

Adjusting MS images

Main window

MS Image Display Section

The screenshot displays the main window of the IMAGEREVEAL software. The interface is divided into several sections:

- File Menu:** Includes options like File, View, Search, Settings, Option, Extensions, and Help.
- Left Panel:** Contains icons for 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), and Image Analysis (Image Classification Calculation, Image Classification Result, Similar Image Extraction).
- ROI List:** A table with columns No., Use, and File Name. It lists 10 ROIs, all of which are checked in the 'Use' column.
- Data Matrix Table:** A table with columns No., Use, Tag, Label, m/z, PLS Coefficient, and a checkbox for 'All'. It lists 10 data points, all of which are checked in the 'All' column.
- Graph:** A plot titled 'testicle_9AA_PLI_SL_5x_1_AREA01.imdx All Average' showing Intensity vs. m/z. The x-axis ranges from 700 to 900, and the y-axis ranges from 0E+00 to 6E+06. Several peaks are labeled with their m/z values: 721.4819, 744.5405, 767.4918, 795.6208, 796.6236, 797.6237, 810.5123, 837.5390, 859.5146, and 885.5378.
- MS Image Display Section (Highlighted):** This section is highlighted with a green box. It contains a large MS image plot with a color scale from 0 to 250. The plot is titled 'testicle_9AA_PLI_SL_5x_1_AREA01.imdx'. To the right of the plot, there is a sidebar with fields for Compound Name/Comment (TIC), File Name (testicle_9AA_PLI_SL_5x_1_AREA01.imdx), and Type (TIC). Below the plot, there is a section for MS Image List, which includes a small thumbnail of the MS image and a label 'TIC'.

