Cytiva Amersham™ ImageQuant™ 800

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Overview & Initialization

Turning system ON

- Press the power button of the IQ800 & PC

1 Power button
2 External mini PC
3 Cable organizer

1 Touchscreen
2 System power and status indicator
3 Door
4 Filter access door
5 Power button

Ready to use

System busy

System error, check the instrument and the log file record

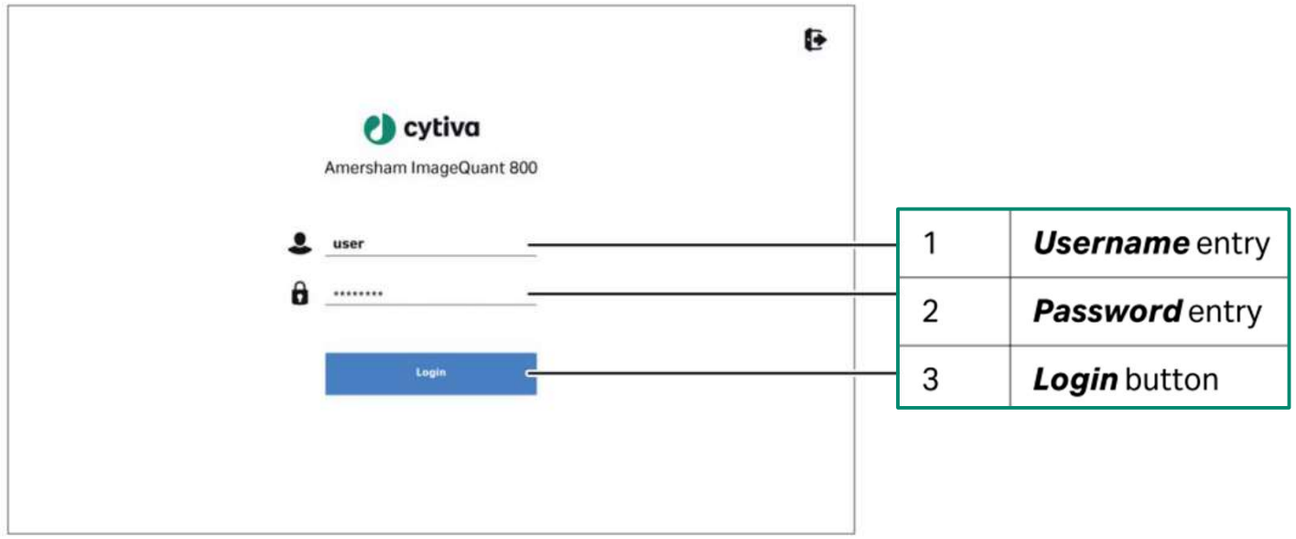
Overview & Initialization

Software initialization

- The IQ800 control will start up automatically after log into the windows

進入軟體各功能介面，一般簡化操作可直接跟隨藍色Button進行，由左而右進行設定

Log-in Interface



The Control Software Operation

Amersham™ ImageQuant™ 800

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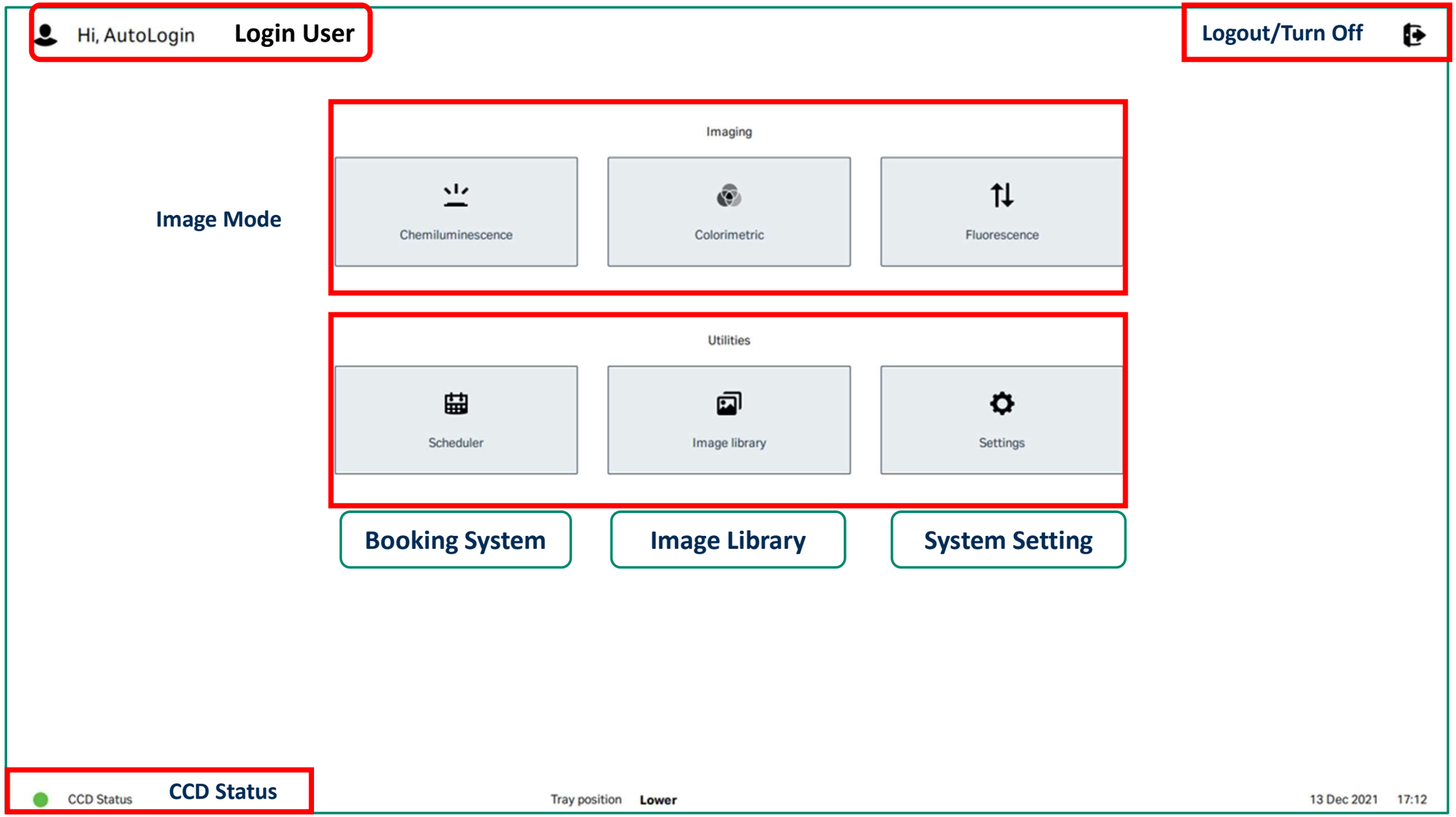
The Interface Screen of The IQ800 Control



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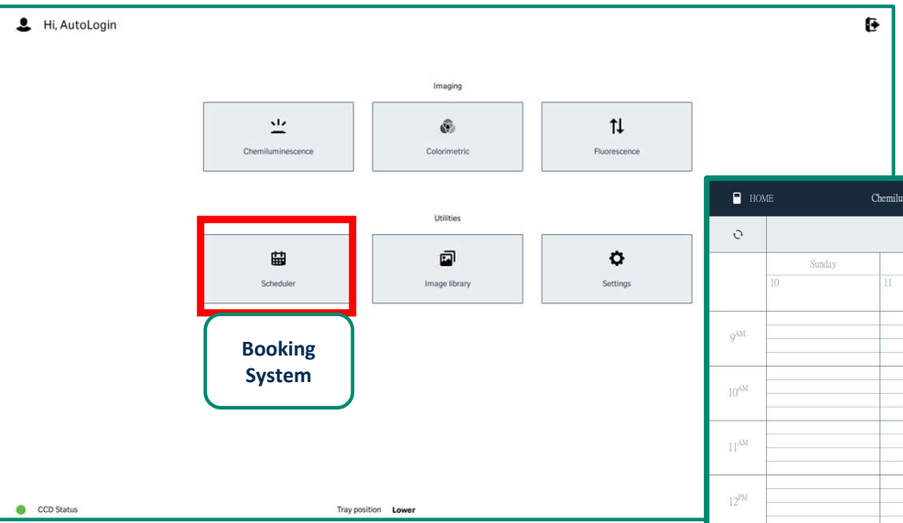
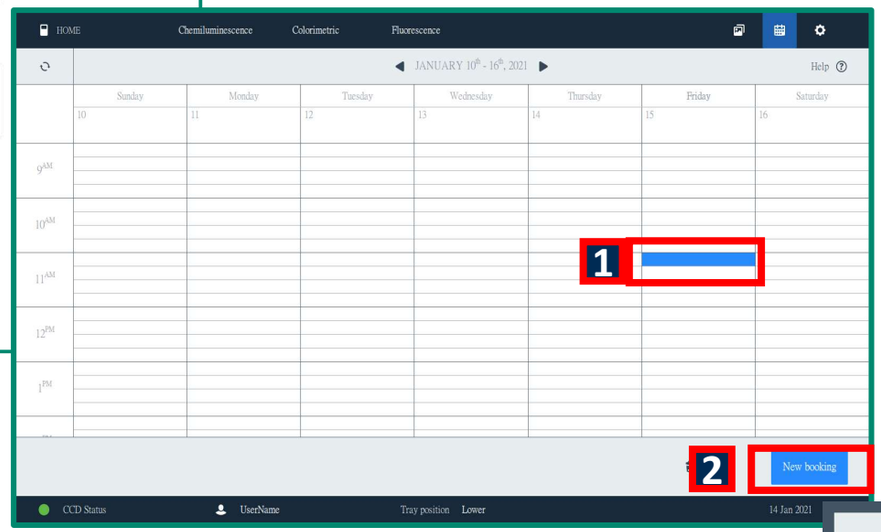
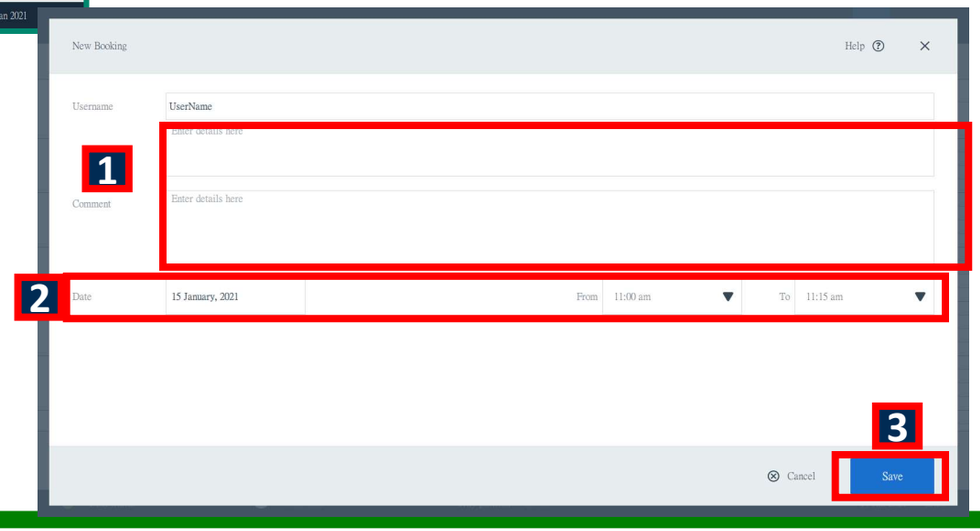
The Booking System







A 登入Booking system
B 點選欲預約時段
C 確認時段及填寫實驗內容後即可儲存預約

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Capture The Image of Chemiluminescence with Auto mode

