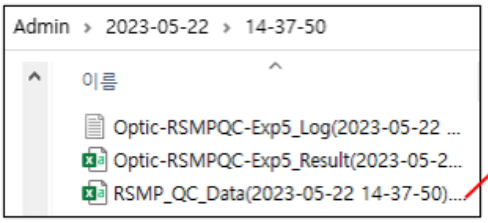
(RSMP is not demagnetized)

(RSMP should be in imaging well 8)

- Make RSMP QC Data

If you select the 'Make RSMP QC Data' Option, you can acquire MFI, CV(%) values for each RSMP and for the entire RSMP.

(Used to check RSMP Ab coupling QC status)



<Select Make RSMP QC Data Option>

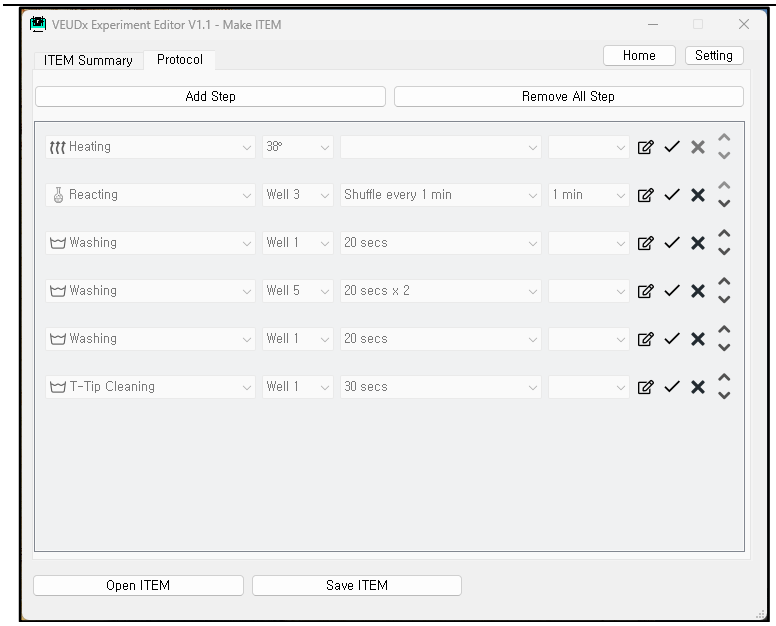
Cartridge1			
RSMP	MFI	STDEV	CV(%)
1	27793.9	7670.2	27.5967
2	25359.5	6268.25	24.7176
3	32523.1	9540.35	29.3341
4	29816.1	8989.08	30.1484
5	26123.3	6210.1	23.7722
6	30254.4	7411.64	24.4977
7	25311.5	8759.78	34.6079
8	22506.7	7082.12	31.4668
9	27966.5	7981.9	28.541
10	29312	6347.73	21.6557
11	29546.5	9441.77	31.9556
12	32746.4	15021.4	45.872
13	29371	12198.2	41.5313
14	25405.5	11669.9	45.9346
15	28429	11555.8	40.648
16	20178.1	4986.54	24.7126
17	24910.8	5694.06	22.8578
18	24262	8428.5	34.7395
19	31228.1	7274.75	23.2955
20	29123.8	5586.85	19.1831
21	26226.2	6798.9	25.9241
22	28735.2	6419.81	22.3413
23	26659.1	8307.48	31.1618
24	29073.8	6705.22	23.0628
25	29002.5	5813.24	20.044
26	33350.8	10017.8	30.0377
27	31911.5	9865.93	30.9165
28	32402.5	9230.65	28.4875
29	28249.9	7301.46	25.846
30	29633.6	6110.93	20.6216
Total	MFI	STDEV	CV(%)
	28247.1	3057.53	10.8242

<RSMP QC Data Result(.csv) file>

4.3 Edit Protocol

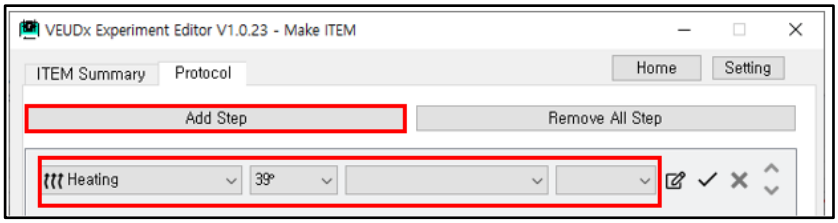
4.3.1 Protocol tab

If you select the Protocol tab, you can edit the Step.