Functions

Align the MS image with the display area

Align the reference image with the display area

Adjust the signal intensity and colour scale

MS image adjustment

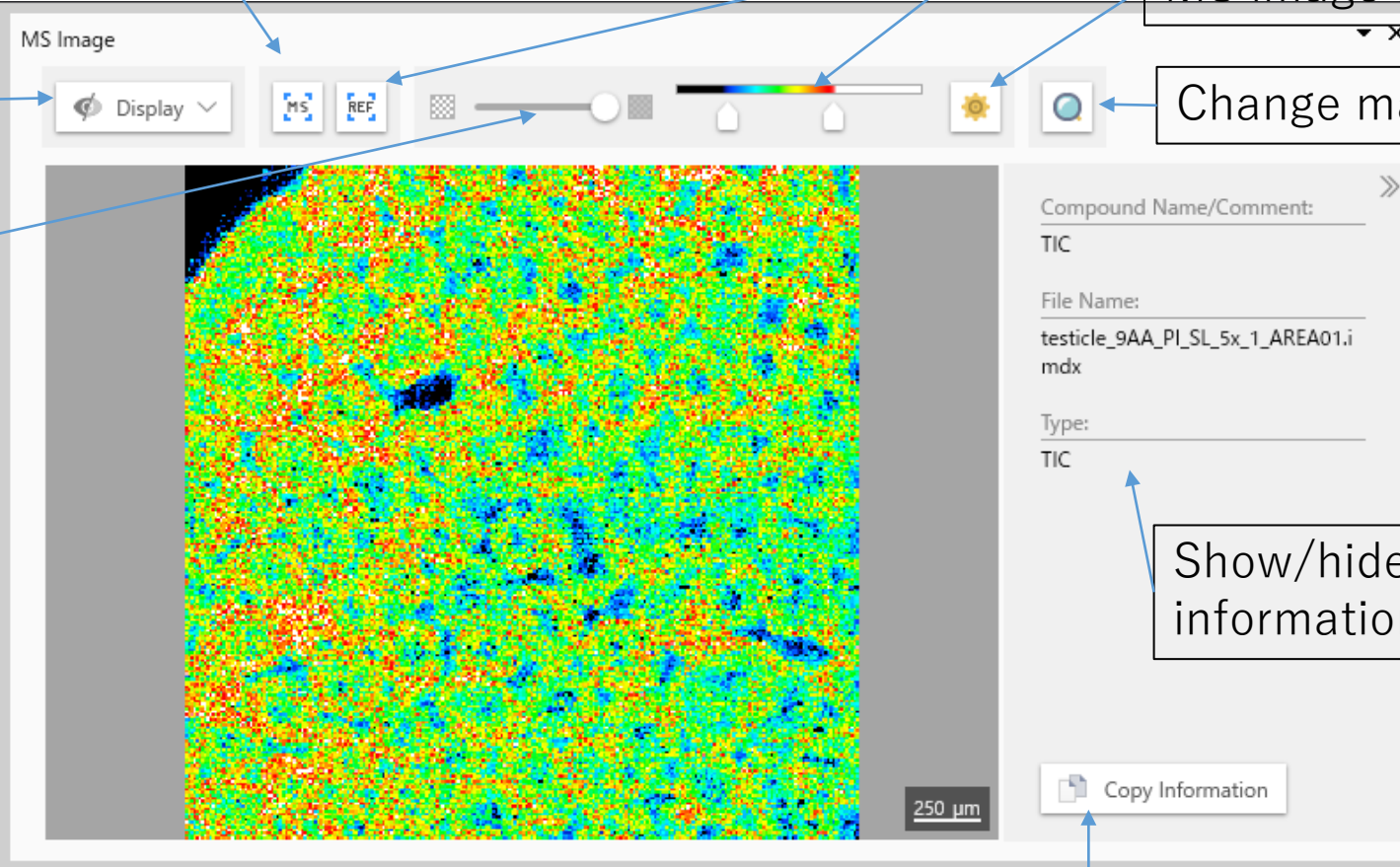
Change magnification rate

Choose the content to be displayed

Change the transparency of the MS image

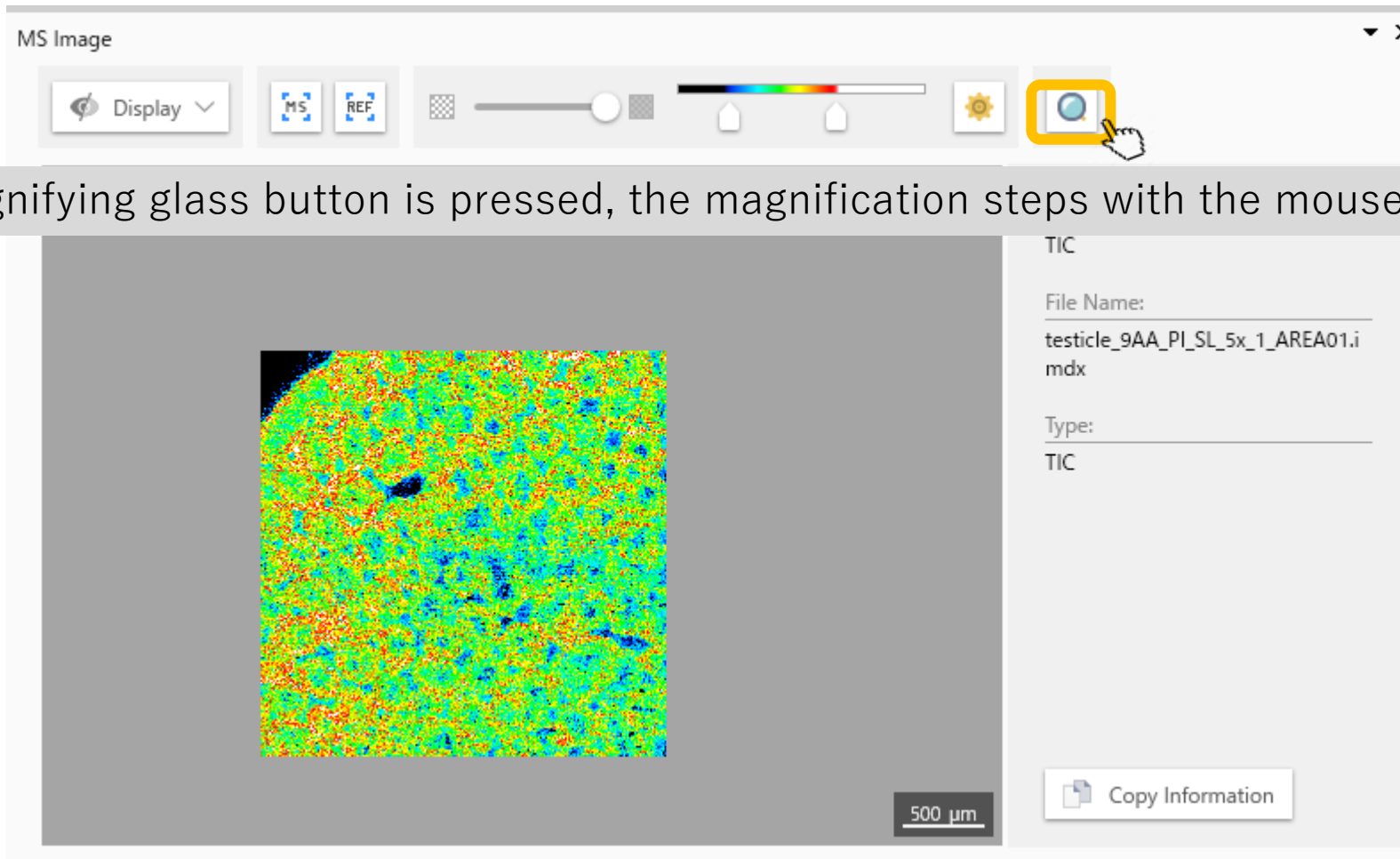
Show/hide MS image information

Copy MS image information



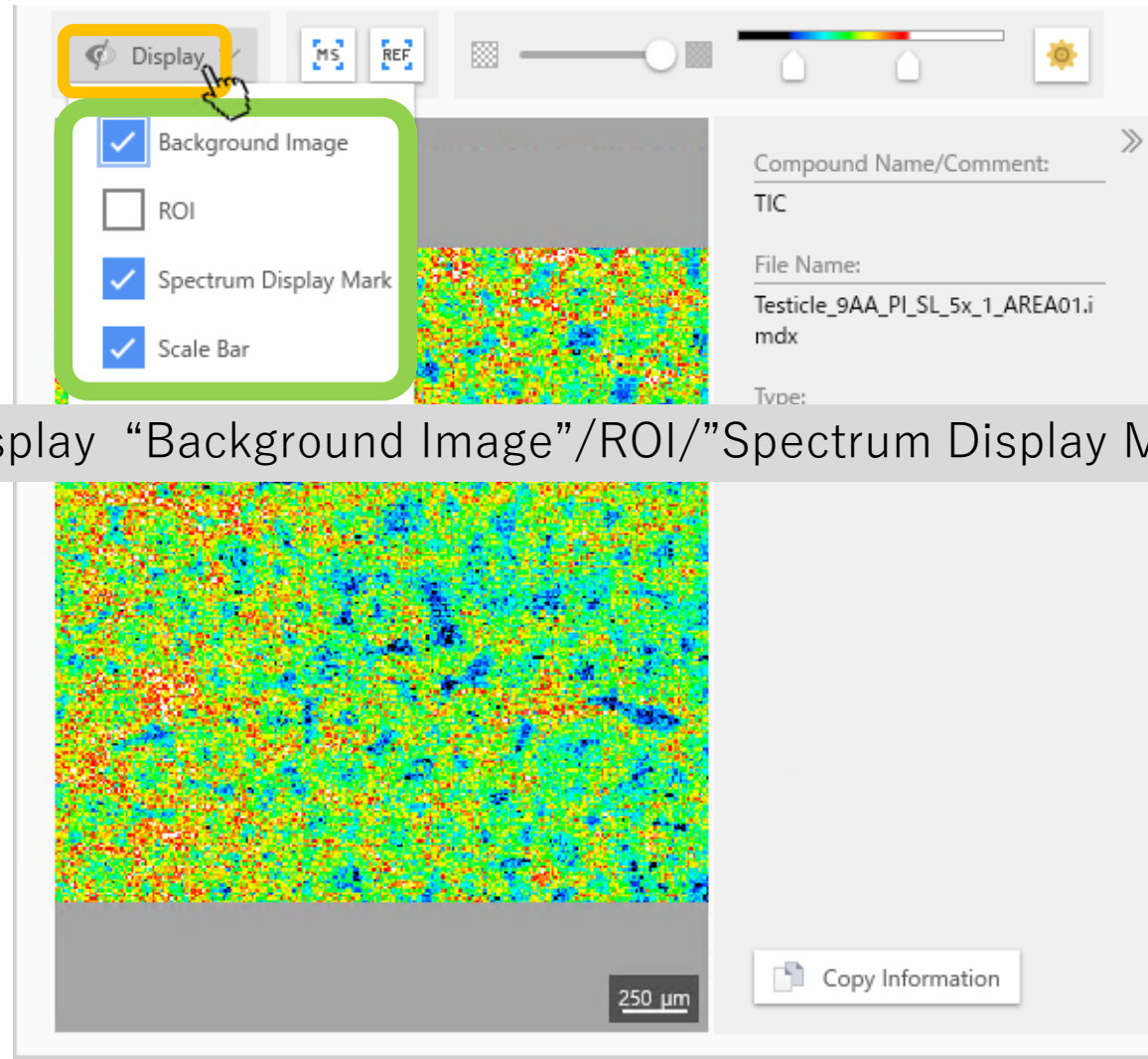
The screenshot shows a software interface for viewing Mass Spectrometry (MS) data. At the top, there's a toolbar with several icons: a 'Display' dropdown menu, 'MS' and 'REF' buttons, a transparency slider, a color scale bar, a gear icon for adjustments, and a magnification icon. Below the toolbar is a large central area displaying a noisy, multi-colored MS image. To the right of the image is a panel containing text fields for 'Compound Name/Comment' (with 'TIC' entered), 'File Name' (with 'testicle_9AA_PI_SL_5x_1_AREA01.i.mdx' entered), and 'Type' (with 'TIC' entered). At the bottom right of this panel is a 'Copy Information' button. A scale bar in the bottom right corner of the image area indicates '250 μm'. Blue arrows point from the text labels to their corresponding UI elements.