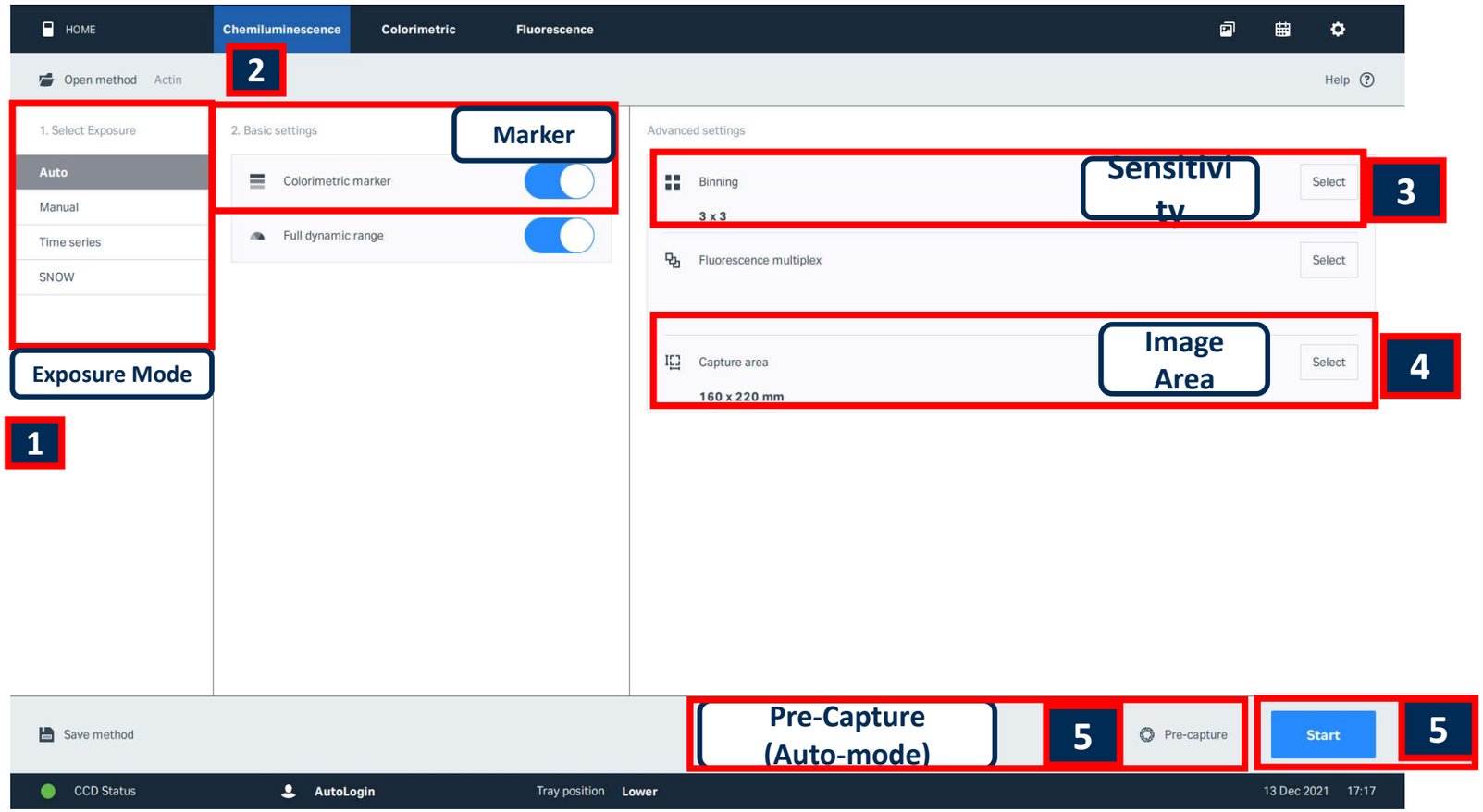
Exposure mode

Auto-當影像需要擷取整張樣品的最佳動態範圍時，系統會計算不超過飽和曝光的曝光時間點來擷取影像

Pre-Capture-對樣品特定區域感興趣時，系統會短時間預曝光取得一張影像，再藉由選擇樣品需要聚焦的區域，軟體會計算其最佳的曝光時間

Manual-自動曝光後影像仍不足或已知樣品所需的曝光時間，進行手動曝光時間設定後進行擷取影像

Time series-針對樣品進行累積曝光，須設定重複張數(上限50張)及曝光間隔時間(10sec起)，以做擷取連續影像



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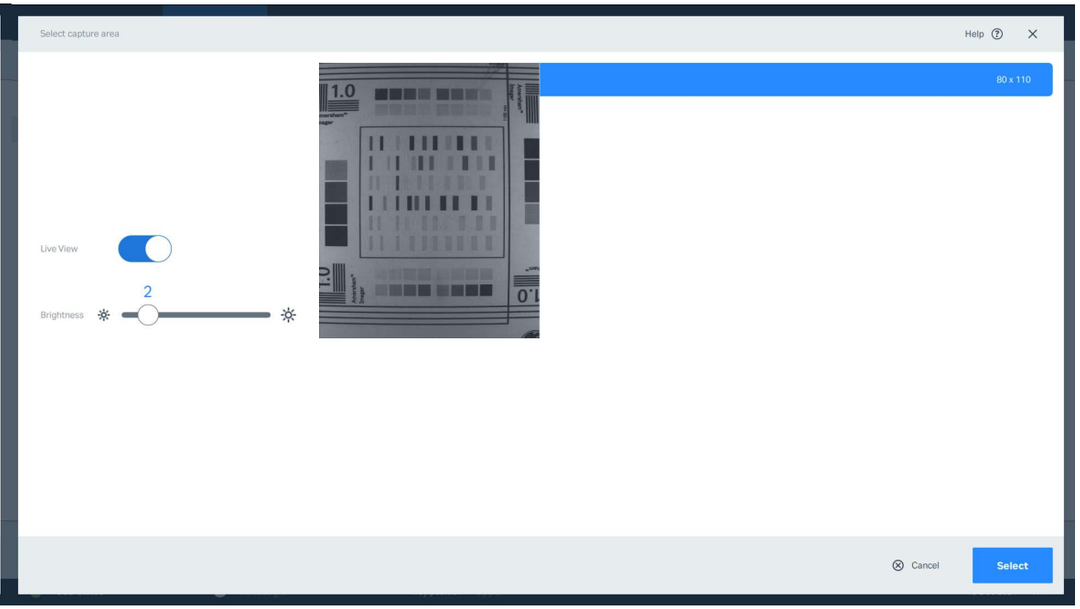
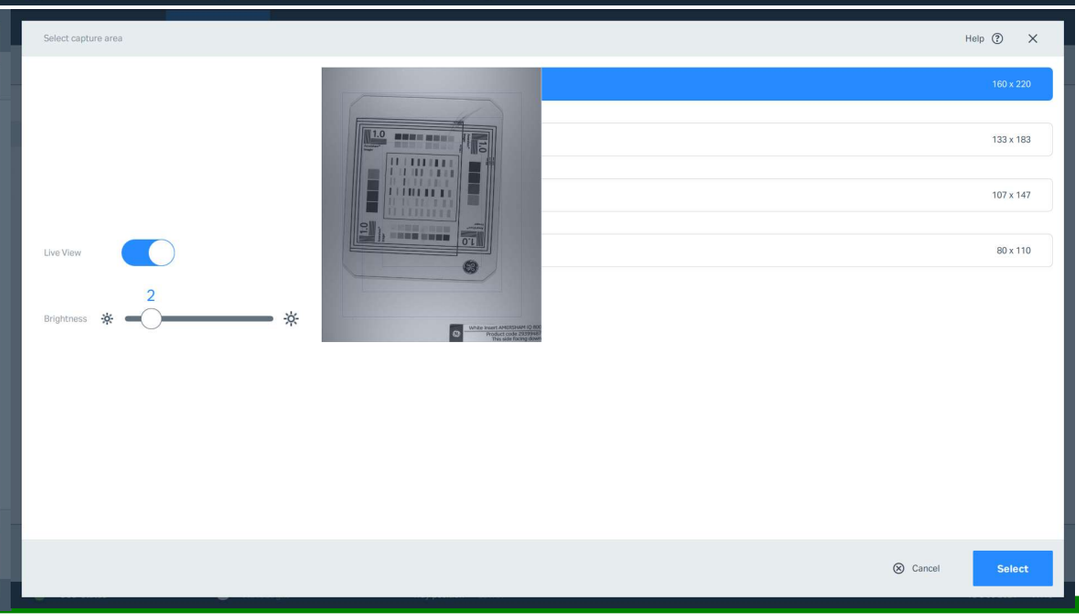
Sensitivity, Image Area Setting

Upper Layer



Lower Layer



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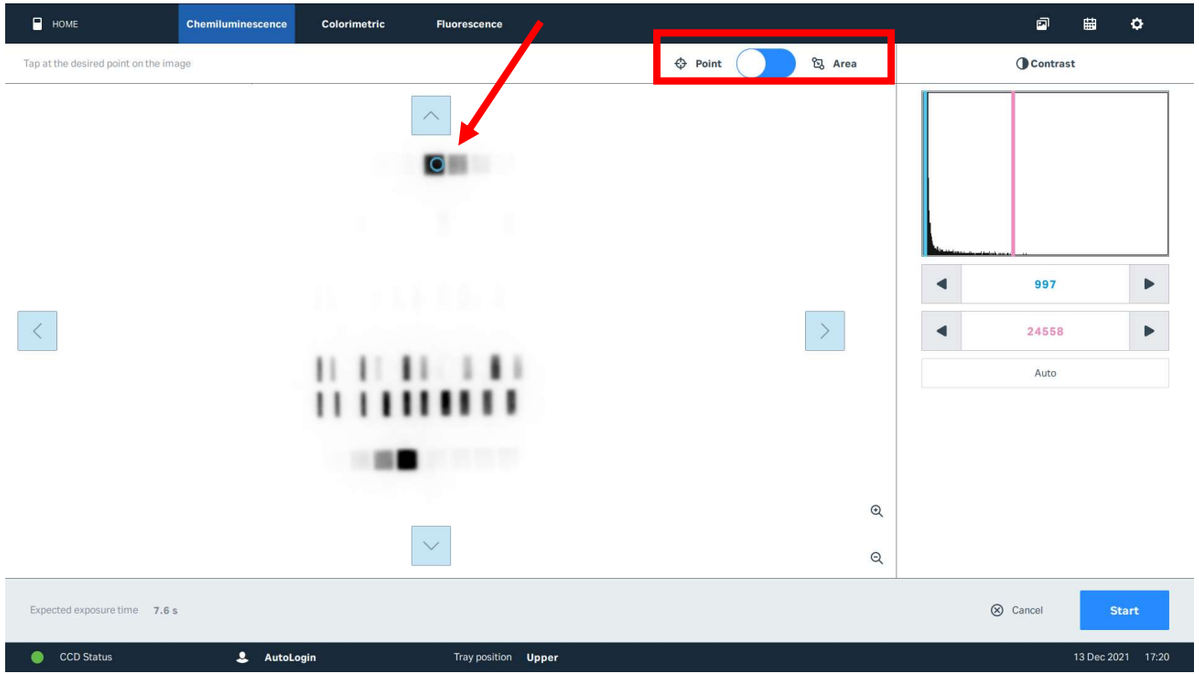
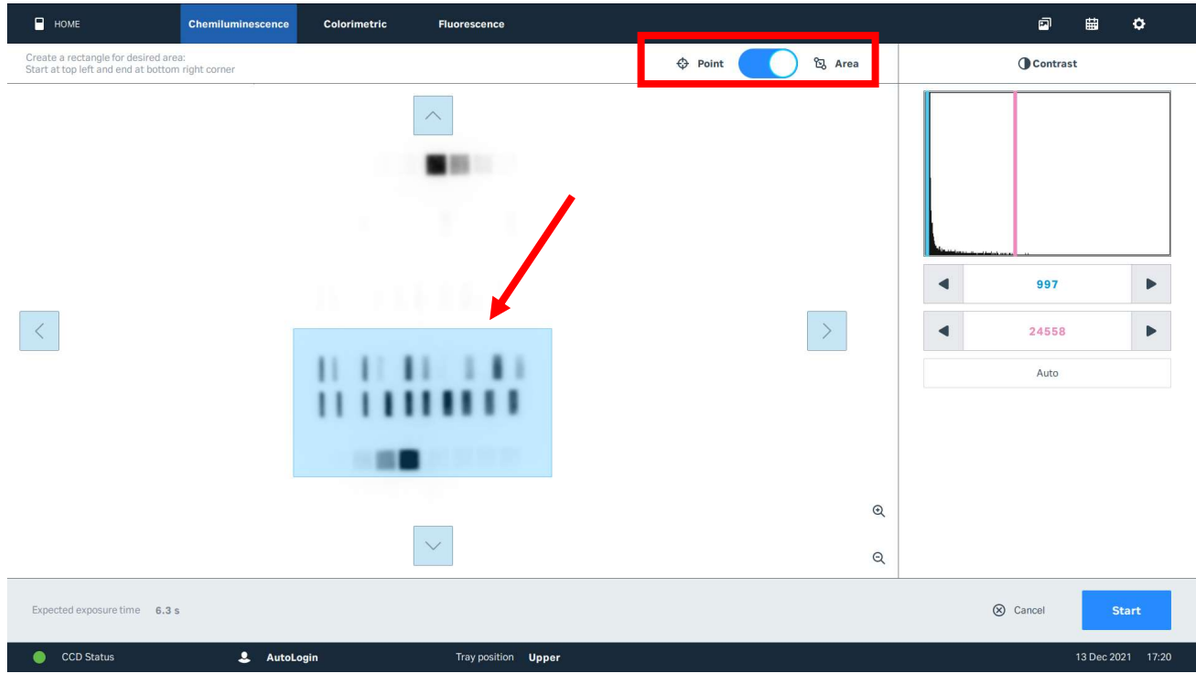
Pre-capture Process：Select the target signal

Select the target site or area, then the system will show the expect exposure time as your reference.