4.3.2 Add Step

Click the "Add Step" box at the top and add an item.



- Selection by Category

.Heating : 30°/ 35° / 37° / 38° / 39° / X / RT selectable

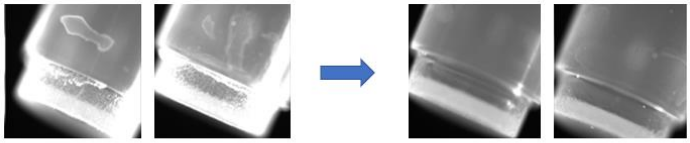
.Reacting : Reaction Well (Well 2~5) selectable

- Shuffle every 2min (Change the location of RSMP every 2 minutes.)
  -> 1~30 min selectable
- Shuffle every 5min (Change the location of RSMP every 5 minutes.)
  -> 1~480 min selectable

.Washing: Well1~7 and time (30 secs, 20 secsX2, 30 secsX2) selectable

.T-Tip Cleaning: Well1~7 and time (30 secs) selectable

'T-tip Cleaning' use after Staining Reaction to prevent PE buffer from remaining on the T-Tip into the Imaging Well.



T-Tip image after Staining Reacting (SA-PE)

T-Tip Image after using 'T-Tip Cleaning' action.

Heating can be selected only once and must be located only in the first step.

4.3.3 Edit Step

- : Change edit Step mode
- : Save Step
- : Delete Step
- : Change Step Order

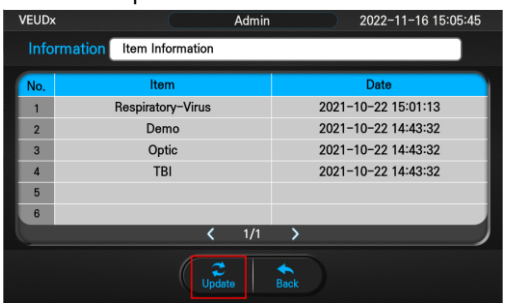
4.4 Save ITEM and Installation

4.4.1 Save ITEM to PC

Click the "Save ITEM" button to create an ITEM zip file.
*For how to save only protocol (script) for development reference, refer to the setting section.

4.4.2 ITEM installation on VEUDx equipment

1. Copy the ITEM file created above to an external USB memory
2. Run VEUDx equipment
3. Admin Login (Initial Admin Password: 0000)
4. Click Settings
5. Click Information
6. Click Item
7. Mounting on an external USB memory device
8. Select Update



When you press "Update" button, you can check the updateable ITEM list.
(Update file must be placed in the USB Root folder)

9. Select ITEM to update

10. ITEM update complete

11. Restart after shutting down the equipment

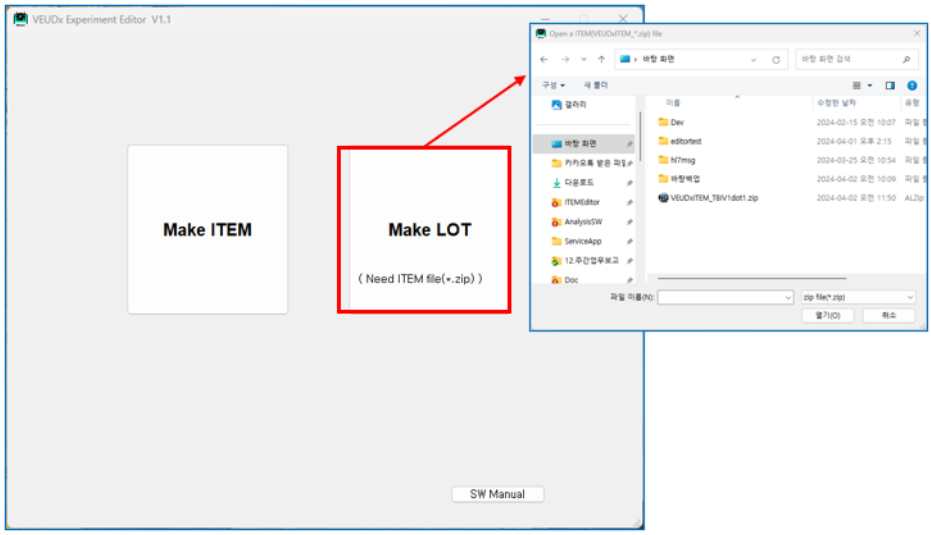
When you press each item, you can check detailed information such as each marker name and unit.