Change the magnification rate of MS Images



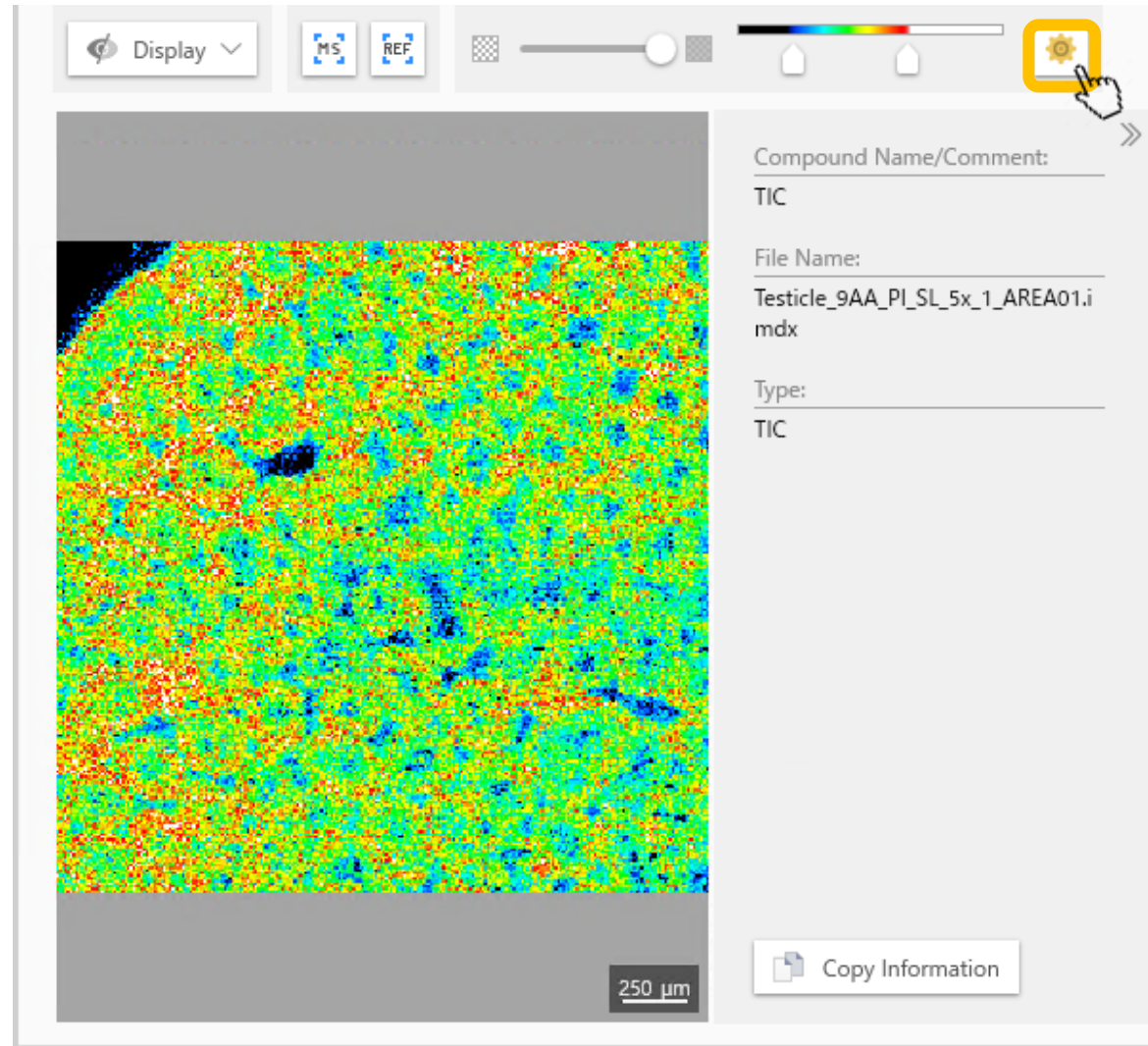
When the magnifying glass button is pressed, the magnification steps with the mouse wheel becomes finer.