Point target



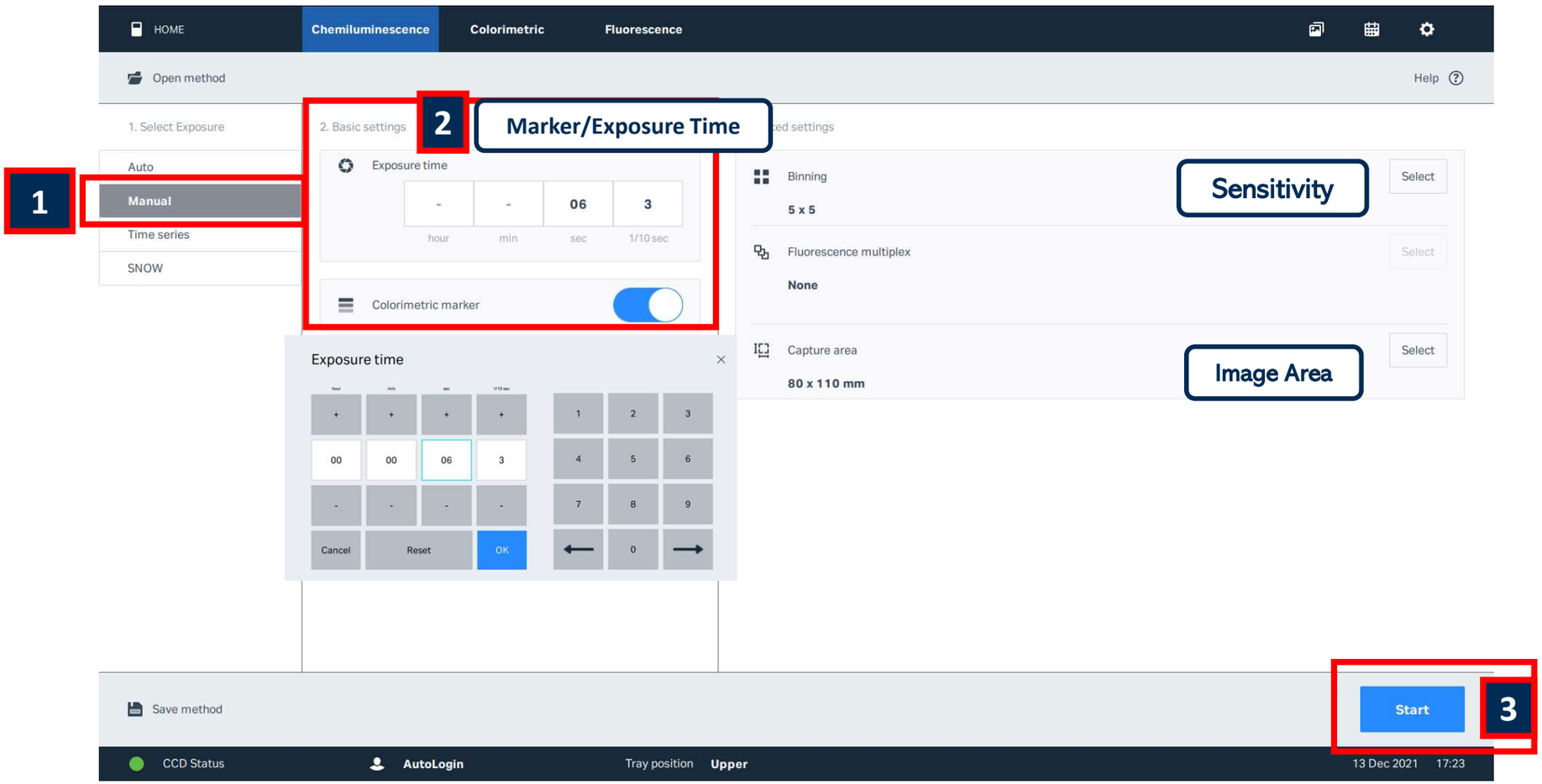
Area target



Manual Exposure Setting

Exposure mode

Manual-自動曝光後影像仍不足或已知樣品所需的曝光時間，進行手動曝光時間設定後進行擷取影像

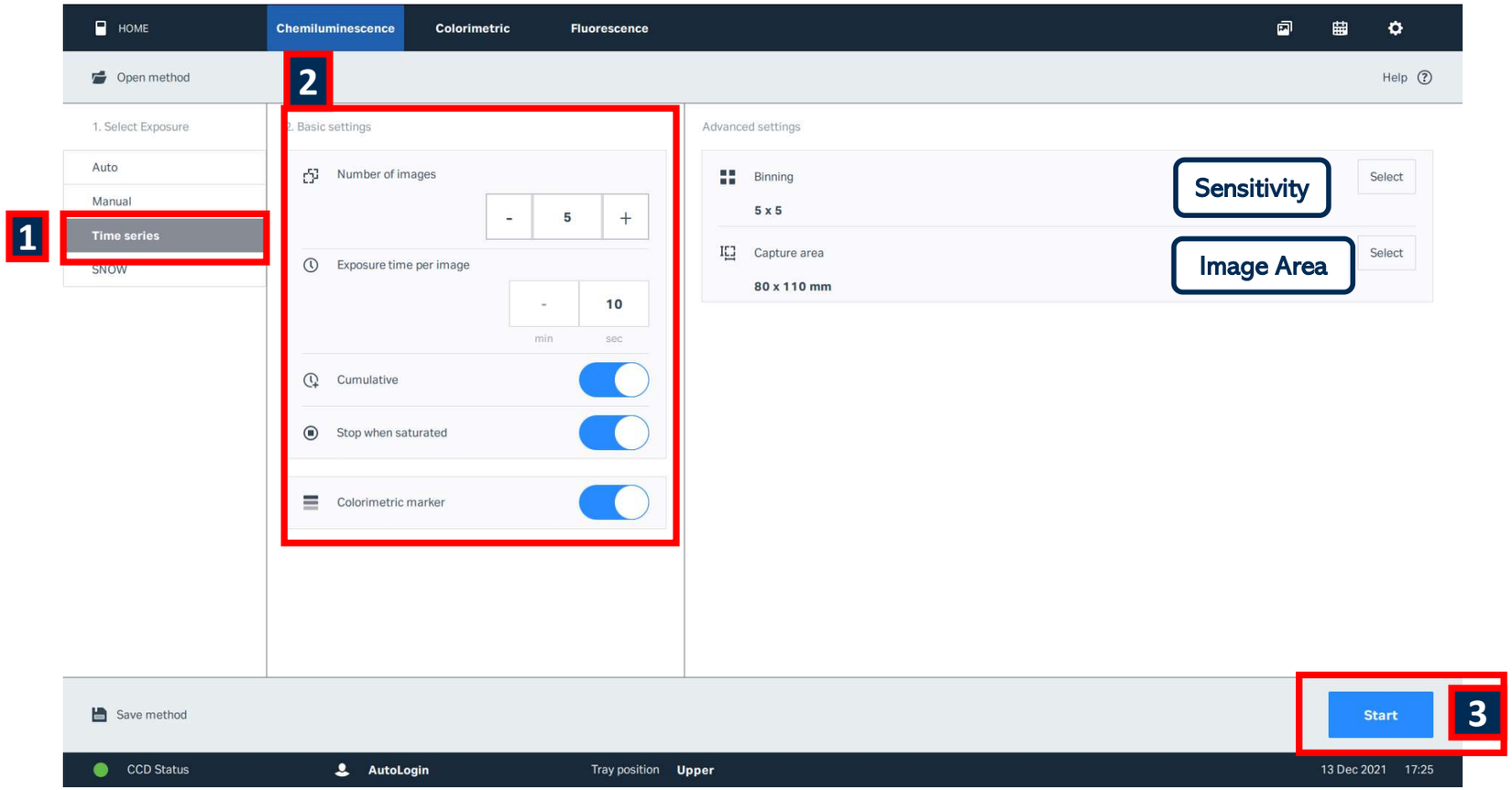


Time Series Exposure Setting

Exposure mode

Time series-針對樣品進行累積曝光，須設定重複張數(上限50張)及曝光間隔時間(10sec起)，以做擷取連續累積曝光影像

Cumulative-如不須進行曝光訊號的累積，則可關閉此功能



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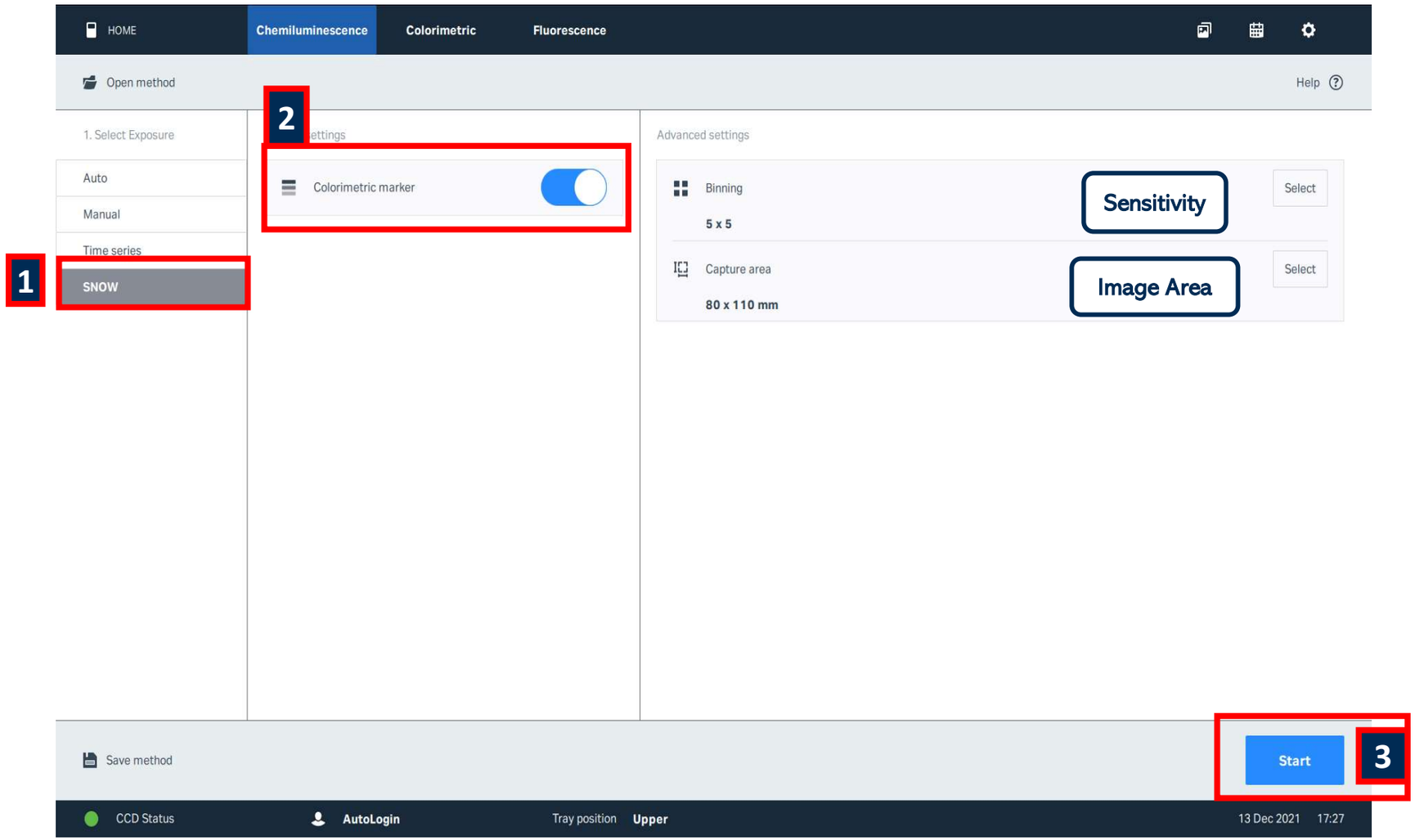
Snow mode Exposure Setting

Exposure mode

Snow mode-針對強弱差異極大的樣品，且微弱訊號受到周遭背景訊號遮蔽干擾的樣品，進行背景雜訊平均化的曝光

系統會進行預曝光後，再依曝光範圍，有興趣的微弱訊號位置及干擾的背景處進行設定後，進行訊噪比最佳化的影像曝光，所需時間較長，但能最有效針對微弱影像進行曝光，以取得最大動態範圍的影像結果



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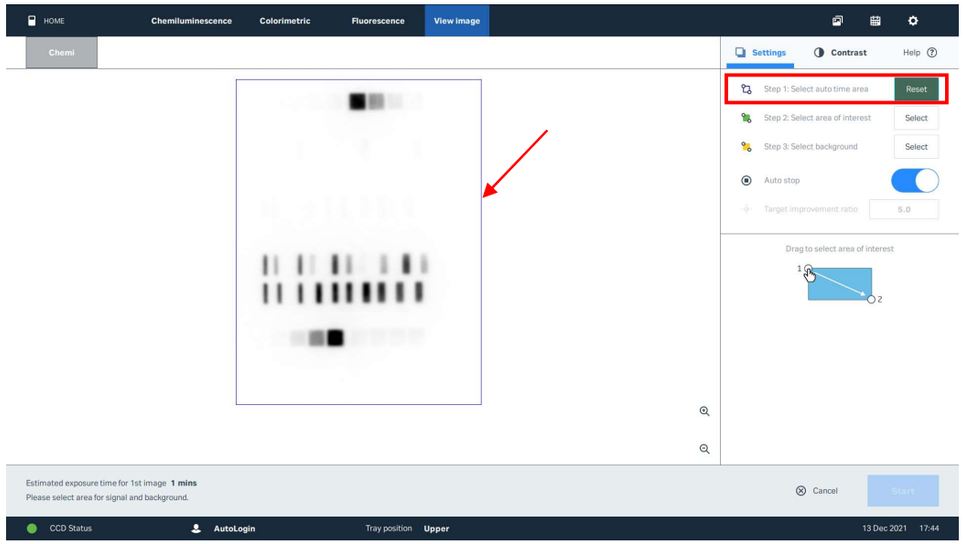
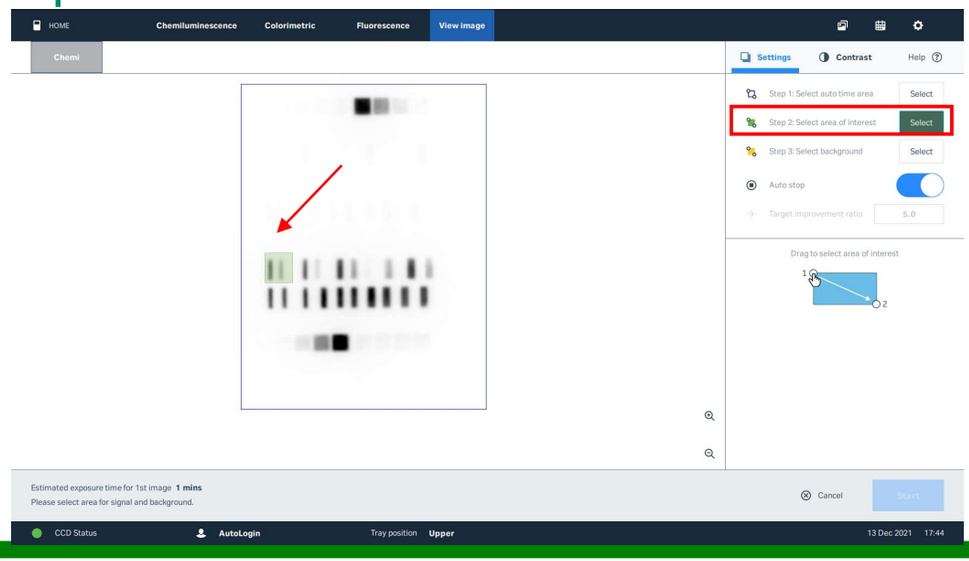
Snow mode Exposure Setting

