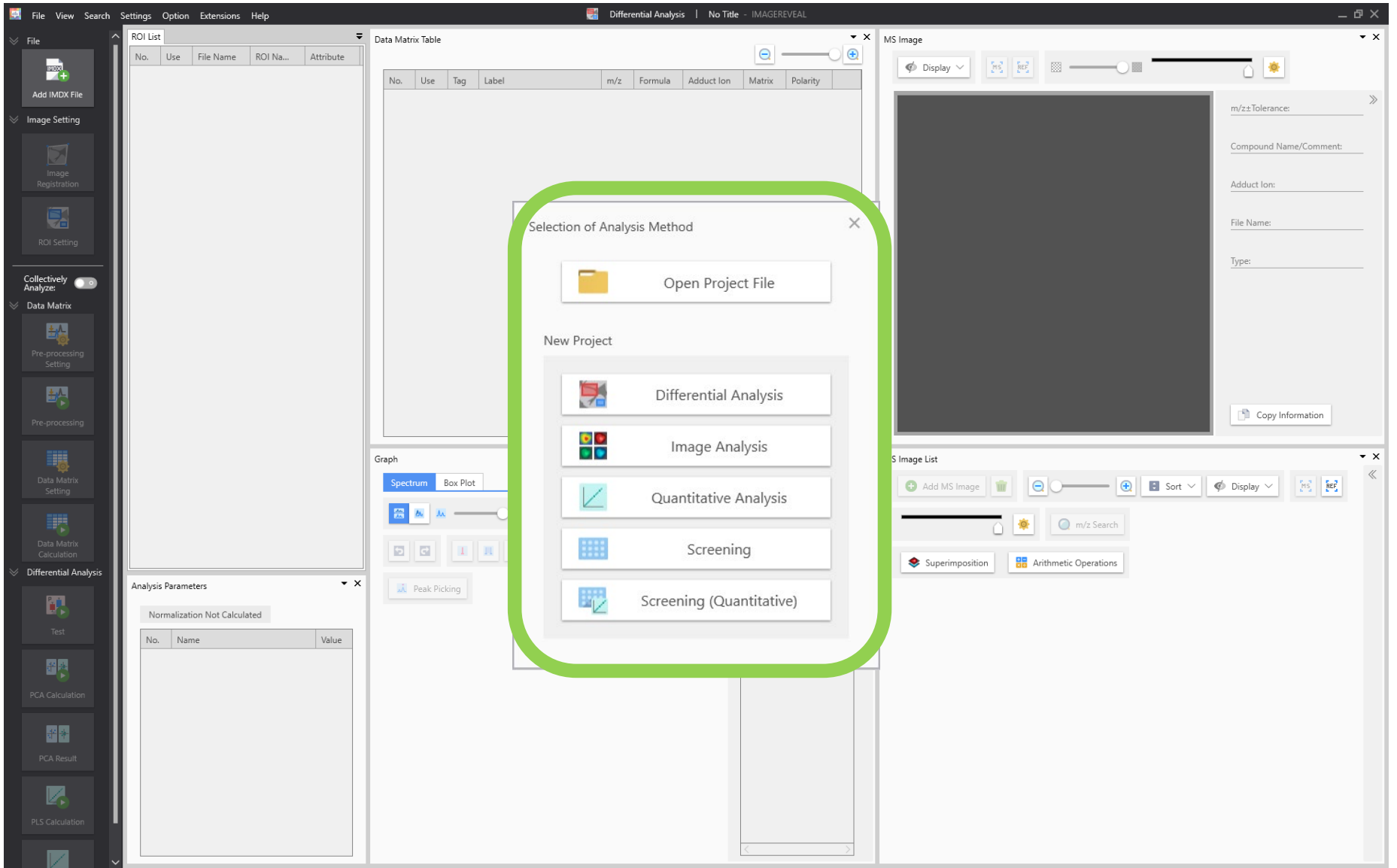
The Very Basics of IMAGEREVEAL MS

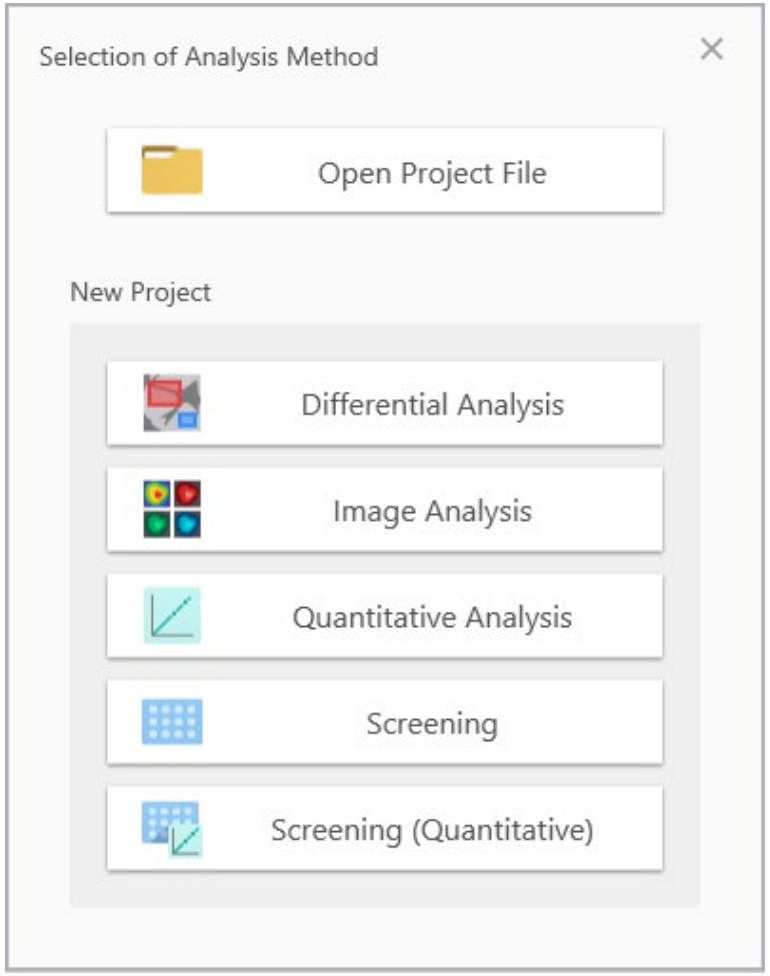
With differential analysis as an example

Startup icon

Startup window



Select a project



Open an existing project file

Look for differences

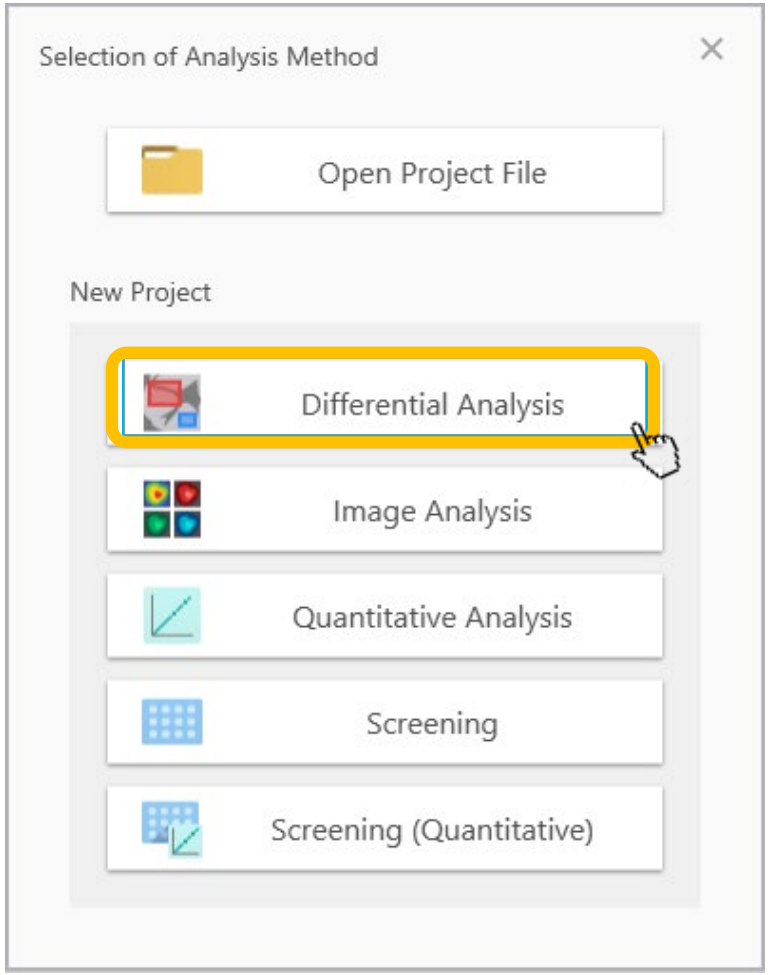
Look for localized features

Imaging by concentration

Process a large number of samples

Process a large number of samples quantitatively

Select a project (differential analysis)