Click on “Display” to select which elements are displayed

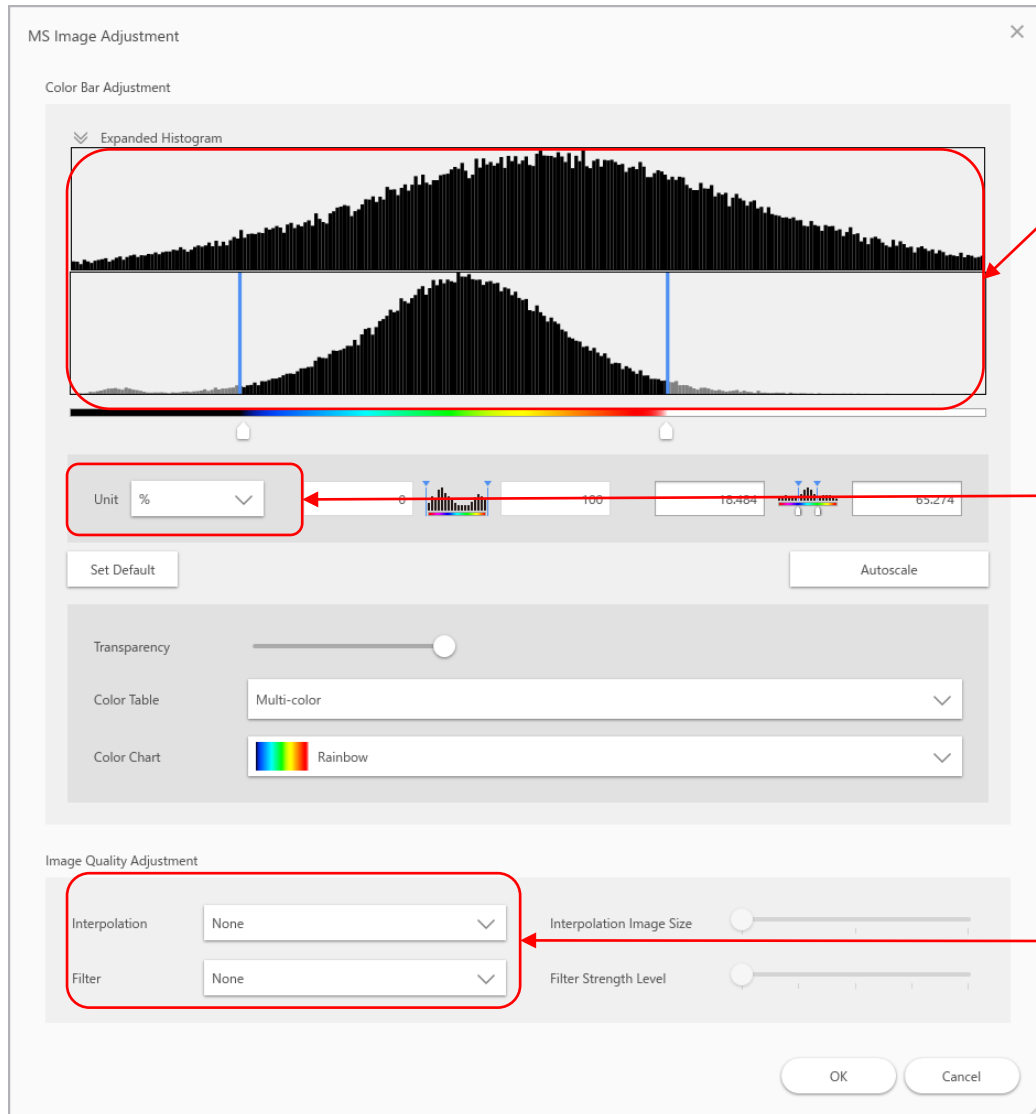


Choose whether to display “Background Image”/“ROI”/“Spectrum Display Mark”/“Scale Bar”.

MS image adjustment



MS image adjustment



This is a histogram of the signal intensity in the image. The vertical axis represents the frequency (number of pixels), and the horizontal axis represents the signal intensity. The lower section is the overall histogram, and the upper section is a histogram with an expanded range of the color bar.

The following units can be selected.

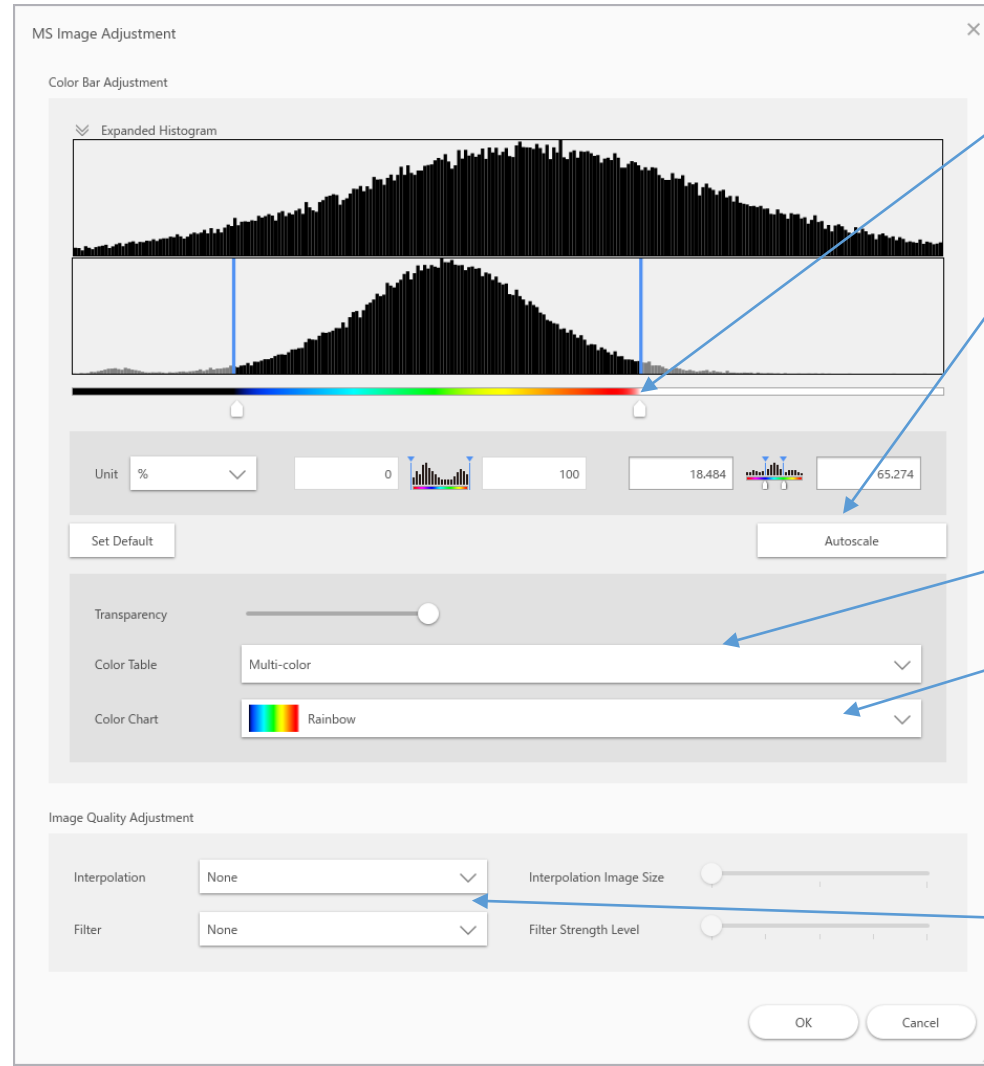
“%”: A relative value with the maximum value set to 100.

“a.u”: stands for "Arbitrary Units". This means that the values are comparable and do not have a specific physical unit. In this case, it refers to signal intensity.

Interpolation: Increases the number of pixels.