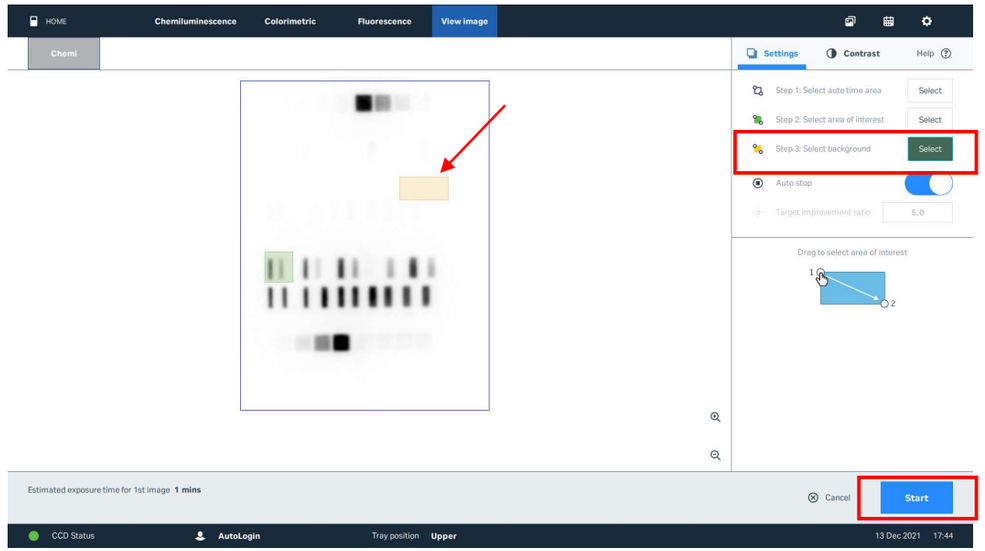
Step 1 Select Image Area



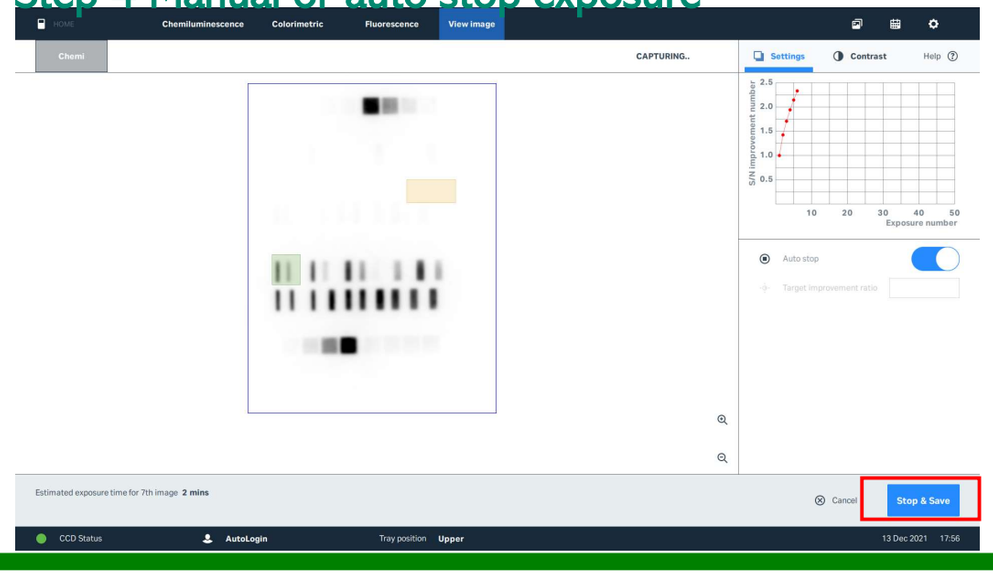
Step 2 Select interest area



Step 3 Select background area, then start exposure



Step 4 Manual or auto stop exposure



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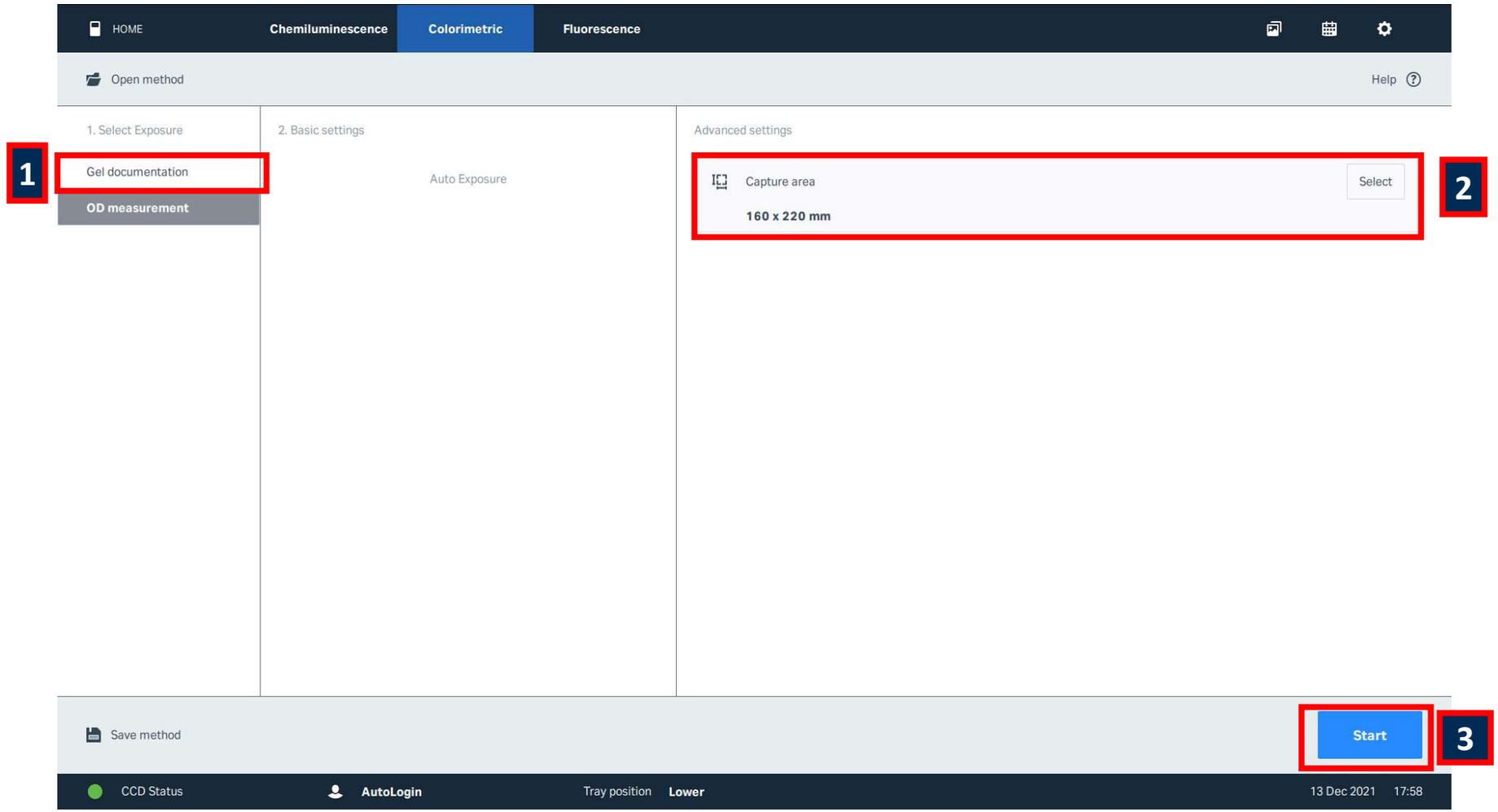
Colorimetric Exposure Setting

Exposure mode

可見光曝光-托盤可放置上層及下層,需搭配白色背景片，如需拍攝12孔盤以下的多孔盤，則建議放置上層進行拍攝．



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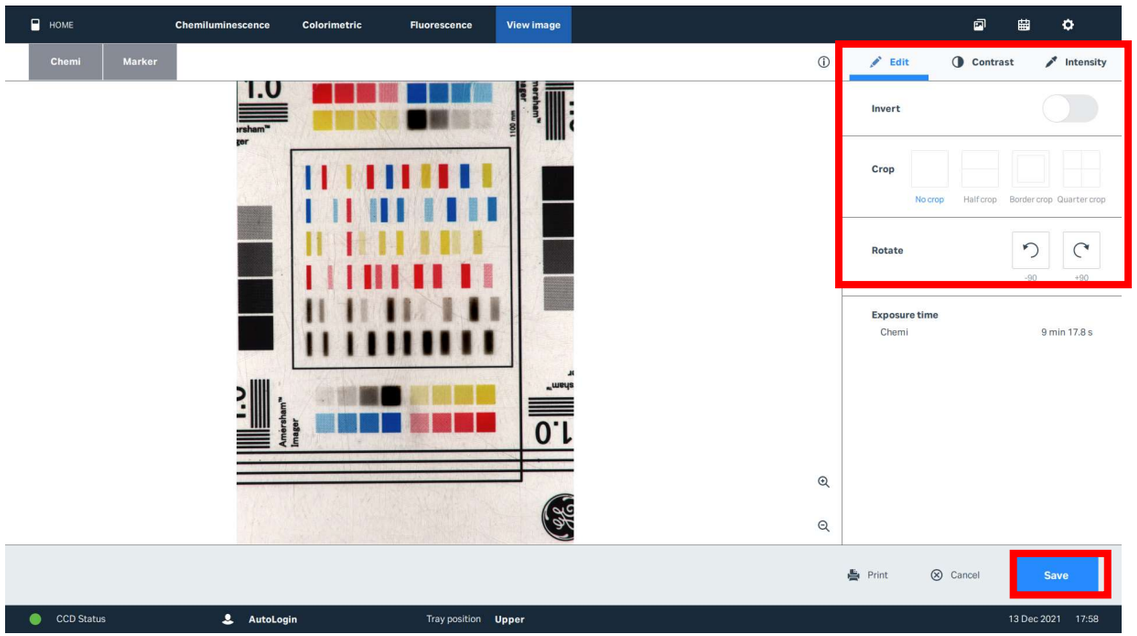
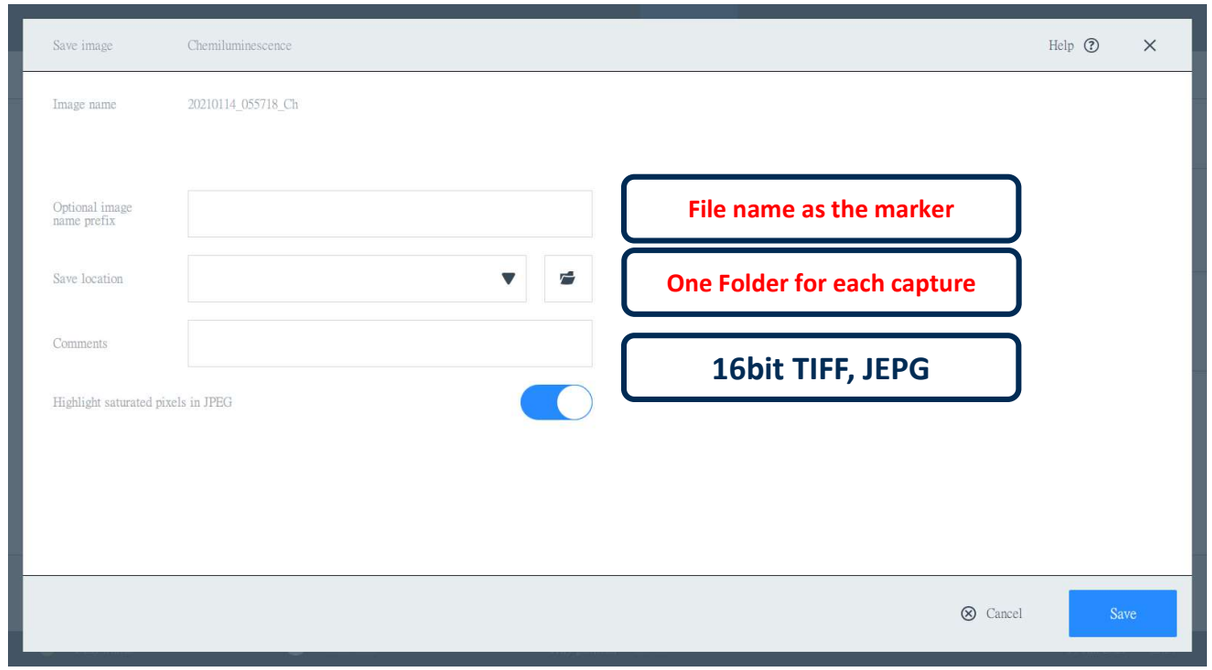
Save the Image

Edition the contract, the image will output as the TIF, JPG file.
The TIF file is the original file for analysis



The capture date will be automatic named.



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Saving location setting

In the setting mode, you can add the saving folder your own and make it as the default folder.