Open an existing project file

Look for differences

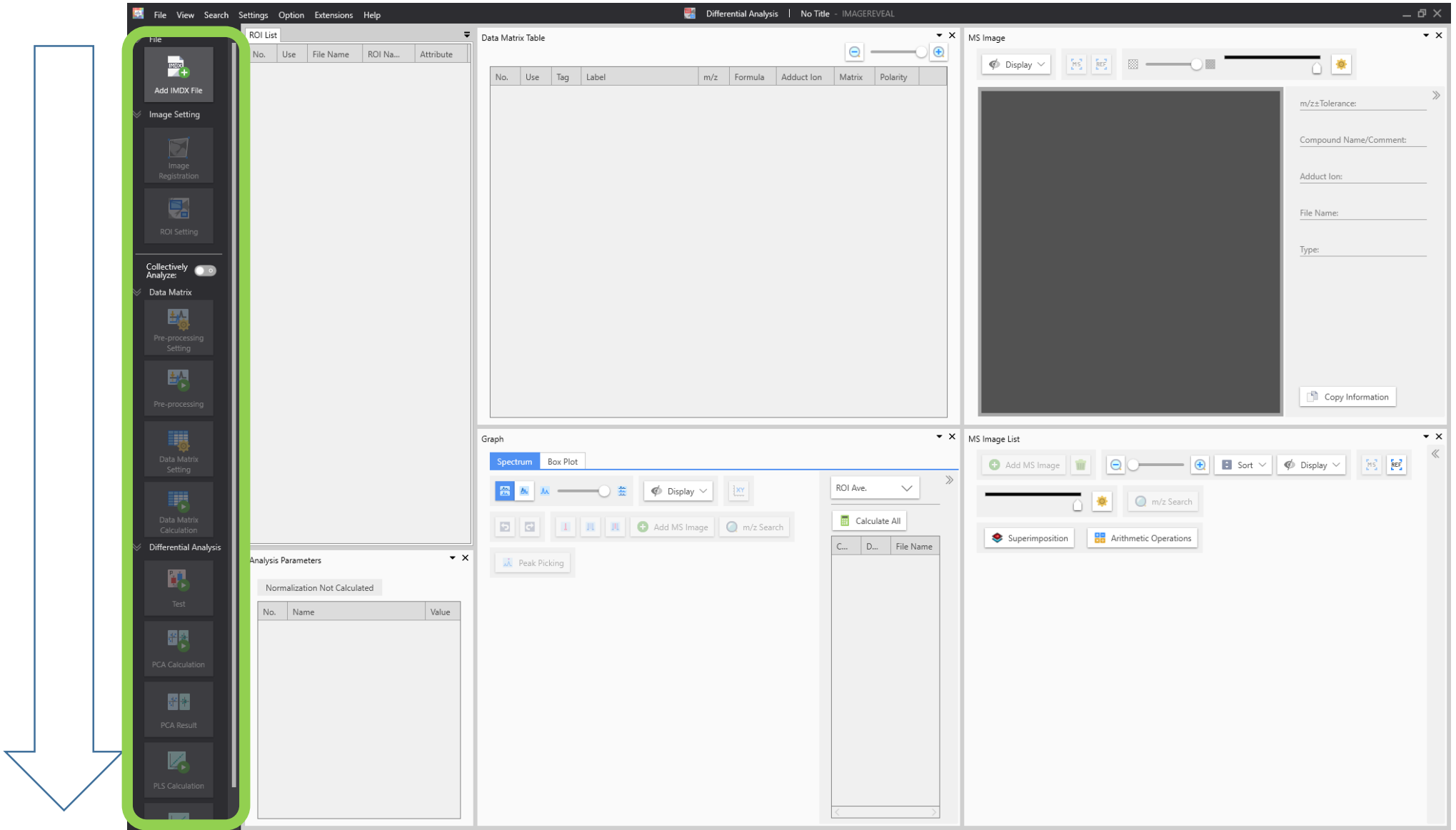
Look for localized features

Imaging by concentration

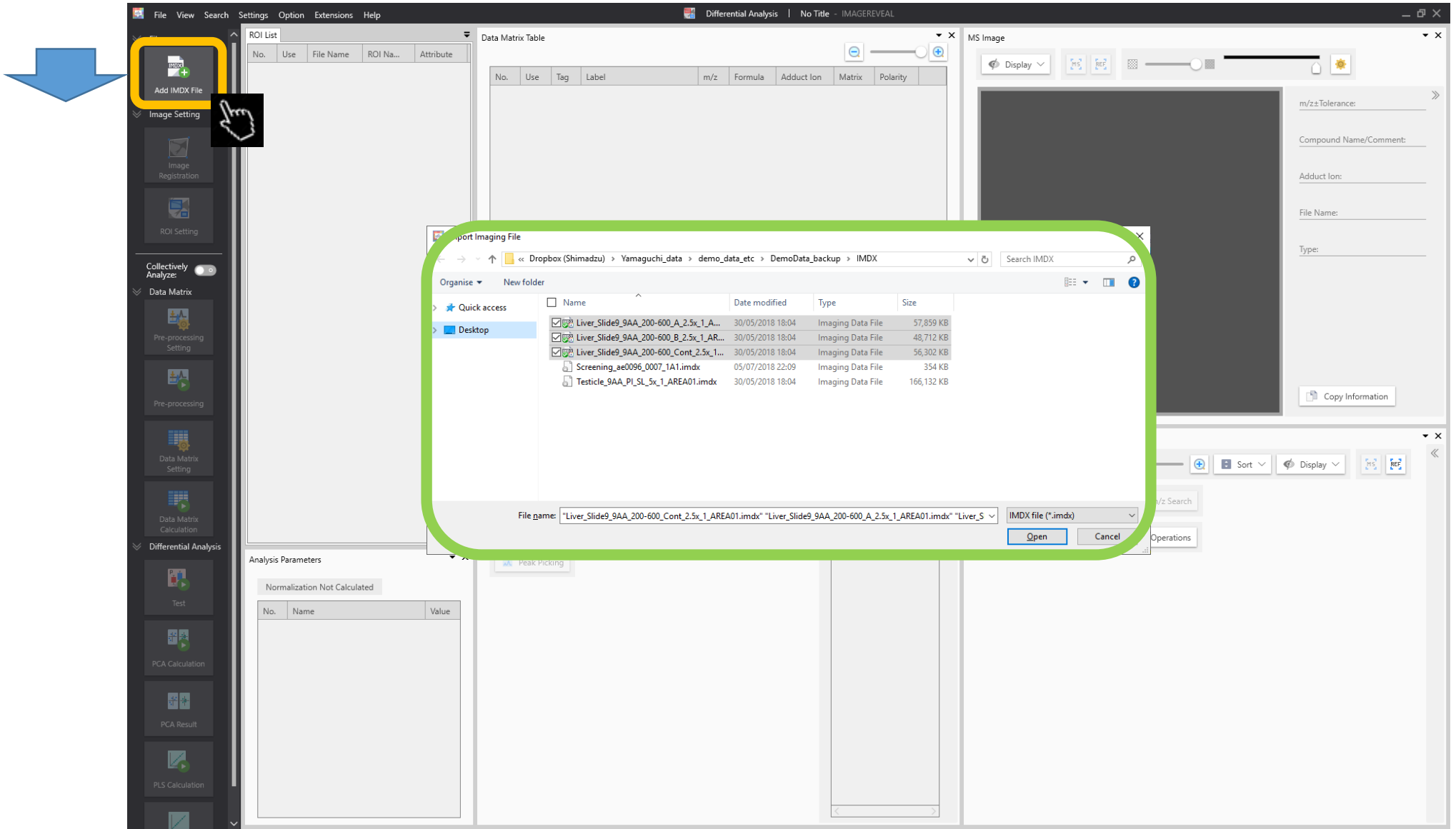
Process a large number of samples