5. Make LOT

5.1 Select ITEM file

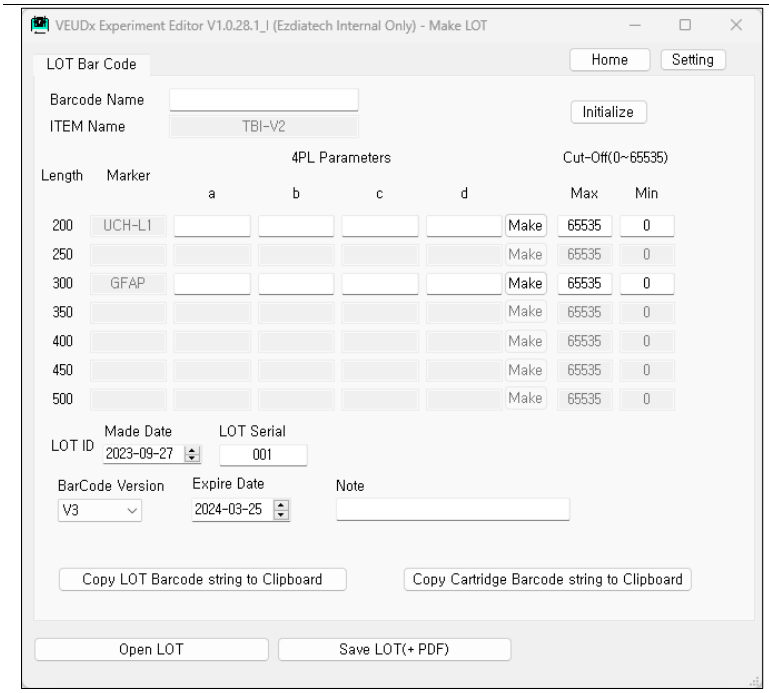
5.1.1 Select ITEM file

Select ITEM file to make LOT.



5.2 Make LOT

5.2.1 Start



The ITEM name and Marker name read from the ITEM file are displayed.

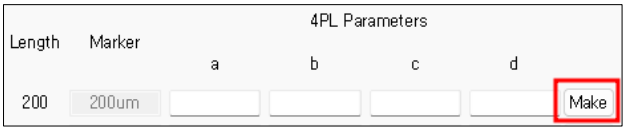
5.2.2 Enter LOT information

- 4PL Parameters (a, b, c, d)
- LOT creation date
- LOT Serial
- LOT Expire Date can be entered.

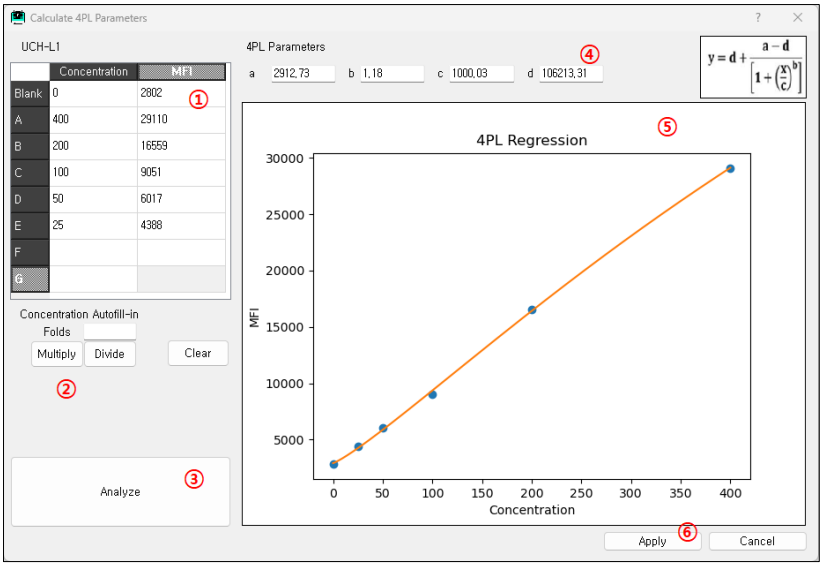
*Barcode Name, Note can be used as a reference.

5.2.3 Calculate 4PL Parameters

- Select “Make” button for each Maker.