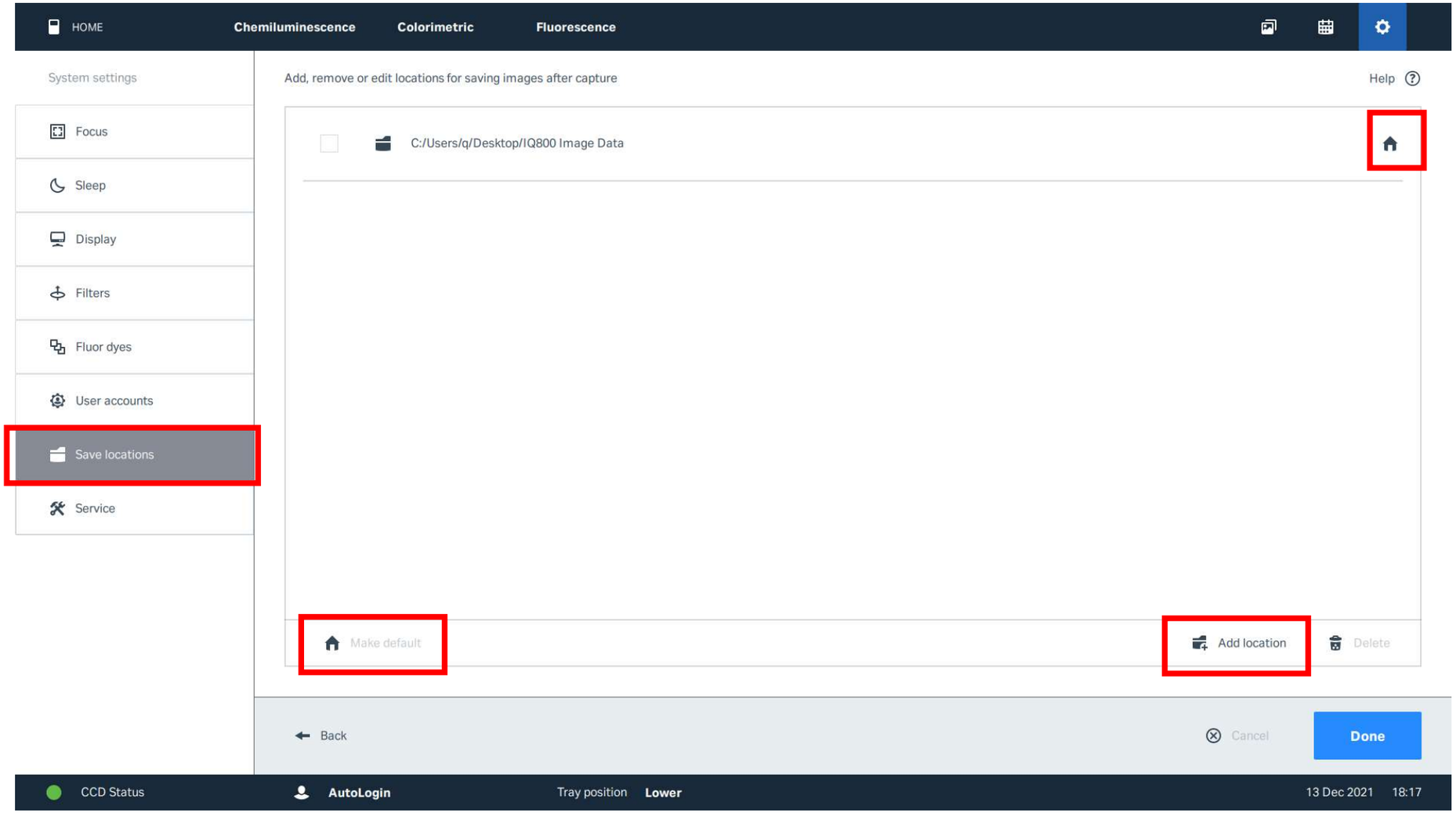

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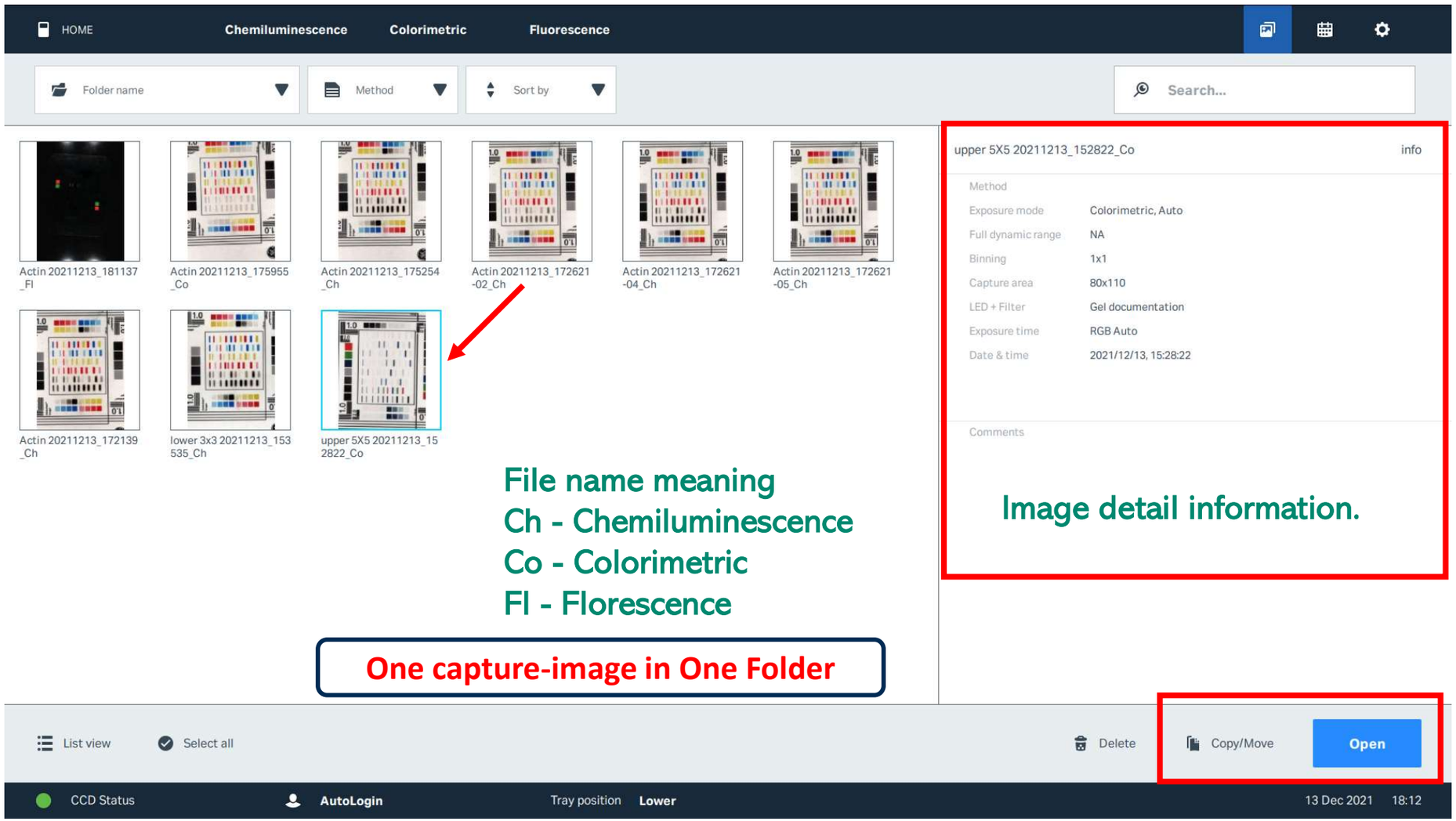
Image Library

Select your images then copy and move them to you device.



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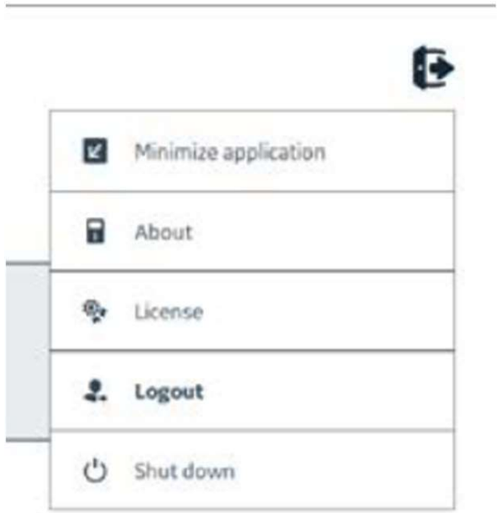
Logout and shutdown



Minimize application the control software

Logout the personal account

Shut down the IQ800 and Computer

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ImageQuantTL

v10.0 - 261

The Quick Operation of ImageQuant TL 10.0 image analysis software

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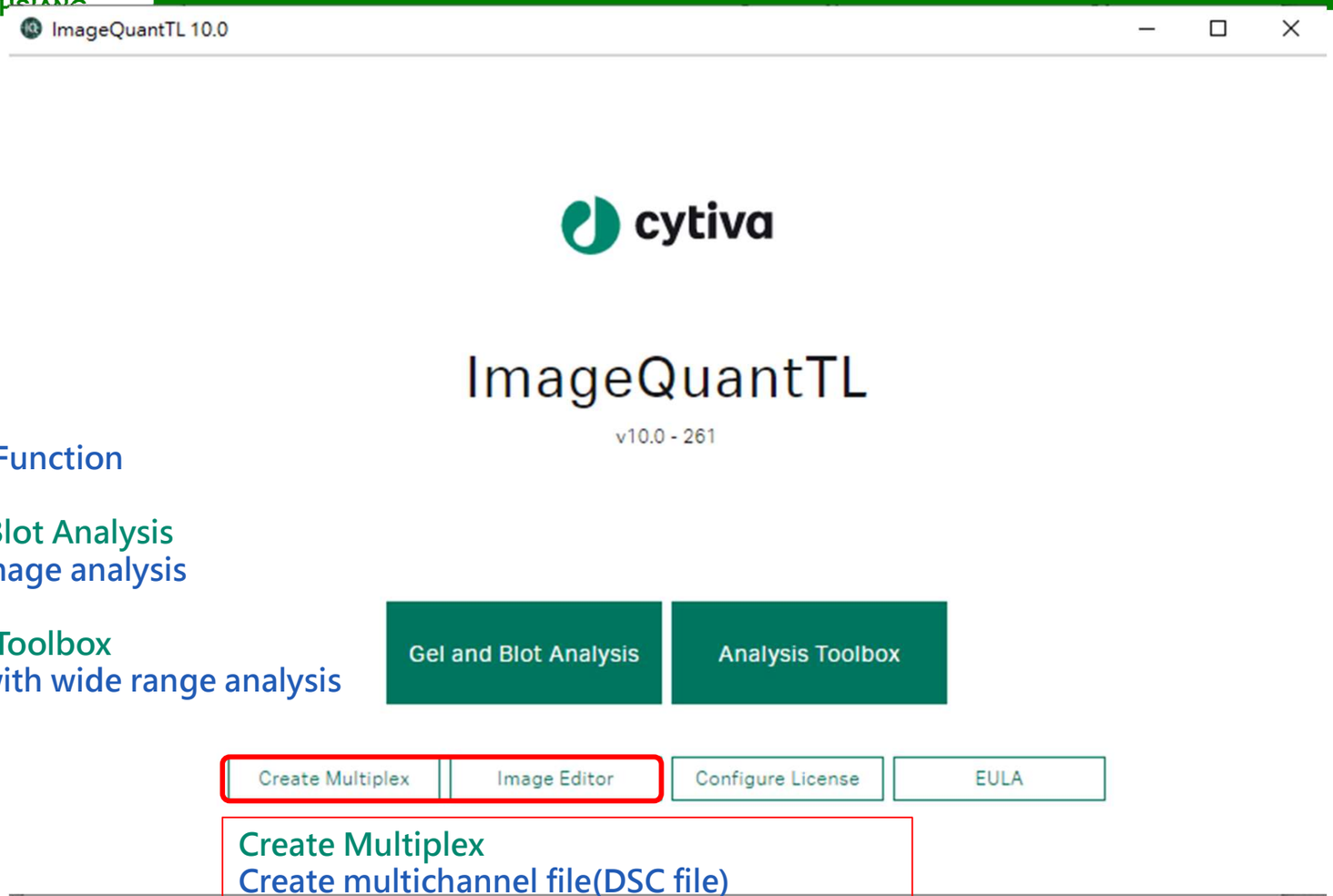
The interface introduction



Analysis Function

Gel and Blot Analysis
1D Gel image analysis

Analysis Toolbox
Images with wide range analysis

Create Multiplex
Create multichannel file(DSC file)

Image Edition
For image edition(ex rotation)