Filter: Calculates the signal intensity between pixels.

MS image adjustment



Adjust the view of the image with the slider (coupled to main image)

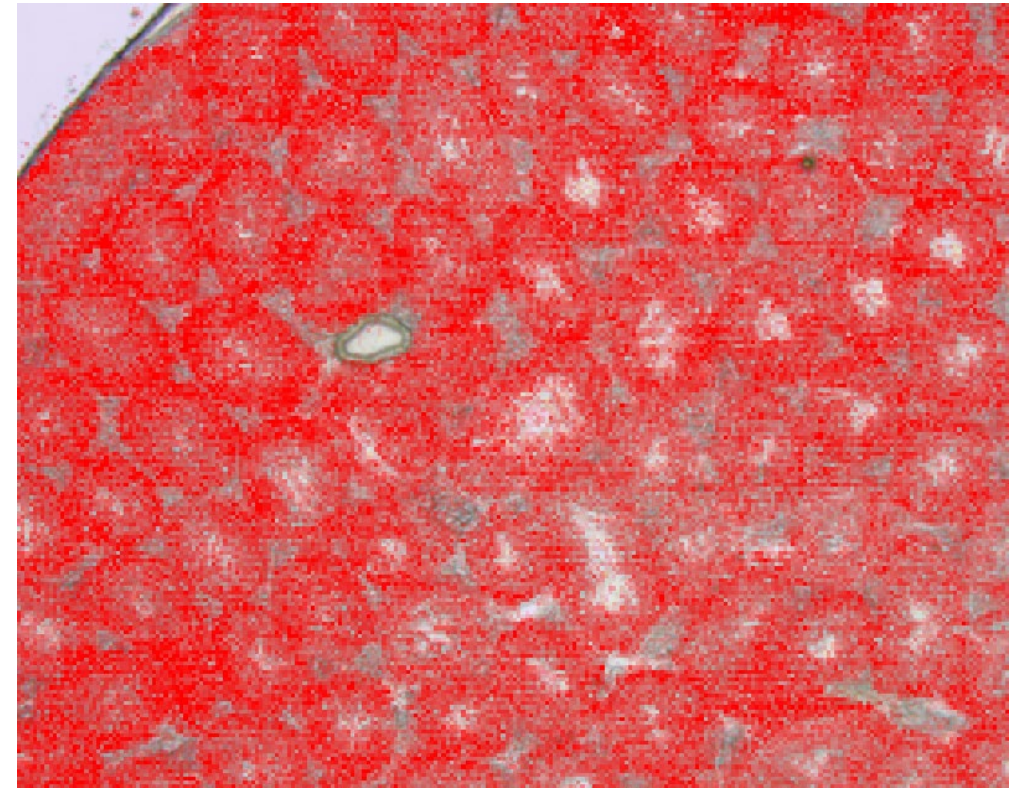
Use when the range is narrow and the slider is difficult to move