- 4PL calculation screen



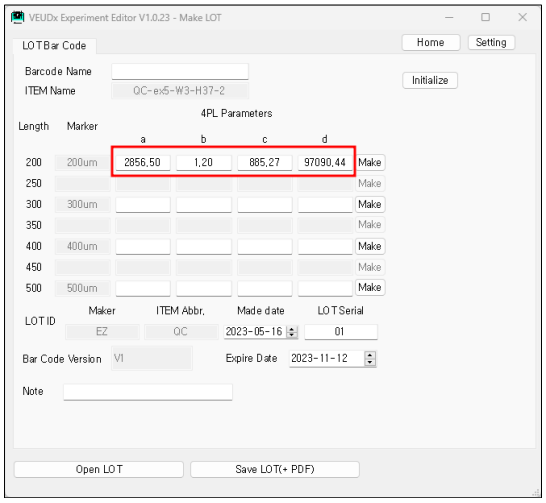
① Concentration, MFI input
(Copy/Paste available in Excel/Notepad)

② Automatically multiply and divide as much as Folds(multiples) based on A concentration

③ Calculate 4PL parameters and graphs according to the input concentration and MFI values

④ Calculated graph

⑤ Apply to the LOT edit screen by selecting "Apply" button



5.2.4 Copy Barcode string to Clipboard

When you press the "Copy LOT Barcode string to Clipboard" Button, the LOT Barcode string below will be copied to the clipboard.
Ex)"VEUDx-L/V3/230927001/TBI-V2/240325/1_a2_b3_c4_d5_x65535_n0/3_a6_b7_c8_d9_x65535_n0"

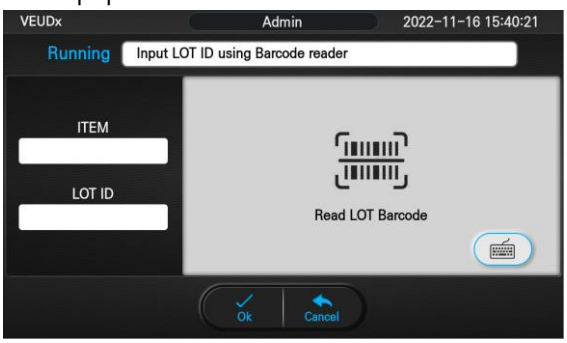
When you press the "Copy Cartridge Barcode string to Clipboard" Button, the Cartridge Barcode string below is copied to the clipboard.

ex)"VEUDx-C/V3/230927001"

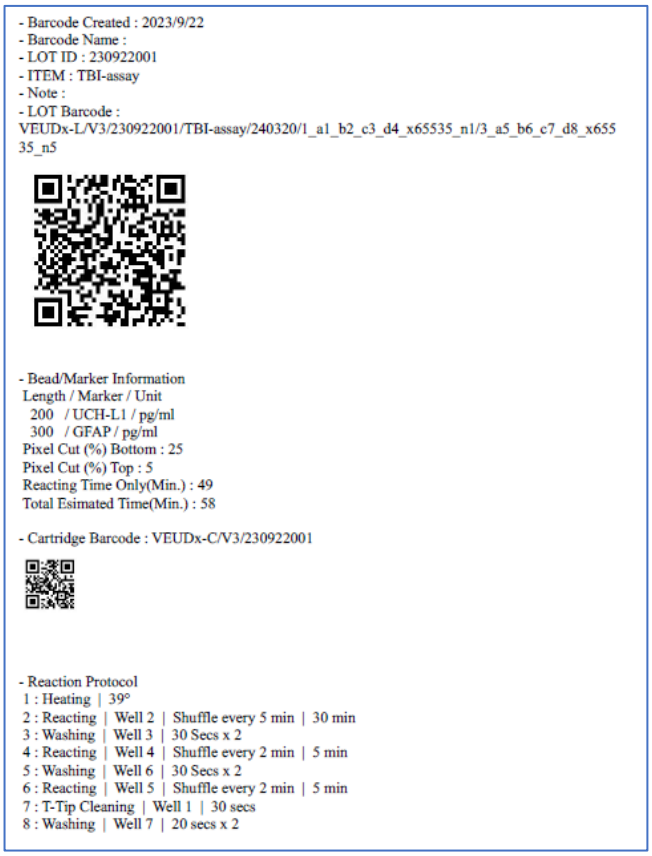
5.2.3 Save LOT Click the "Save LOT(+PDF)" button
Two LOT XML files and Barcode PDF files are created.