Process a large number of samples quantitatively

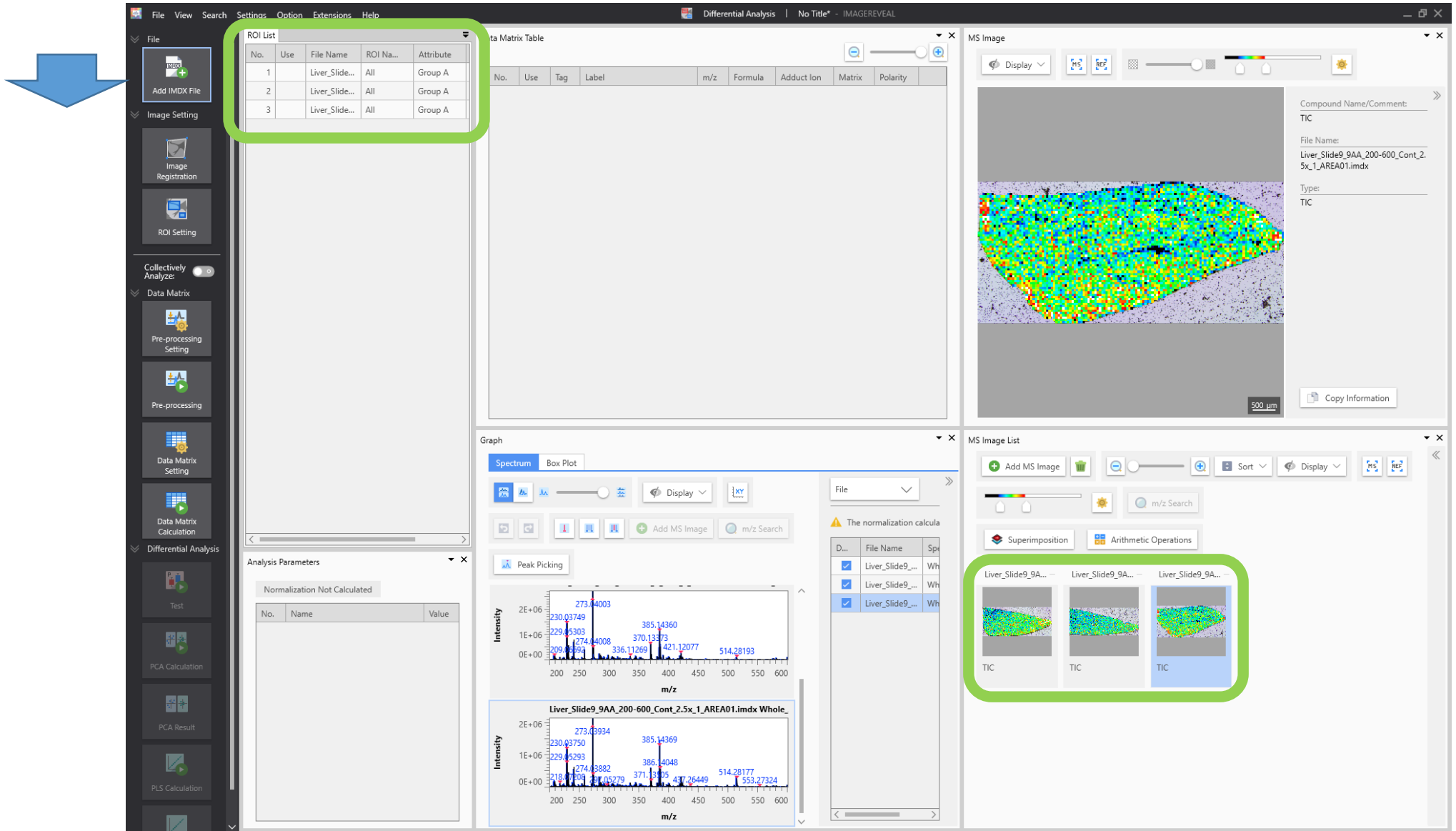
The analysis is basically carried out by going down the taskbar from top to bottom



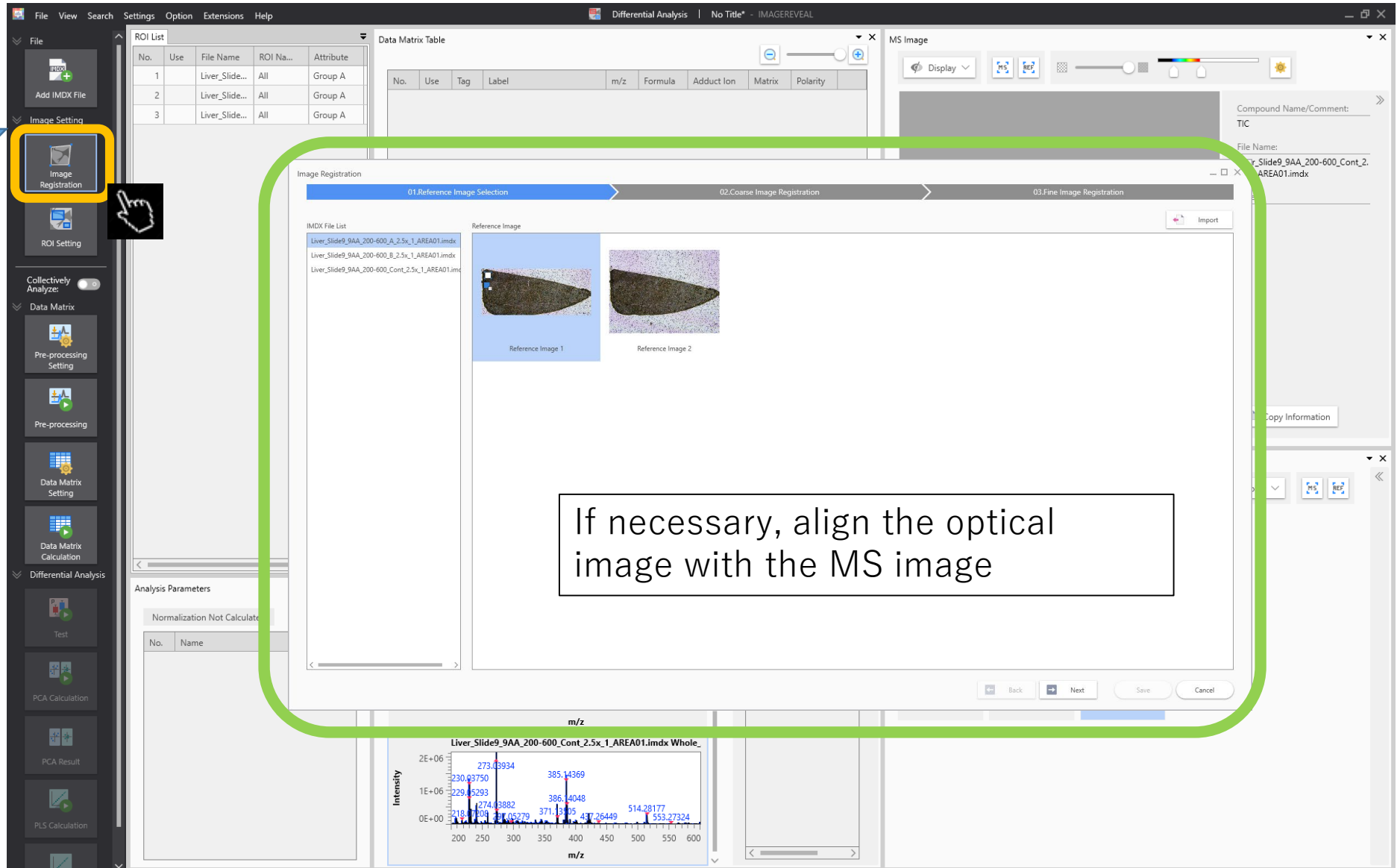
1. Add a data file (.imdx)