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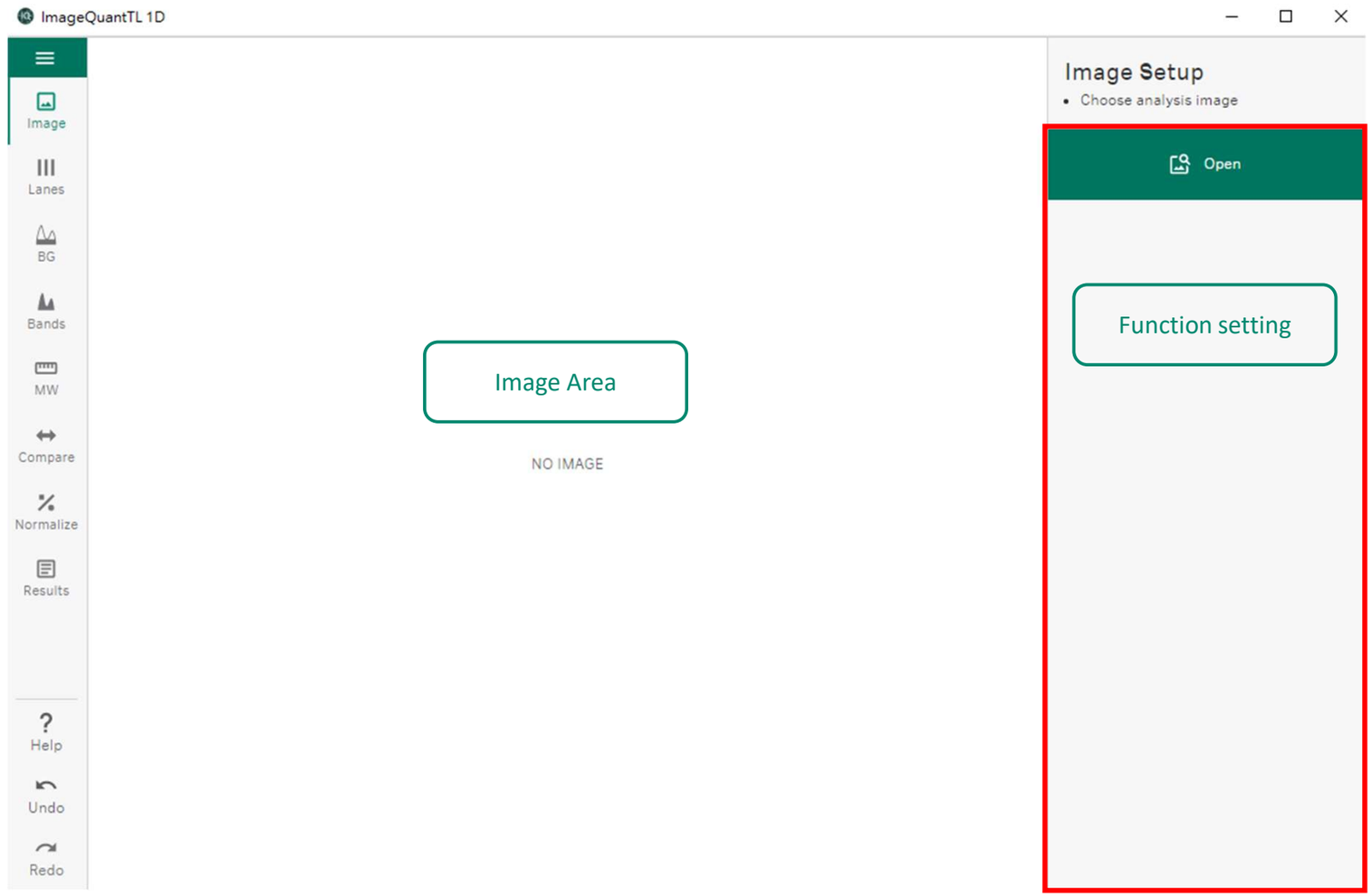
Gel and Blot Analysis

Function Steps

Image	Image setup	Open Image File (TIF file)
Lanes	Define lanes	Detect lanes on the image
BG	Define Background	Subtract background intensity
Bands	Define bands	Detect bands on the image
MW	Define molecular sizes	Calibrate by the marker
Compare	Compare lane profile	Output compare profile
Normalize	Normalization	Normalize band volumes
Results	Results	Output the analysis results



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Gel and Blot Analysis

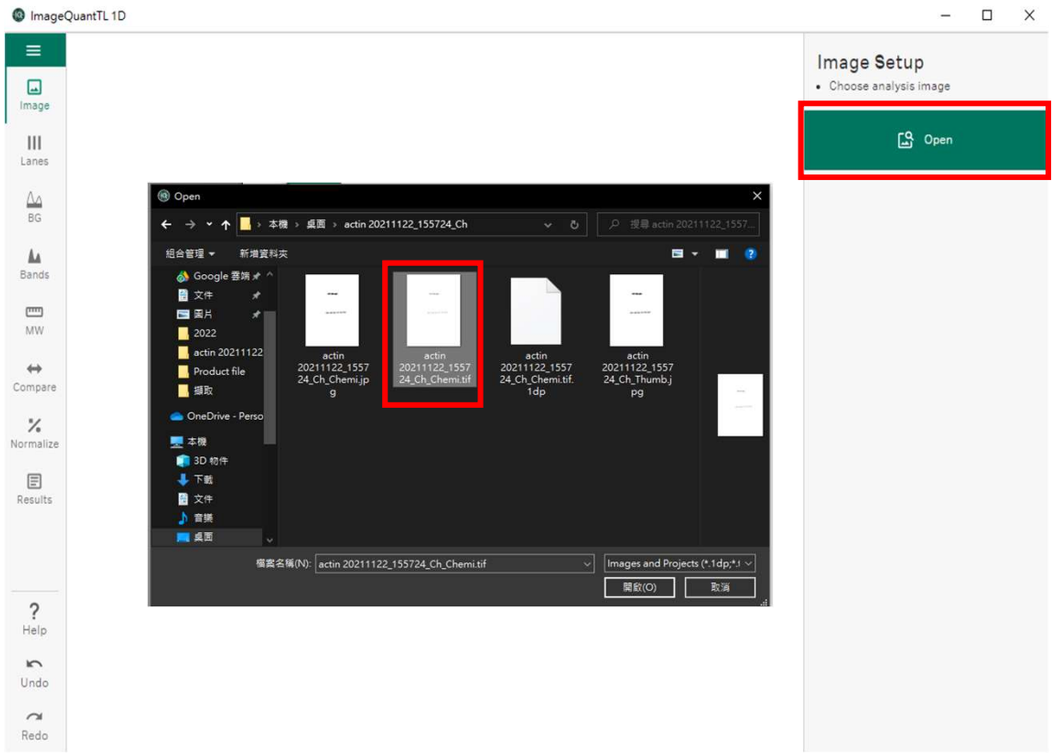
Function Step 1

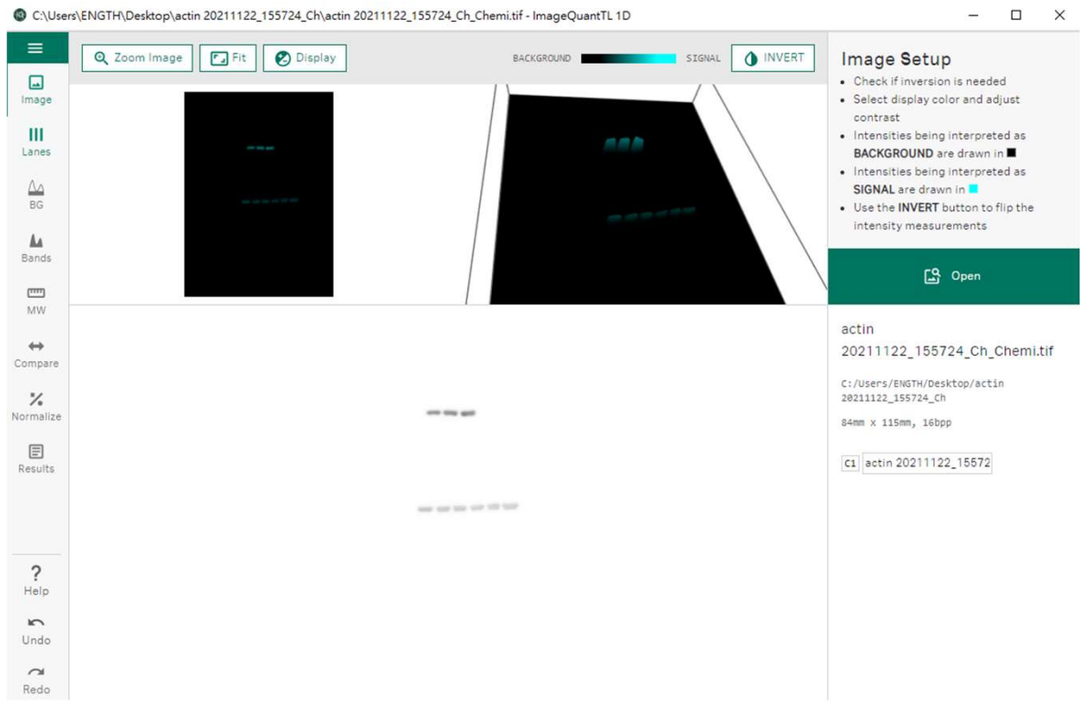
Image | Image setup

Click the Open to open the image file (TIF file)

Display — Change the image contrast for easy to see

Zoom Image — Zoom into a selected area





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Gel and Blot Analysis

Function step 2

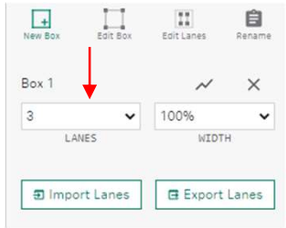
Lanes

Define lanes

Detect lanes on the image

New Box

1. Draw the area of the interest in the image and set the number of the lane

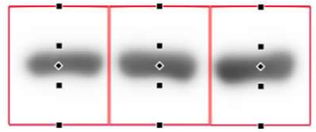


Edit Box

2. Edit the lane box by the note spot

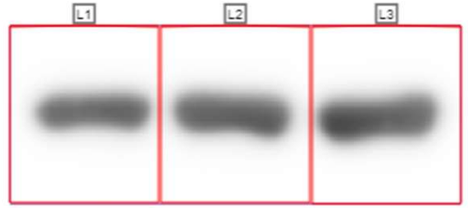
Edit Lanes

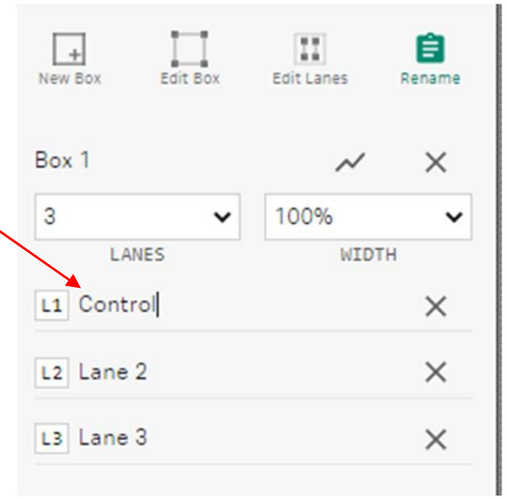
3. Edit an individual lane by dragging the black point



Rename

4. You can rename the lane name

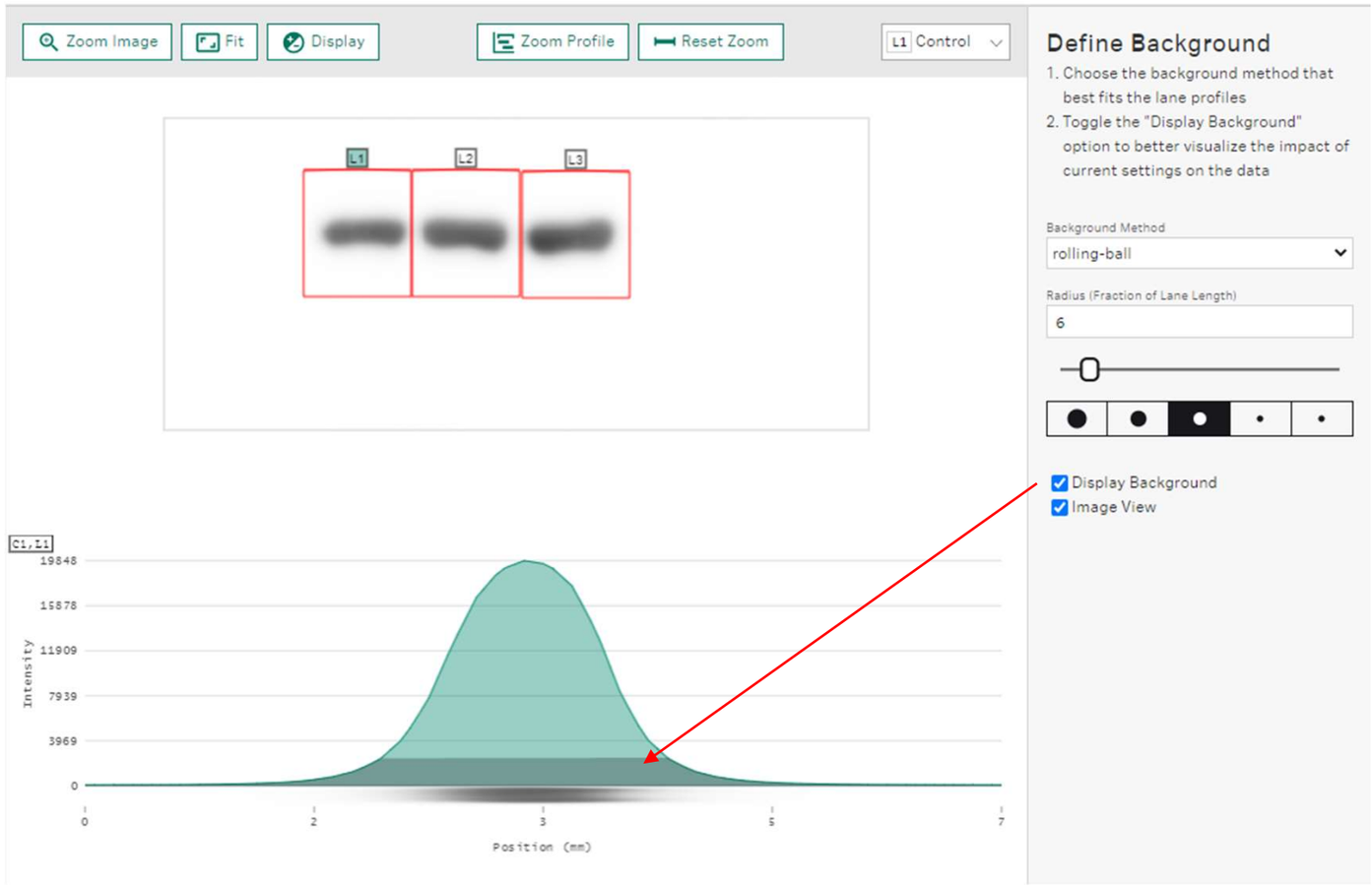


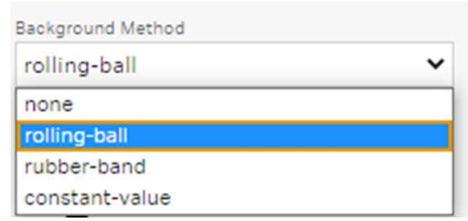


Function step 3

BG | Define Background

Subtract background intensity, select the optimization method and Radius





3 ways to subtract the image background, recommend to choose the rolling –ball method