Switch between one colour or colour chart

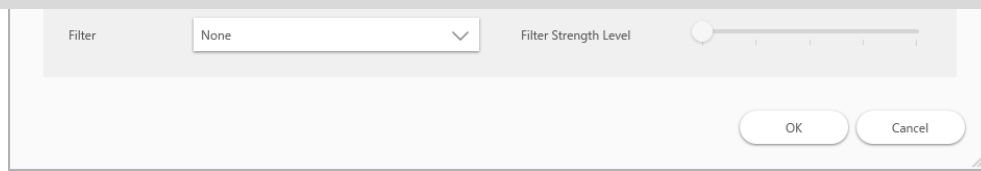
Select the type of colour chart

Image effects: enhance or filter

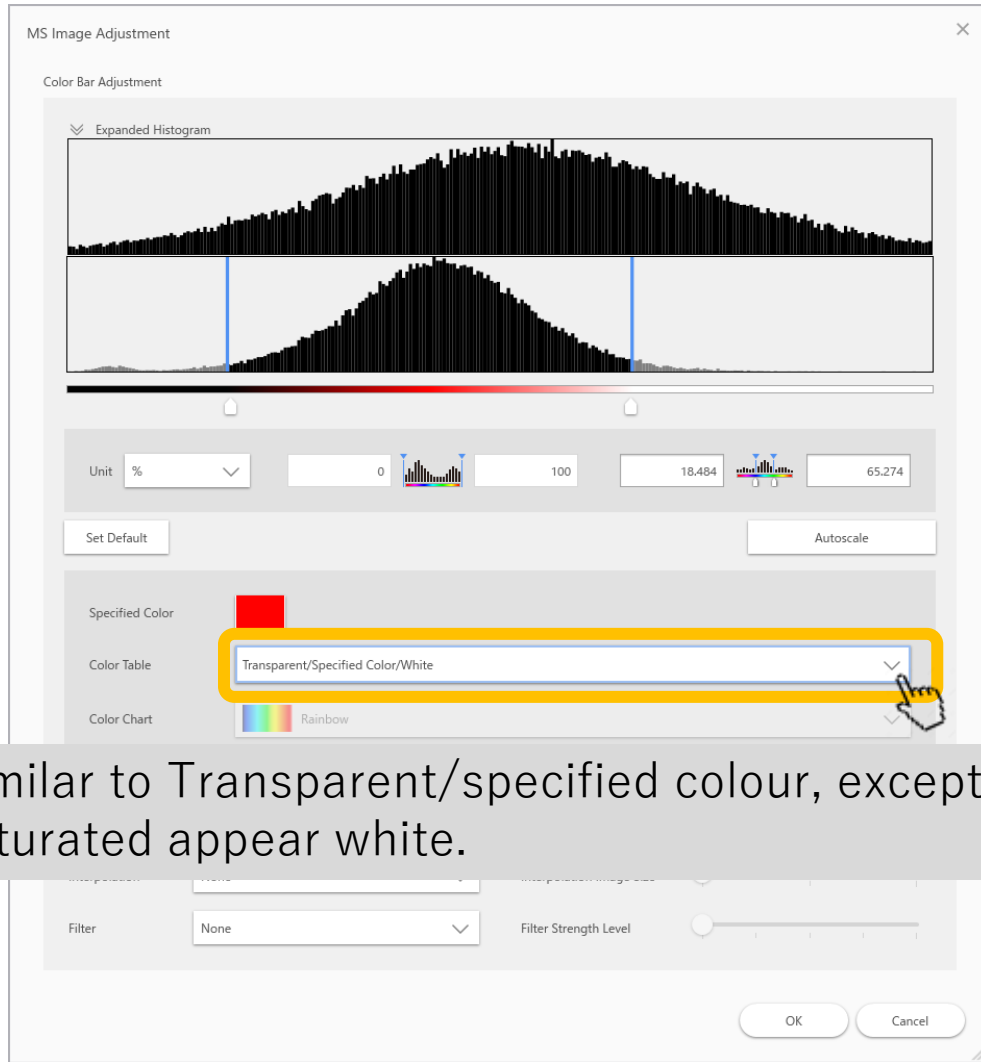
Single colour (transparent/specified colour)



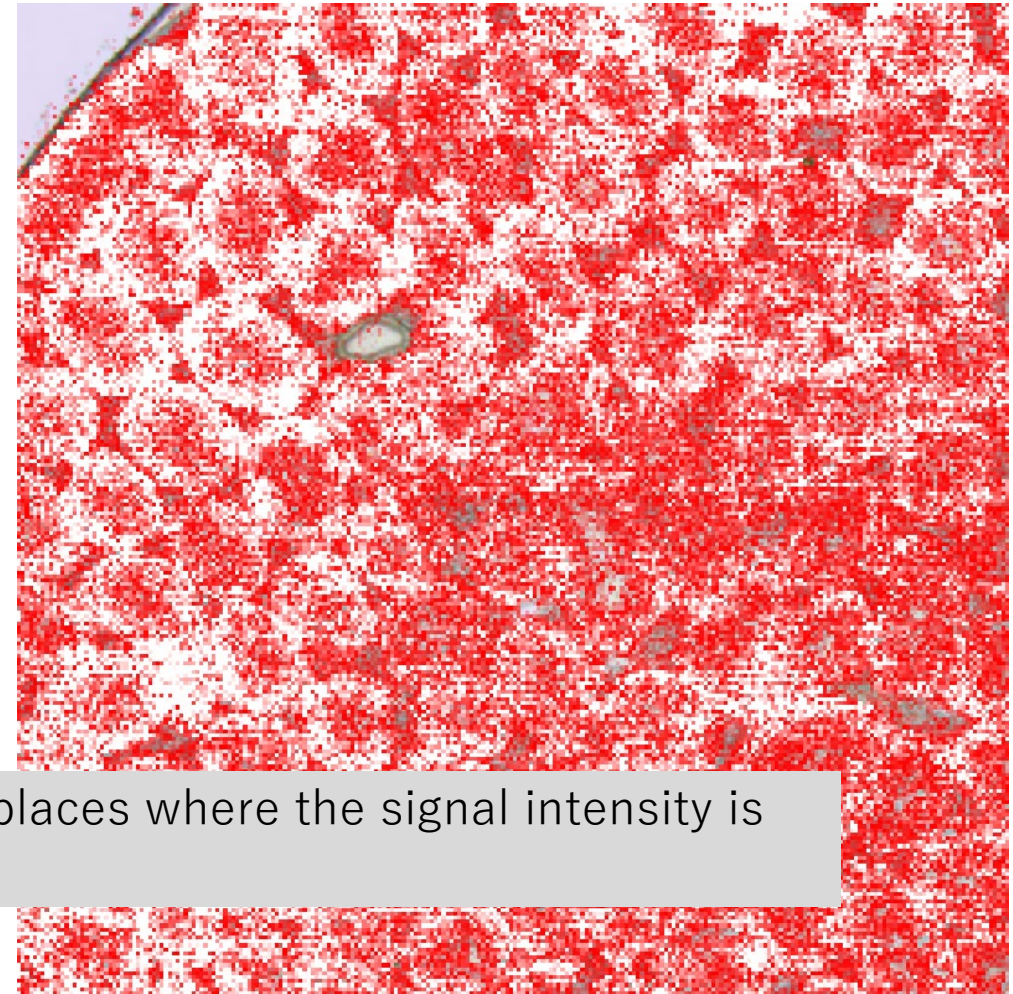
Select Transparent/Specified colour and the areas with strong signal intensity will appear in colour and areas where signal intensity is weak will appear transparent.