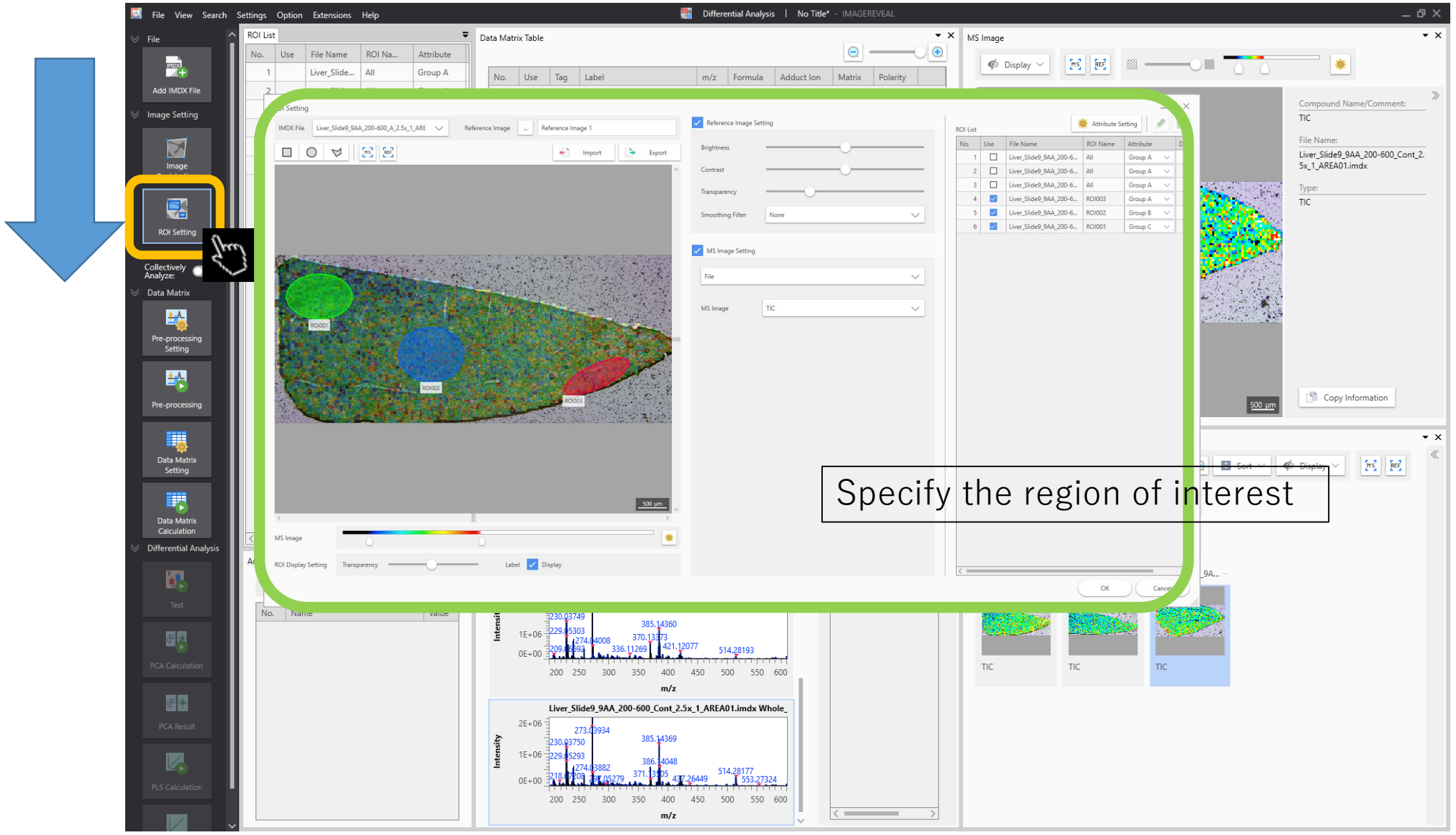
Example with three data files added:



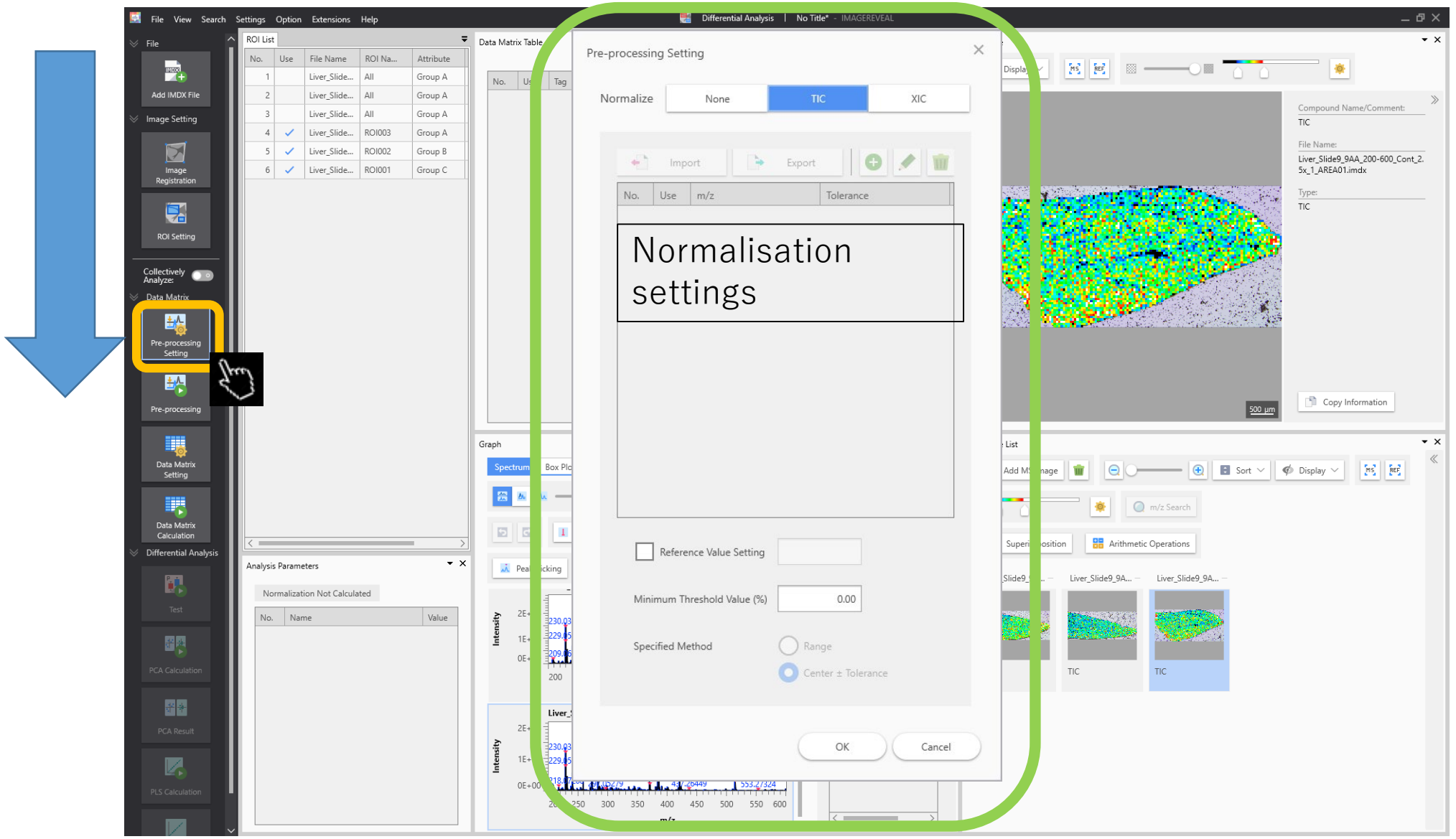
2. Image registration



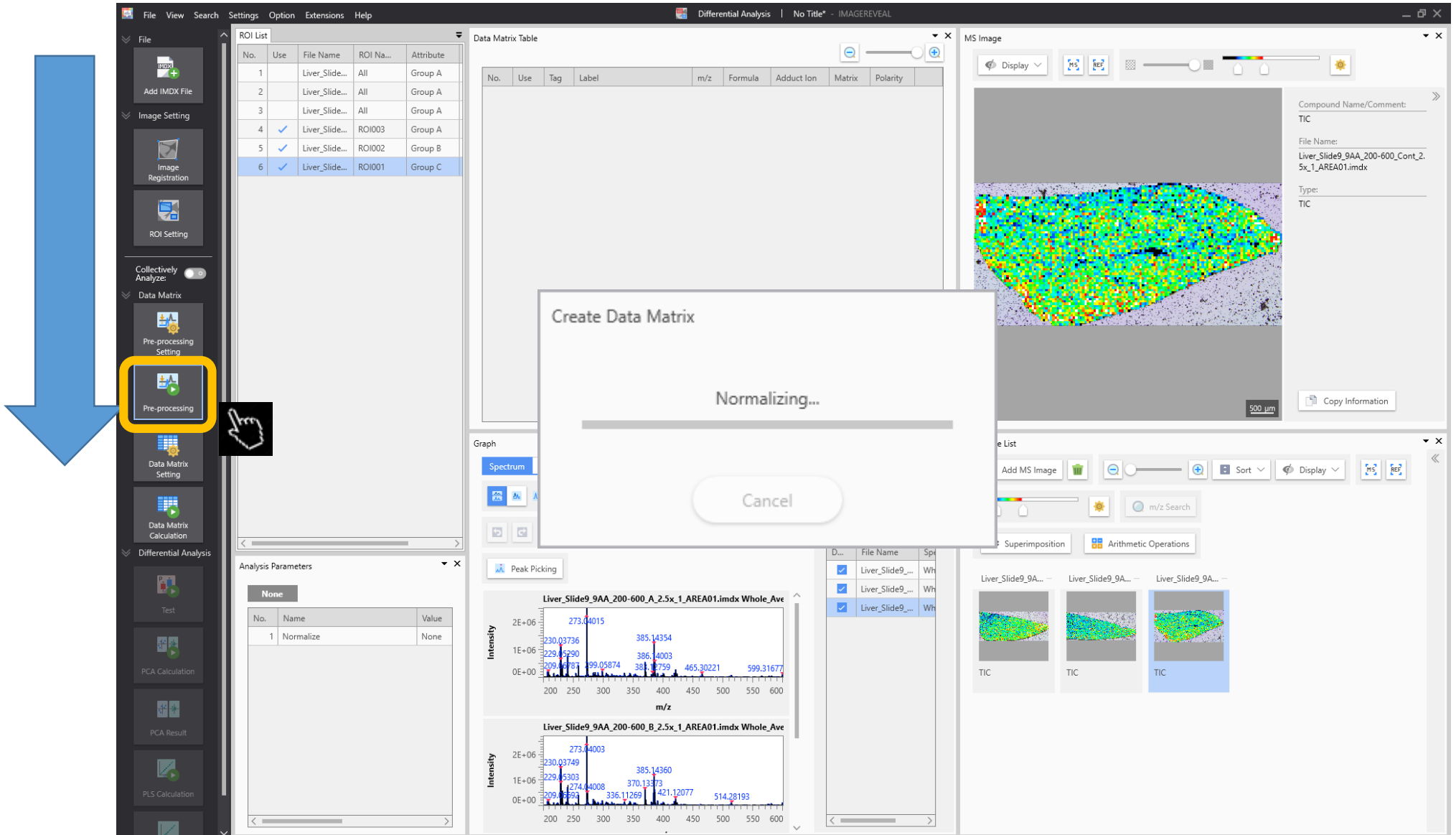
3. ROI settings



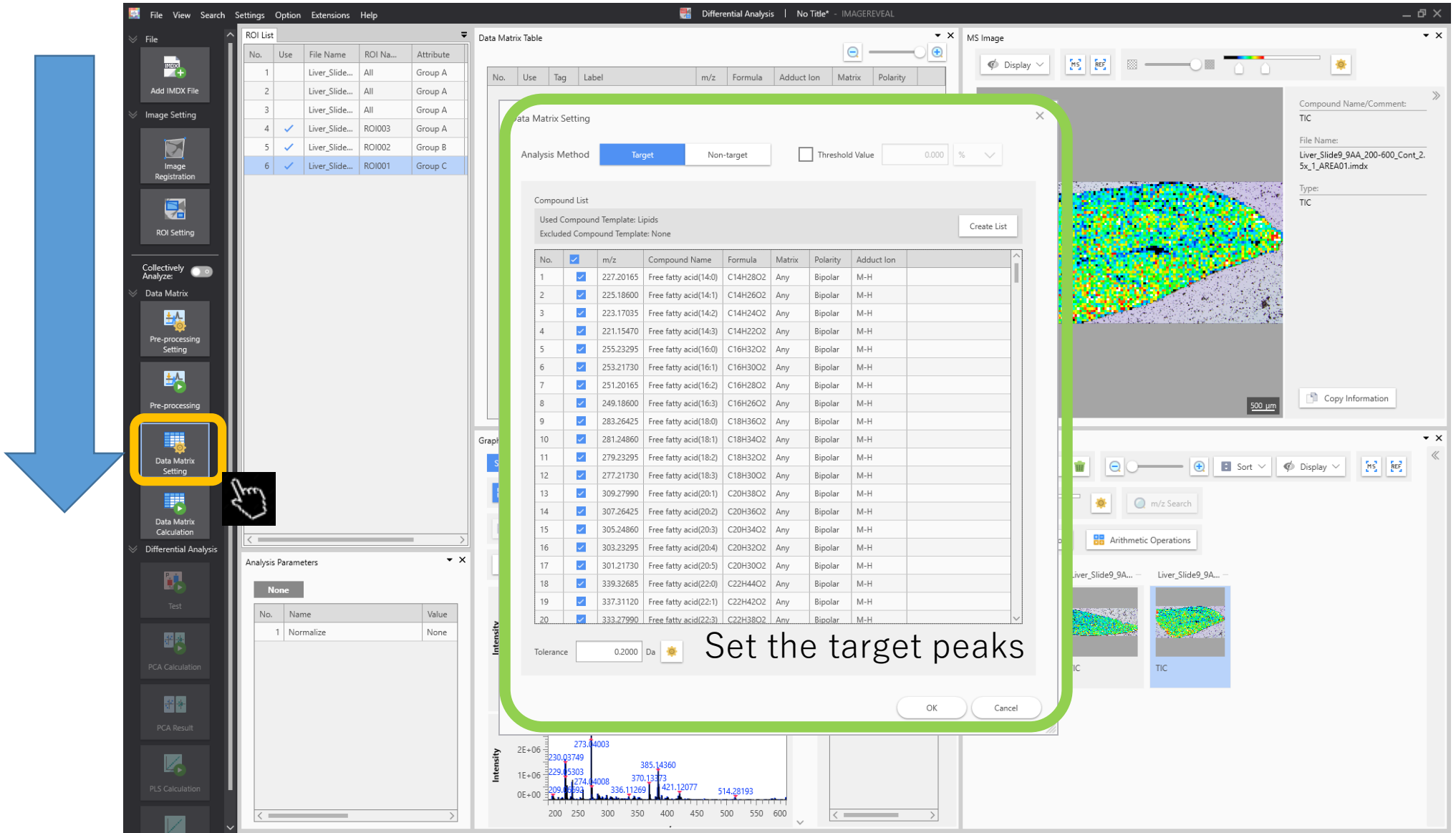
4. Pre-processing settings



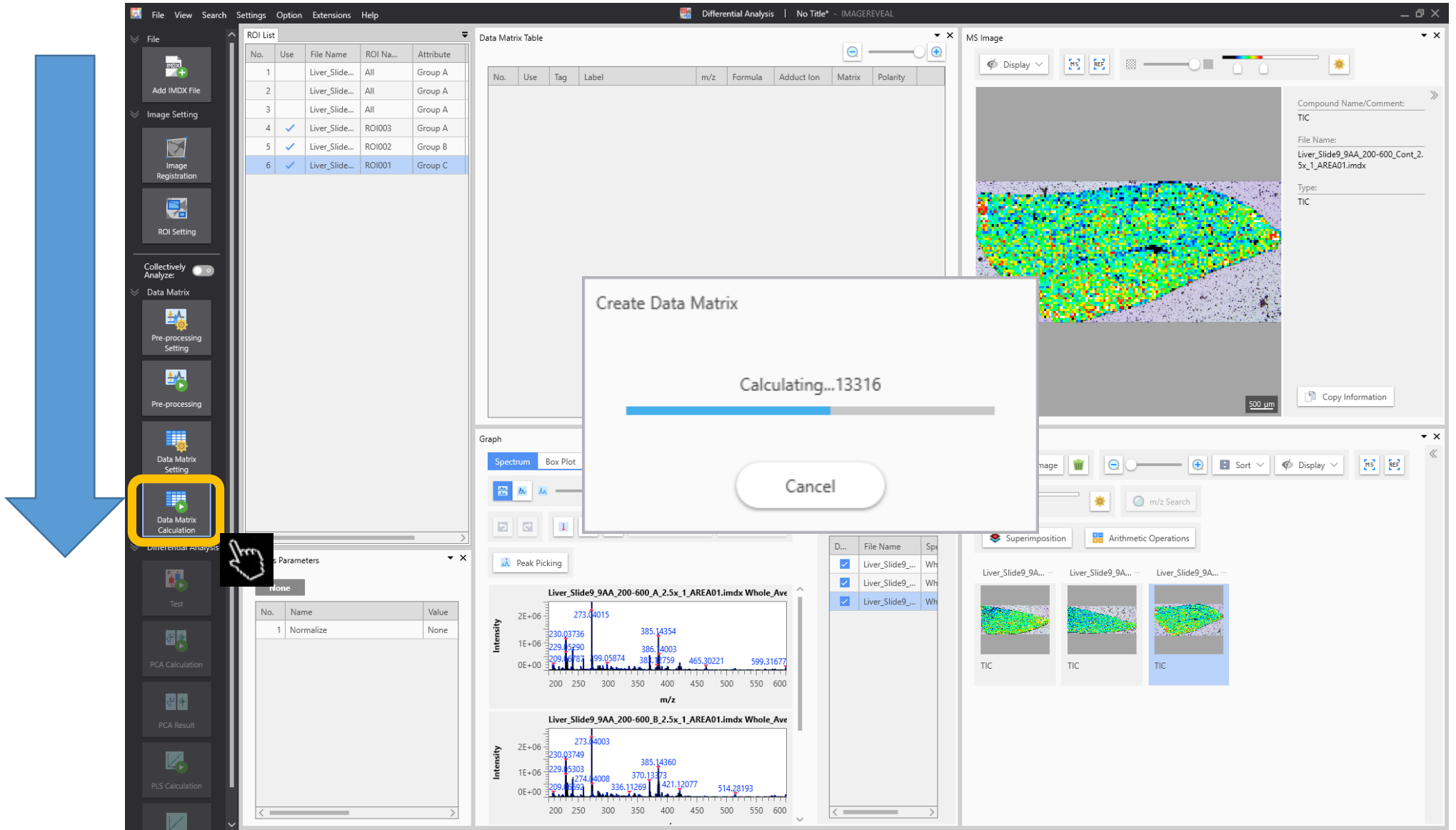
5. Pre-processing



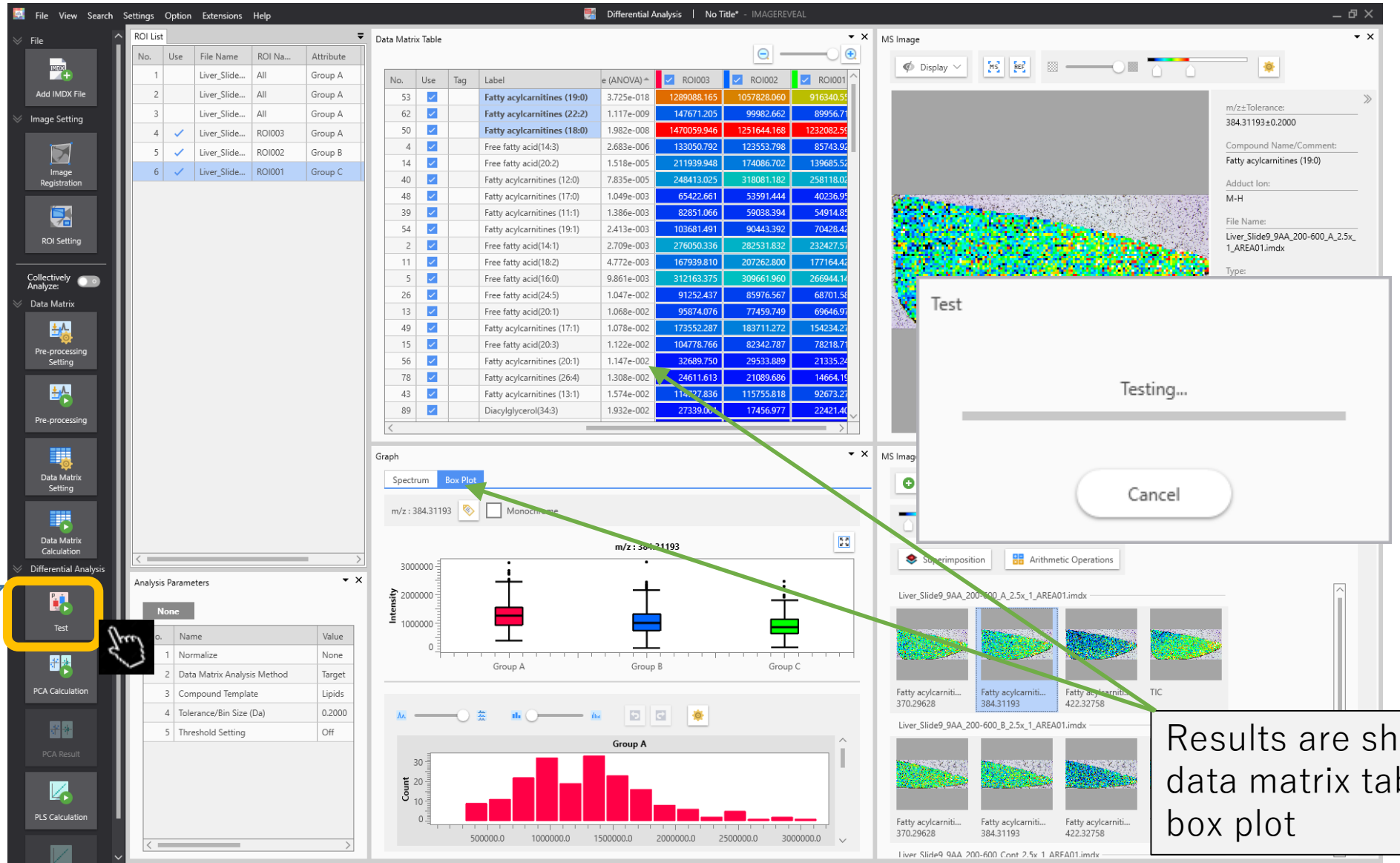
6. Data matrix settings



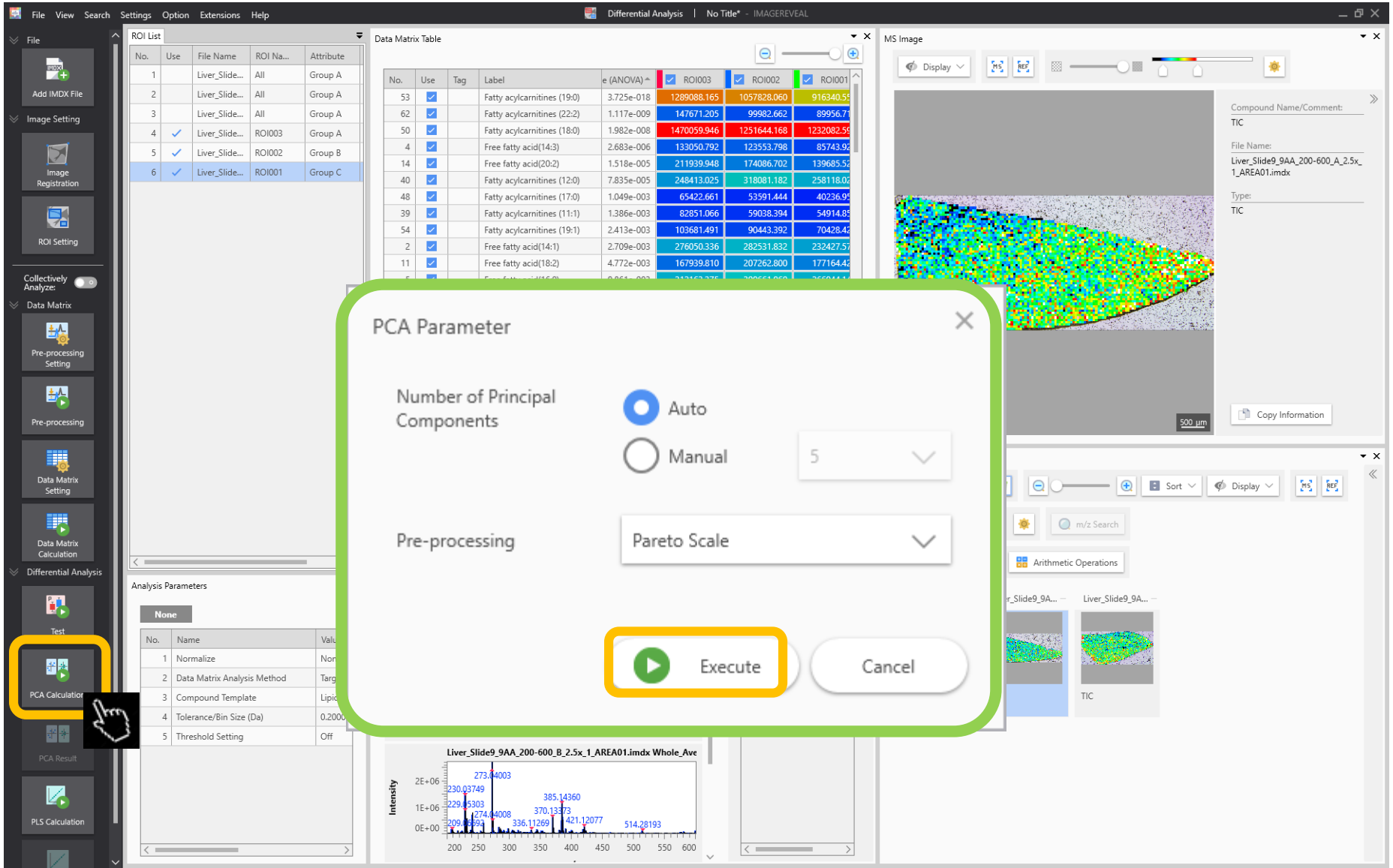
7. Data matrix calculation



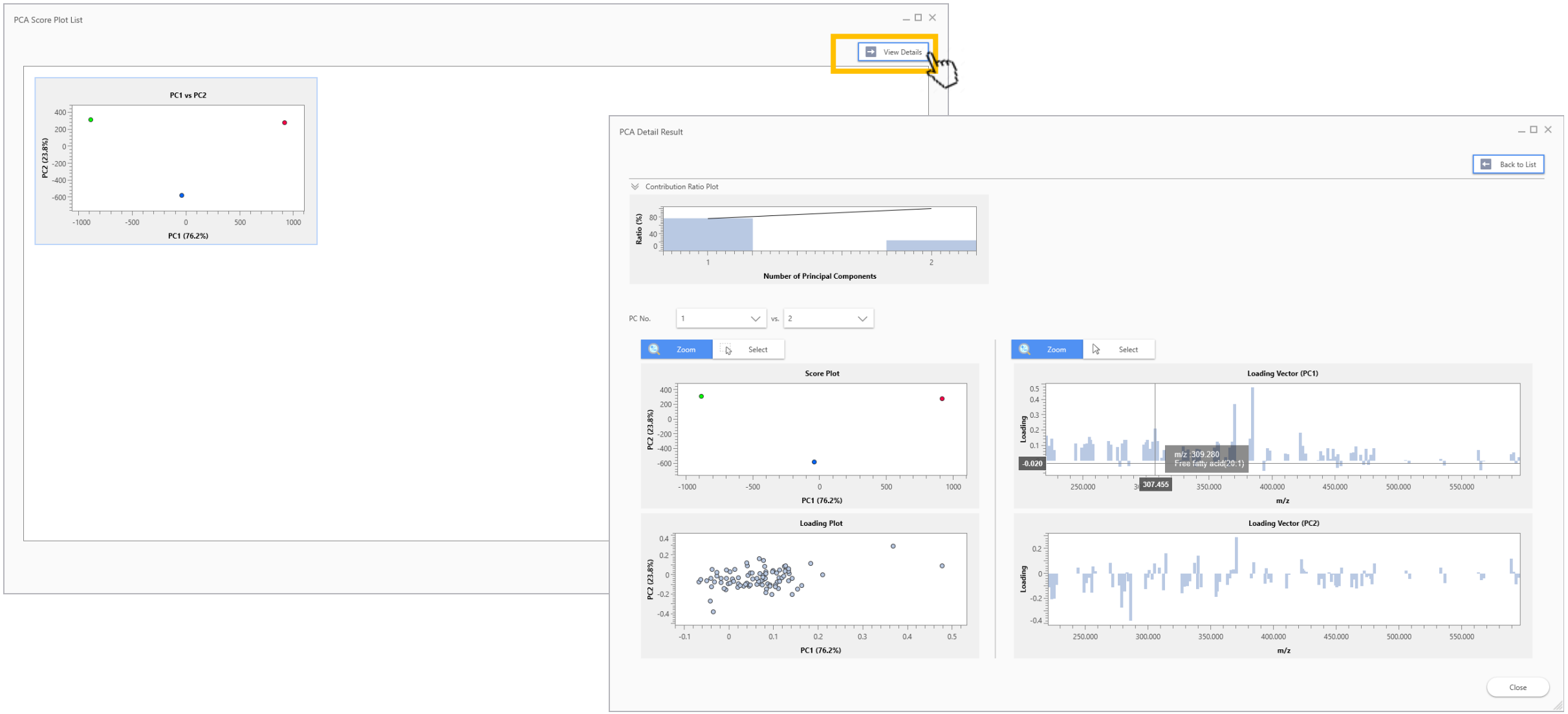
8. Testing


File View Search Settings Option Extensions Help