To show the background area on the image

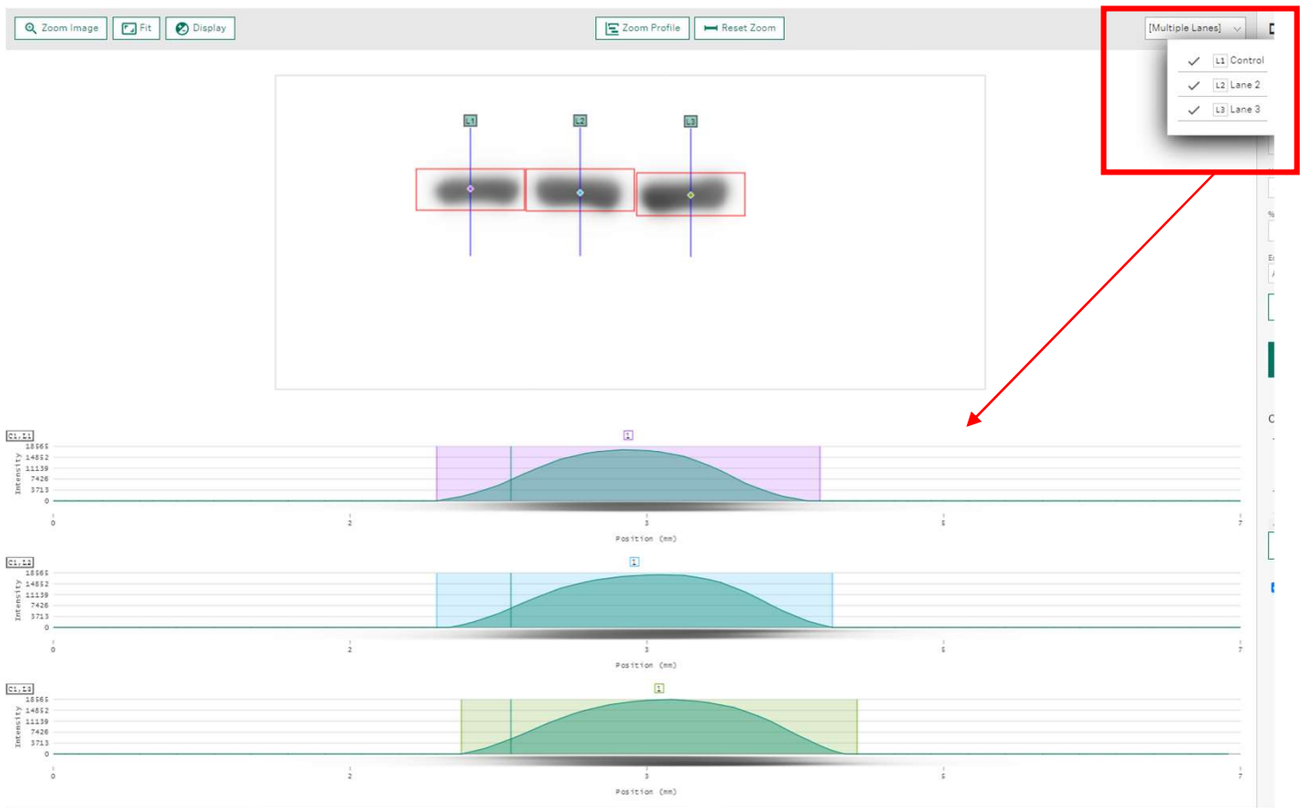
Gel and Blot Analysis

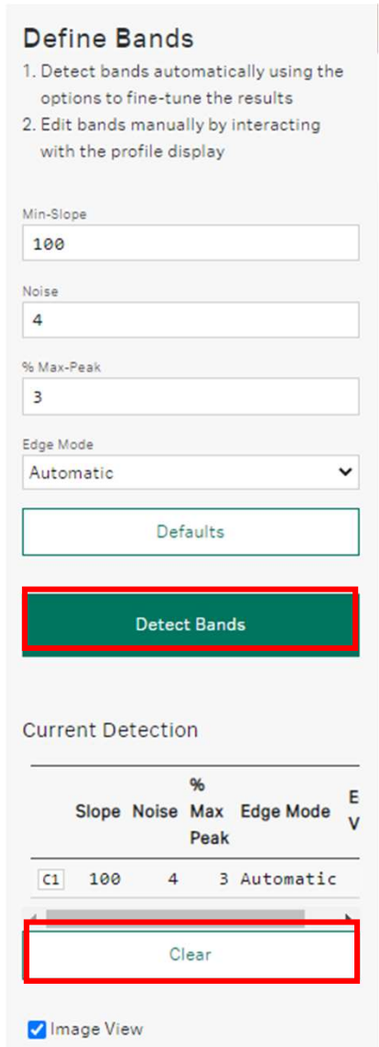
Function step 4

Bands → Define bands

Detect bands on the image

To select the multi-band to show





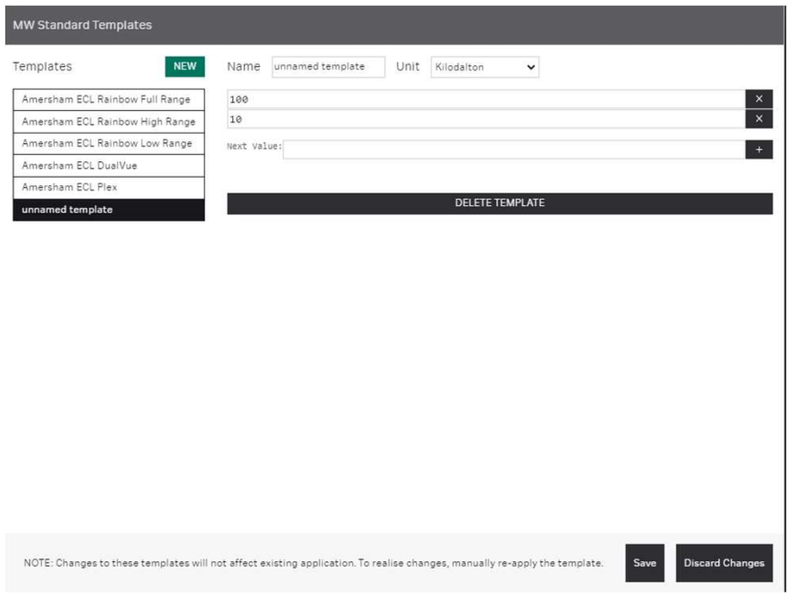
Click to detect the band
And you also can choose the best condition then detect the band