- LOT XML file (ex, VEUDxLOT_TBI_EZTB22111601.xml) Used to save work When using VEUDx equipment, it can be used when there is no Barcode Reader equipment.

- Barcode PDF file (ex, VEUDxLOT_TBI_EZTB22111601_BarCode.pdf)
It is used for reading VEUDx equipment LOT/Scrip Barcode by printing it out on paper.



< VEUDx equipment LOT reading screen >



- Barcode Created : 2023/9/22
- Barcode Name :
- LOT ID : 230922001
- ITEM : TBI-assay
- Note :
- LOT Barcode :
VEUDx-L/V3/230922001/TBI-assay/240320/1_a1_b2_c3_d4_x65535_n1/3_a5_b6_c7_d8_x65535_n5

- Bead/Marker Information
Length / Marker / Unit
200 / UCH-L1 / pg/ml
300 / GFAP / pg/ml
Pixel Cut (%) Bottom : 25
Pixel Cut (%) Top : 5
Reacting Time Only(Min.) : 49
Total Esimated Time(Min.) : 58

- Cartridge Barcode : VEUDx-C/V3/230922001

- Reaction Protocol
1 : Heating | 39°
2 : Reacting | Well 2 | Shuffle every 5 min | 30 min
3 : Washing | Well 3 | 30 Secs x 2
4 : Reacting | Well 4 | Shuffle every 2 min | 5 min
5 : Washing | Well 6 | 30 Secs x 2
6 : Reacting | Well 5 | Shuffle every 2 min | 5 min
7 : T-Tip Cleaning | Well 1 | 30 secs
8 : Washing | Well 7 | 20 secs x 2

< PDF file for LOT Barcode output >

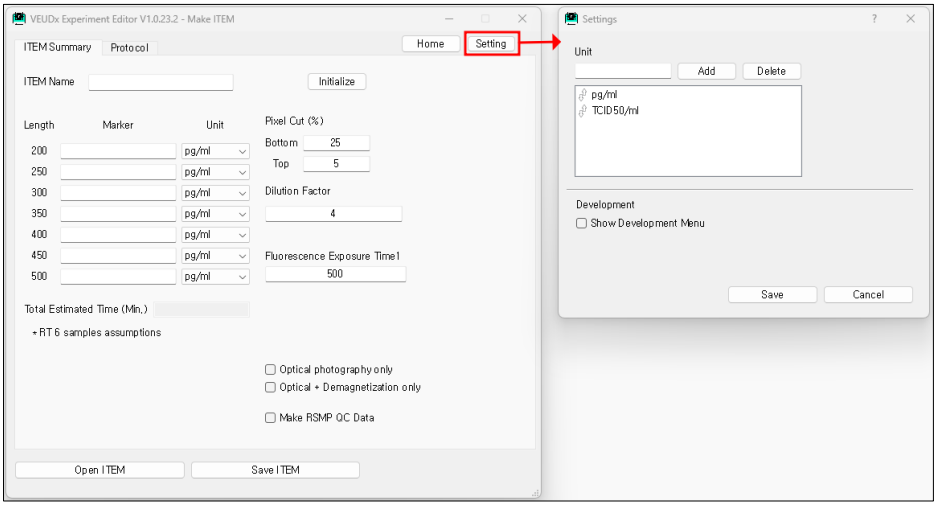
5.2.4 Open LOT Editing is possible by selecting the saved LOT XML by pressing the "Open LOT" button.

6. Settings

6.1 Open Settings

6.1.1 Open Settings

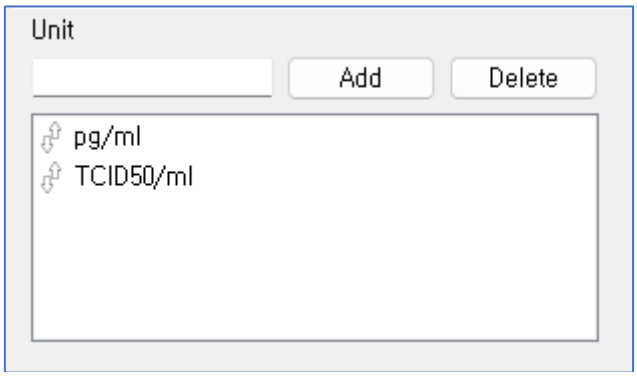
'Press the 'Settings' button.