Differential Analysis | No Title* - IMAGEREVEAL
File
Add IMDX File
Image Setting
Image Registration
ROI Setting
Collectively Analyze:
Data Matrix
Pre-processing Setting
Pre-processing
Data Matrix Setting
Data Matrix Calculation
Differential Analysis
Test
PCA Calculation
PCA Result
PLS Calculation
ROI List
Data Matrix Table
MS Image
Display
m/z±Tolerance:
384.31193±0.2000
Compound Name/Comment:
Fatty acylcarnitines (19:0)
Adduct Ion:
M-H
File Name:
Liver_Slide9_9AA_200-600_A_2.5x_1_AREA01.imdx
Type:
Test
Testing...
Cancel
Graph
Spectrum
Box Plot
m/z : 384.31193
Monochrome
Intensity
Group A
Group B
Group C
Analysis Parameters
None
Name
Value
Normalize
None
Data Matrix Analysis Method
Target
Compound Template
Lipids
Tolerance/Bin Size (Da)
0.2000
Threshold Setting
Off
Superimposition
Arithmetic Operations
Liver_Slide9_9AA_200-600_A_2.5x_1_AREA01.imdx
Liver_Slide9_9AA_200-600_B_2.5x_1_AREA01.imdx
Fatty acylcarniti... 370.29628
Fatty acylcarniti... 384.31193
Fatty acylcarniti... 422.32758
TIC
Count
Results are shown in the data matrix table and on a box plot