Clear the data then detection again

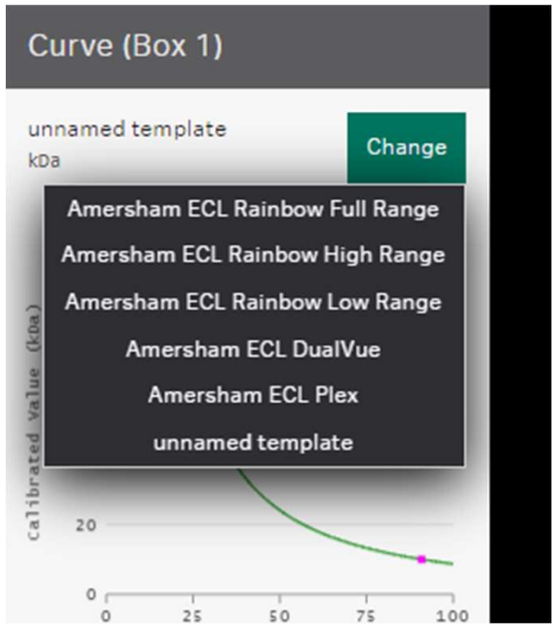
Function step 5 Option function

MW | Define molecular sizes | Calibrate by the marker

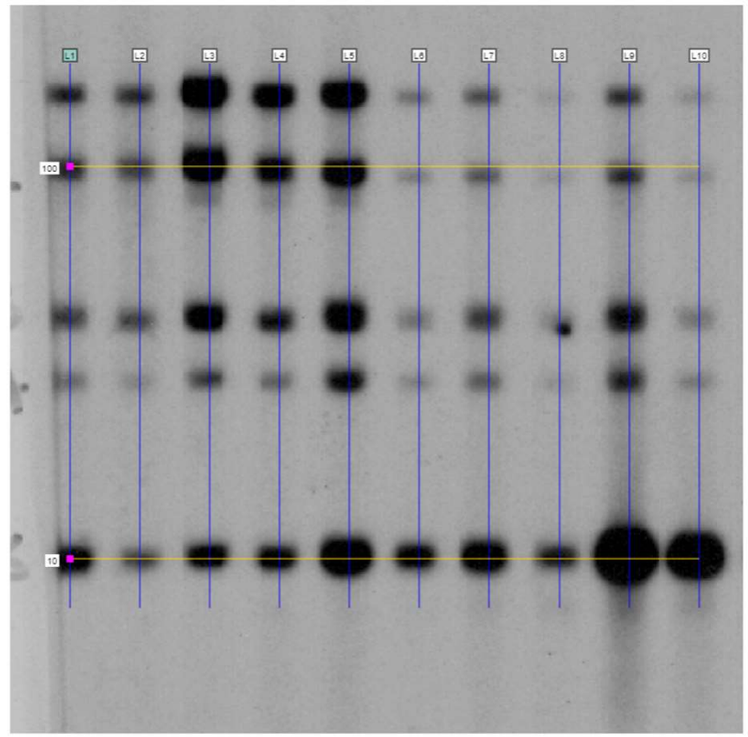
1.Create your own standard



2. Choose your standard template

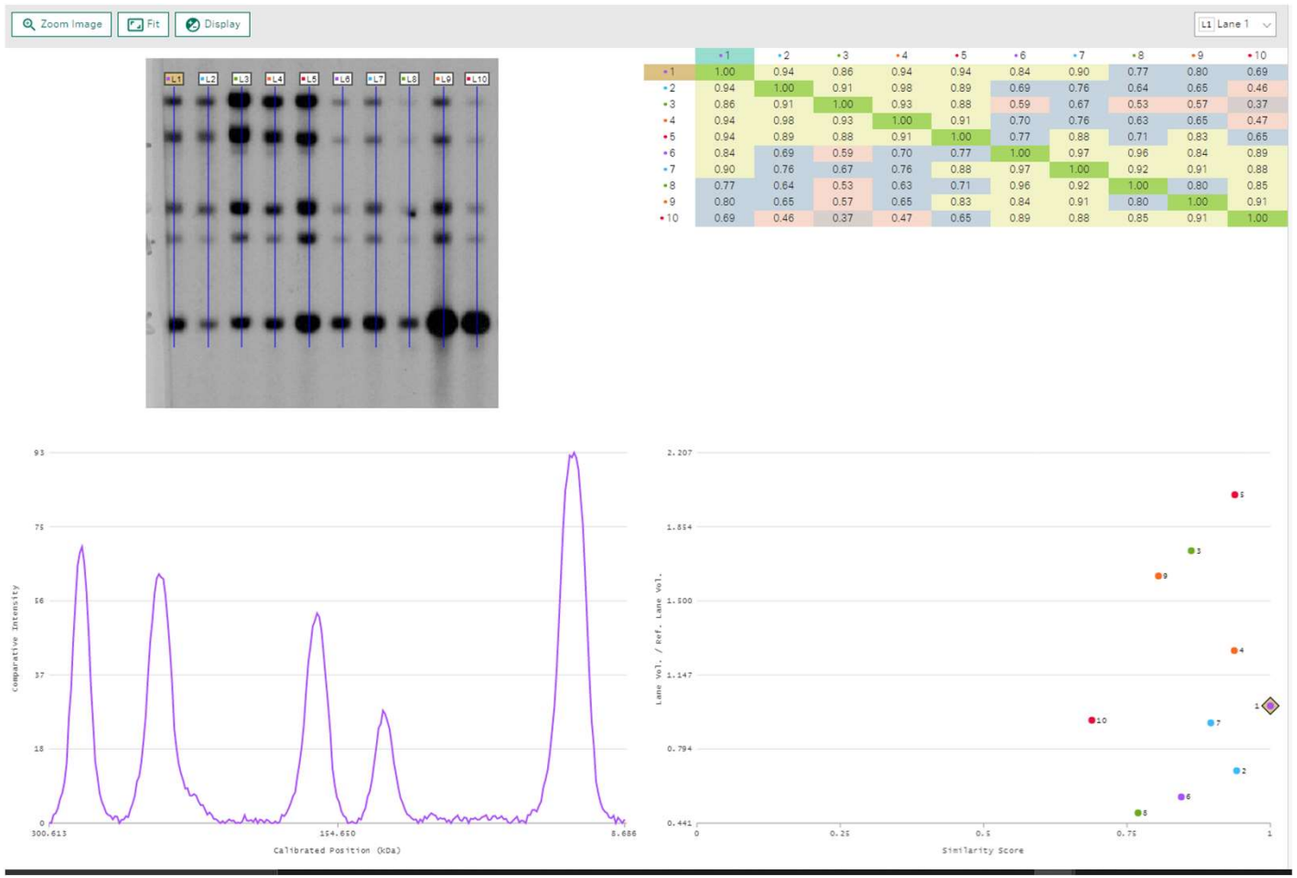


3. Assign the marker lane, then you can get the molecular weight data with each band



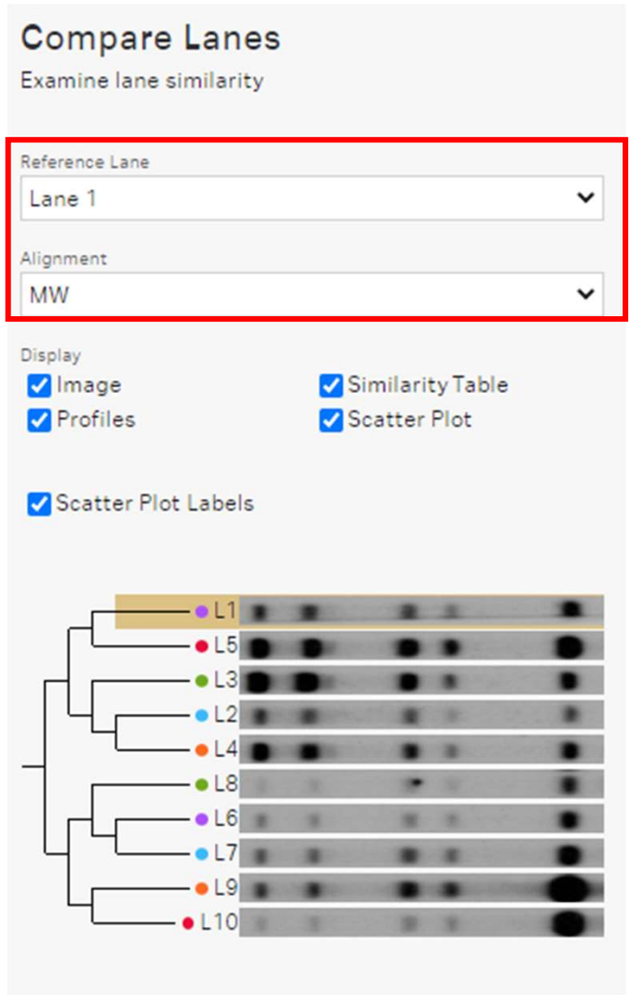
Function step 6 Option function

Compare → Compare lane profile → Output compare profile



	1	2	3	4	5	6	7	8	9	10
1	1.00	0.94	0.86	0.94	0.94	0.84	0.90	0.77	0.80	0.69
2	0.94	1.00	0.91	0.98	0.89	0.69	0.76	0.64	0.65	0.46
3	0.86	0.91	1.00	0.93	0.88	0.59	0.67	0.53	0.57	0.37
4	0.94	0.98	0.93	1.00	0.91	0.70	0.76	0.63	0.65	0.47
5	0.94	0.89	0.88	0.91	1.00	0.77	0.88	0.71	0.83	0.65
6	0.84	0.69	0.59	0.70	0.77	1.00	0.97	0.96	0.84	0.89
7	0.90	0.76	0.67	0.76	0.88	0.97	1.00	0.92	0.91	0.88
8	0.77	0.64	0.53	0.63	0.71	0.96	0.92	1.00	0.80	0.85
9	0.80	0.65	0.57	0.65	0.83	0.84	0.91	0.80	1.00	0.91
10	0.69	0.46	0.37	0.47	0.65	0.89	0.88	0.85	0.91	1.00

3. Choose the reference lane and alignment then get the compare profile map



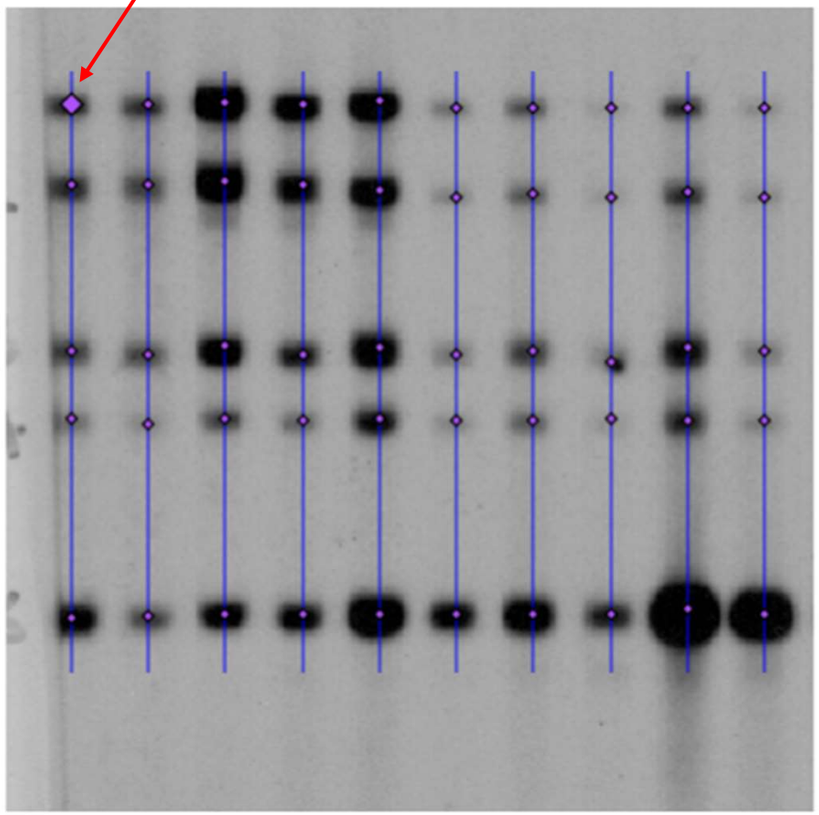
Function step 7 Option function

Normalize

Normalization

Normalize band volumes

Choose the reference band and value



Define Normalization

Normalize band areas across your gel

Method

In-Channel Band

Ref. Band :
Lane 1, band 1

Ref. Value:

1

Click on the desired reference band in the image view, or

Use Largest

The chosen reference band will be assigned a normalized value of 1. Remaining bands will be assigned a normalized value of
`1 * (volume / ref. volume)`.

Show Table

After setting, you can get the normalize value result

Lane 1	Lane 2	Lane 3	Lane 4	Lane 5
ch. 1	ch. 1	ch. 1	ch. 1	ch. 1
1.000	0.907	2.491	1.857	2.233
1.247	0.955	2.820	1.776	2.330
0.934	0.705	1.624	1.081	2.023
0.462	0.138	0.511	0.312	1.212
1.707	0.672	1.371	1.434	2.953

Gel and Blot Analysis

Function step 8

Results | Results | Output the analysis results

Select the data you need then you can output a CSV file, you can open it by the excel

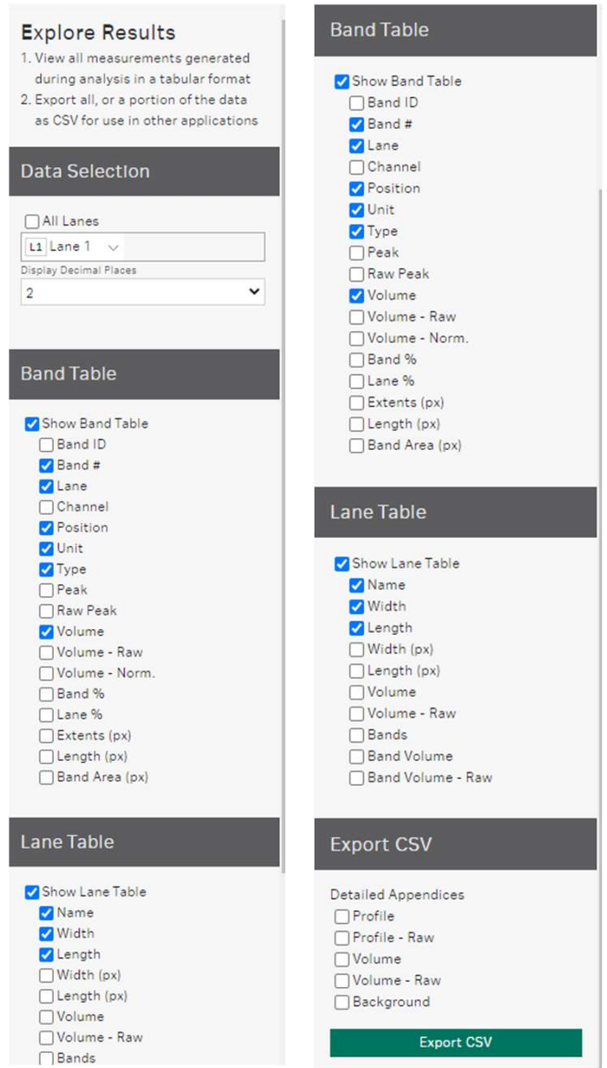
The data you have selected then you can preview it.

Band Information

Band #	Lane	Position	Unit	Type	Volume
1	Lane 1	588.28	kDa	detected	24006.62
2	Lane 1	100.00	kDa	detected	29928.32
3	Lane 1	26.90	kDa	detected	22410.66
4	Lane 1	19.47	kDa	detected	11079.92
5	Lane 1	10.00	kDa	detected	40978.77

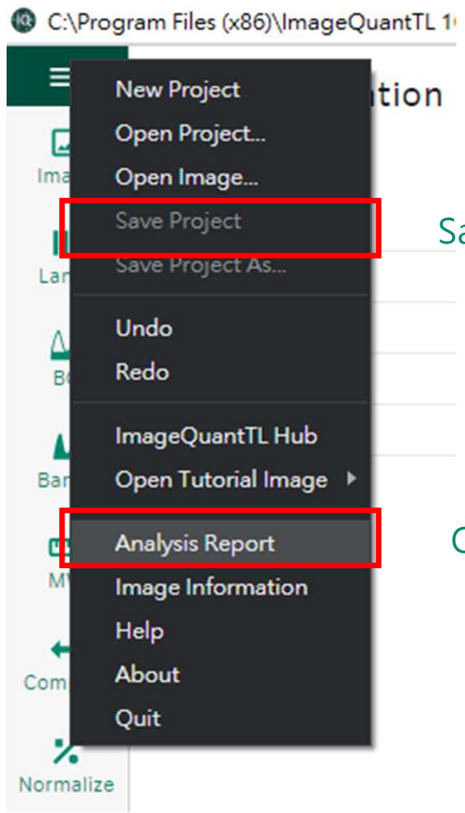
Lane Information

Name	Width	Length
Lane 1	11.18mm	89.07mm

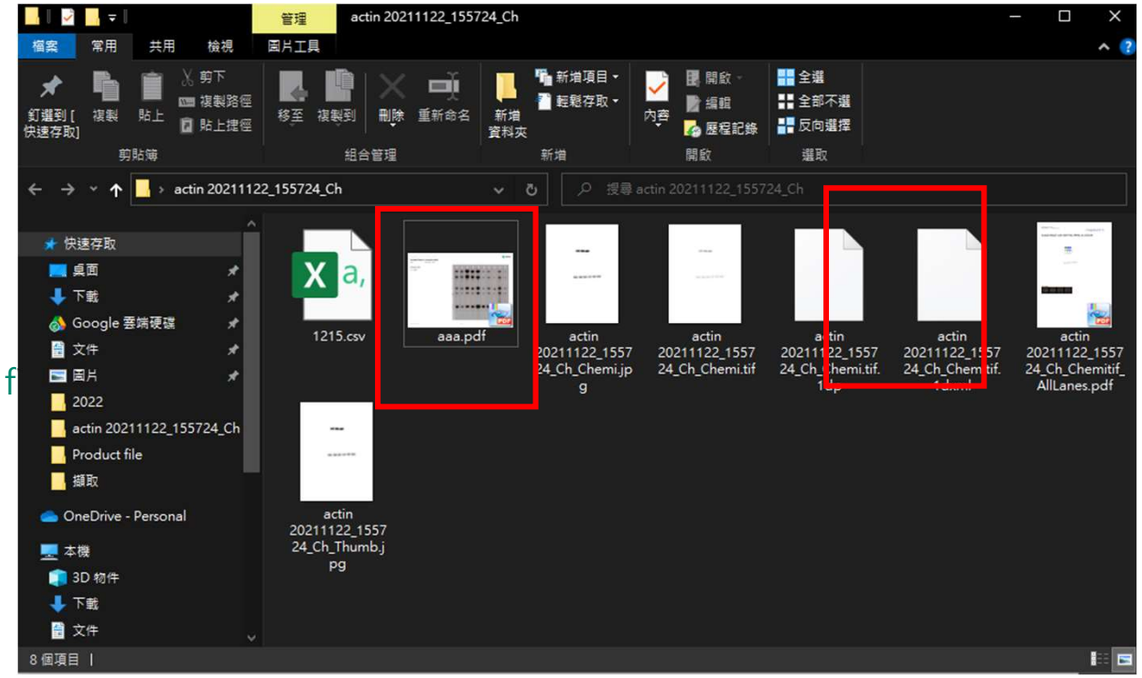


岑 祥
TSENG HSIANG

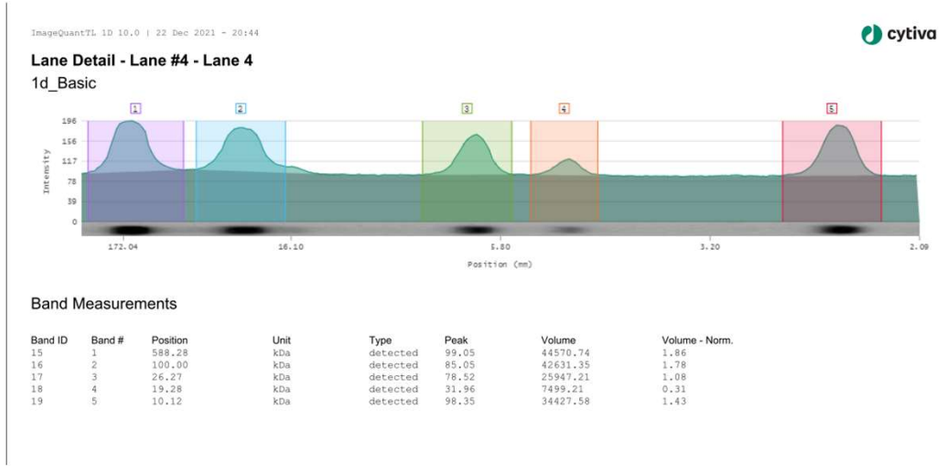
Addition faction



Save the analysis project as a .1dp f



Output a pdf report



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