6.2 Unit

6.2.1 Unit

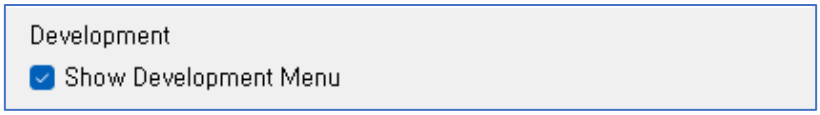
Units to be displayed in the Unit Combo List of the ITEM Summary tab can be edited.

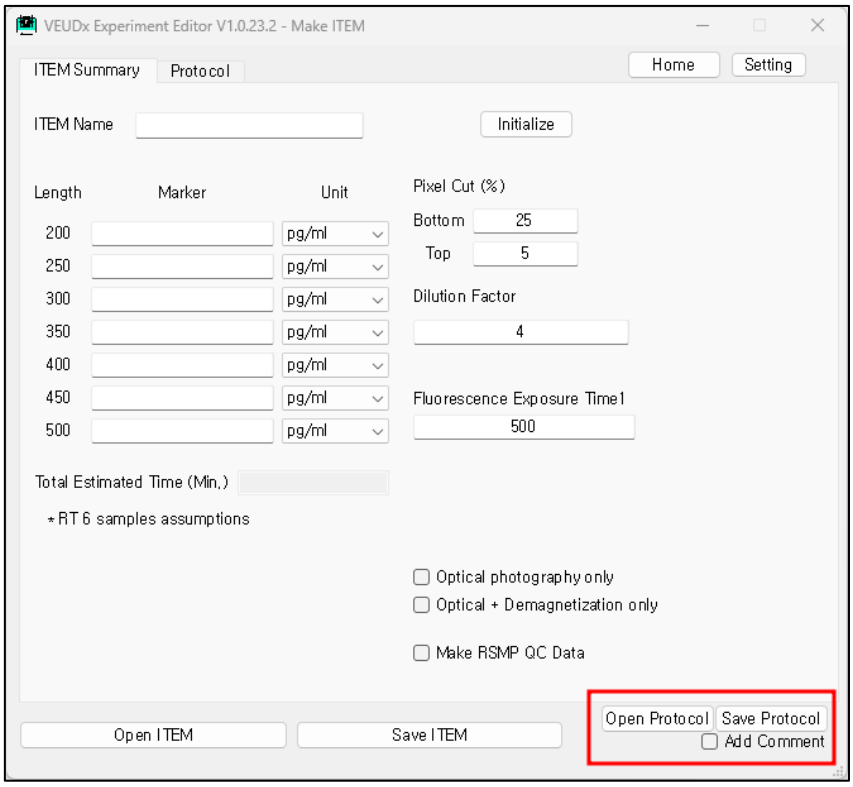


6.3 Development menu

6.3.1 Development menu

If you select the development menu, you can open/save only the protocol and display comments for analysis.



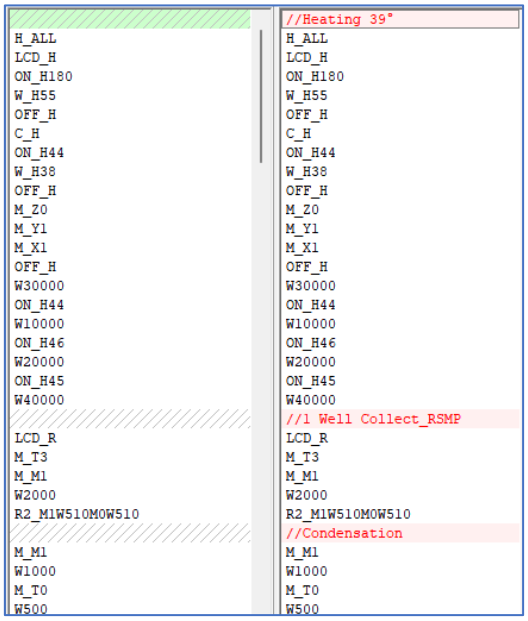


6.4.2 Save protocol file

If you press the 'Save Protocol' button, only the Protocol (Script) file can be saved separately.

This is a development file and cannot be installed on a machine.

When "Add Comment", comments are displayed on the Protocol (Script).



< Protocol display according to annotation options >