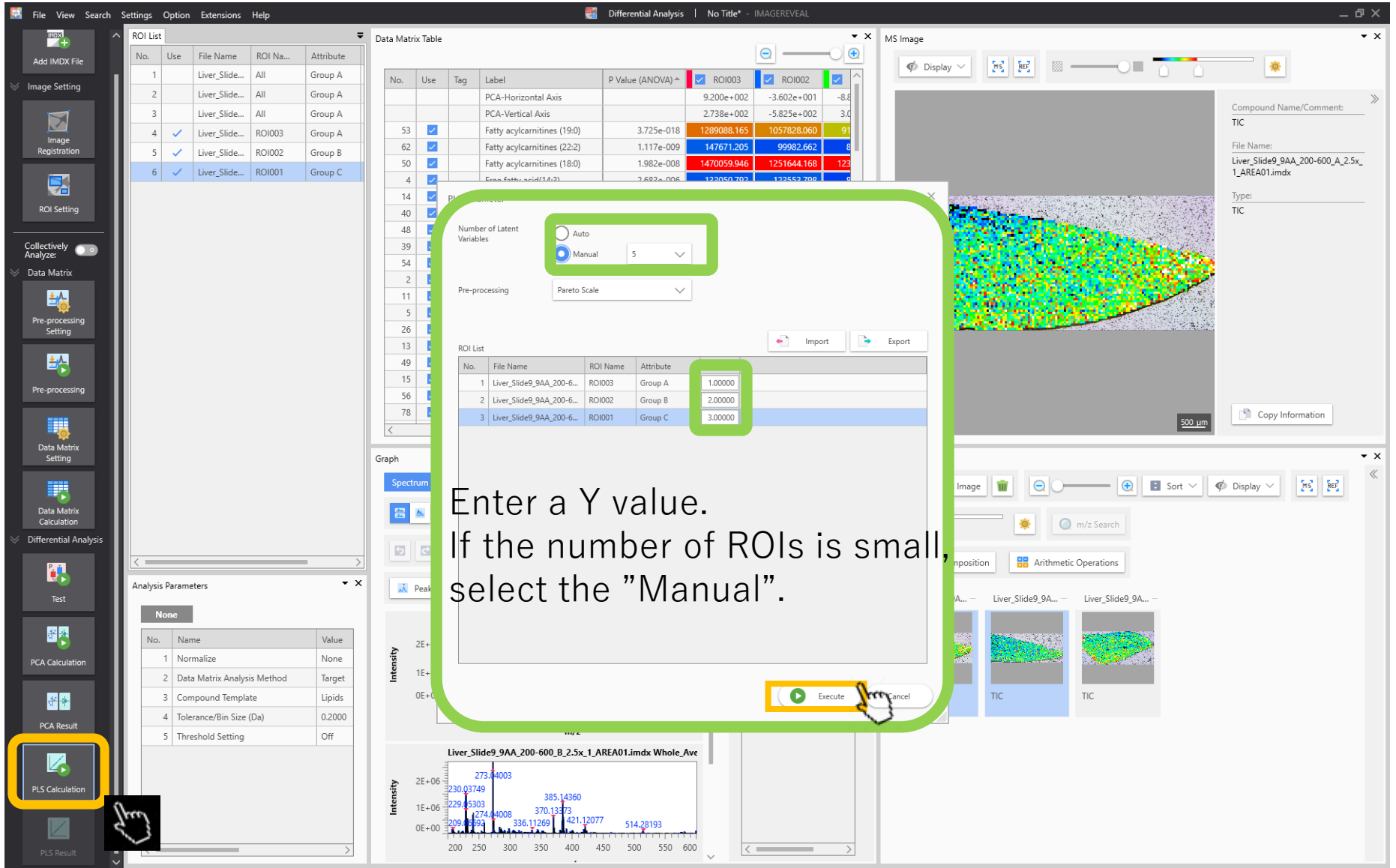
9. PCA calculation



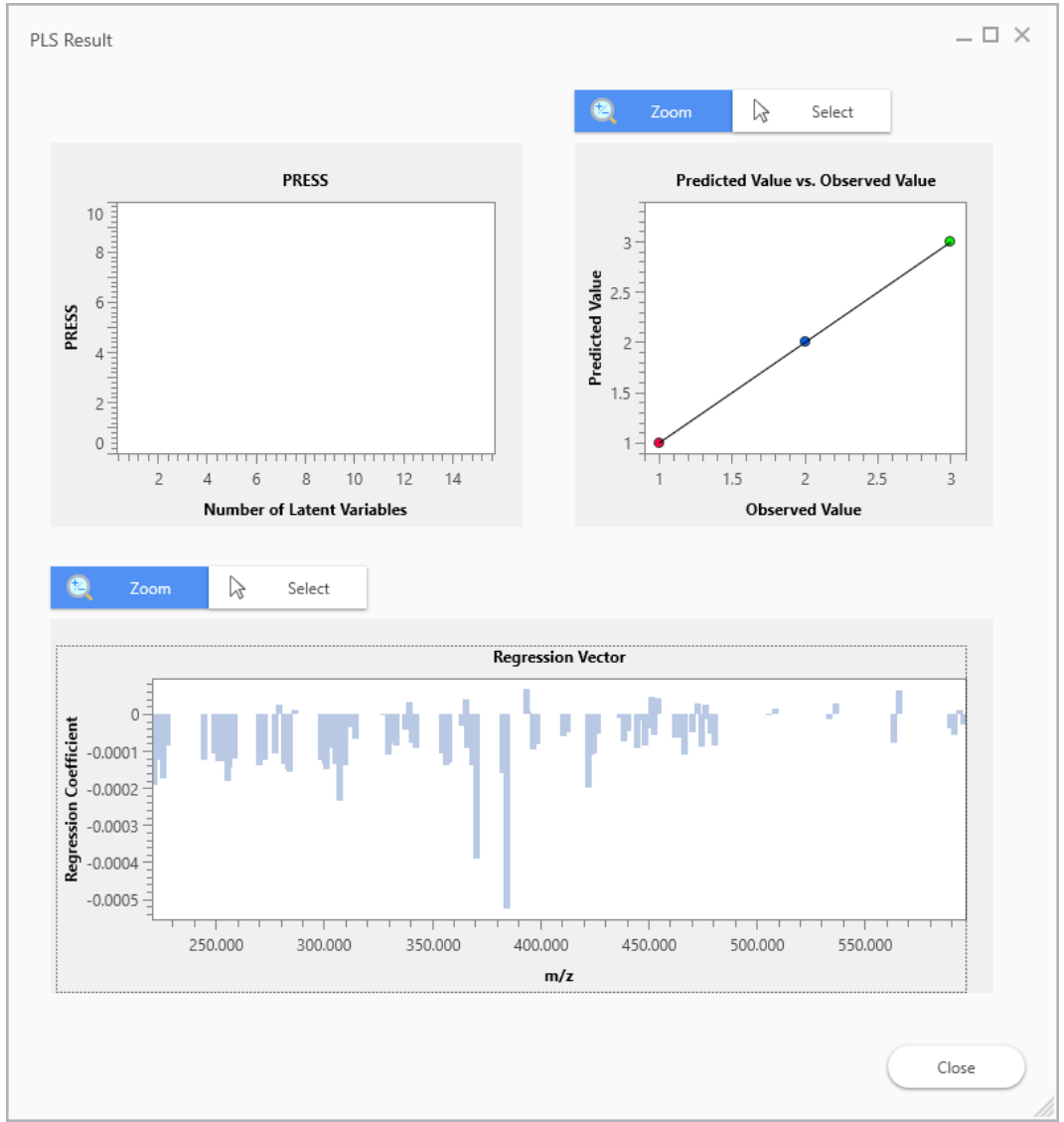
PCA results


PCA Score Plot List
View Details
PC1 vs PC2
PC2 (23.8%)
PC1 (76.2%)
PCA Detail Result
Back to List
Contribution Ratio Plot
Ratio (%)
Number of Principal Components
PC No.
1
vs.
2
Zoom
Select
Score Plot
Loading Vector (PC1)
Loading
m/z
m/z :309.280
Free fatty acid(20:1)
307.455
Loading Plot
Loading Vector (PC2)
Close

10. PLS calculation



PLS results


PLS Result
Zoom
Select
PRESS
PRESS
10
8
6
4
2
0
2
4
6
8
10
12
14
Number of Latent Variables
Predicted Value vs. Observed Value
Predicted Value
3
2.5
2
1.5
1
1
1.5
2
2.5
3
Observed Value
Zoom
Select
Regression Vector
Regression Coefficient
0
-0.0001
-0.0002
-0.0003
-0.0004
-0.0005
250.000
300.000
350.000
400.000
450.000
500.000
550.000
m/z
Close

Summary

- Analysis is carried out by going down the vertical taskbar on the left from top to bottom
- In this example we carried out a “differential analysis” task, but analysis can be carried out in the same way for other analysis modes