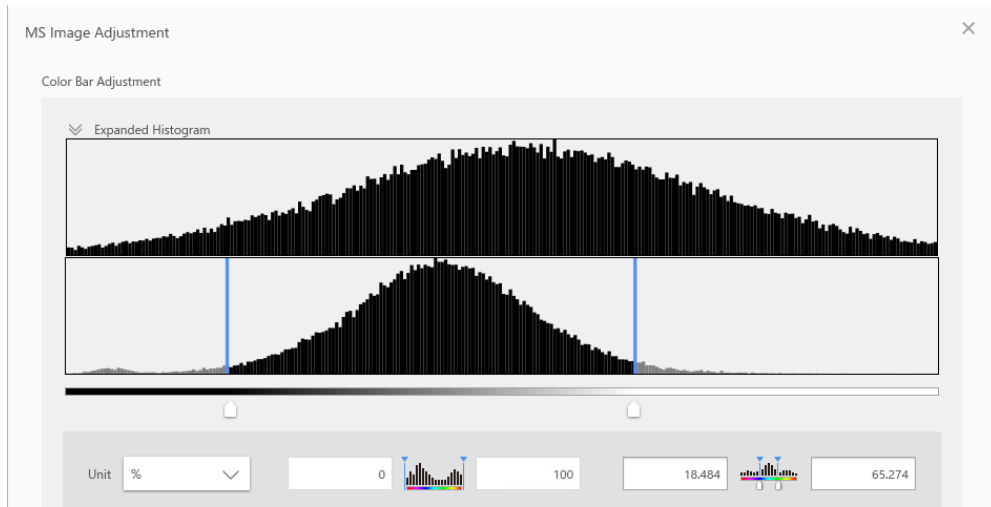
Single colour (transparent/specified colour/white)



Similar to Transparent/specified colour, except that places where the signal intensity is saturated appear white.



Multi-colour



Various colour charts can be applied. Grayscale is available here.

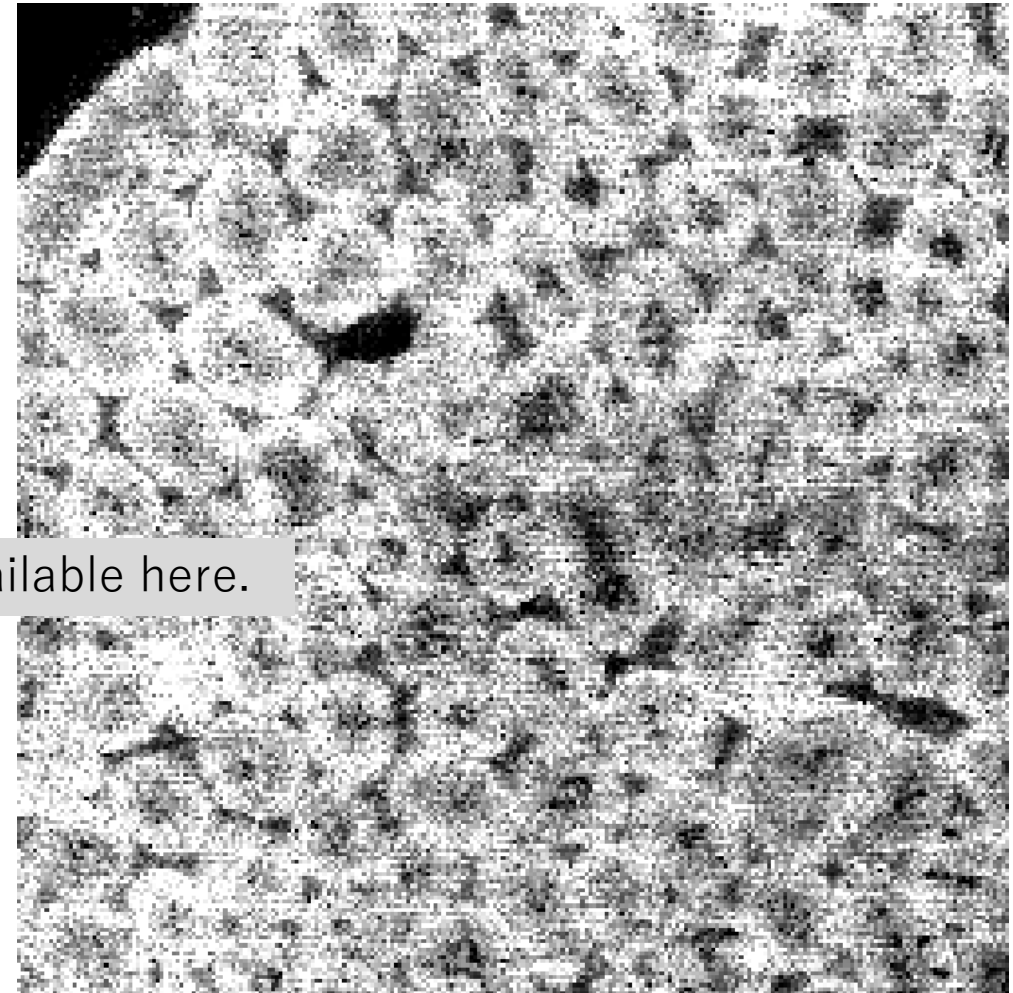
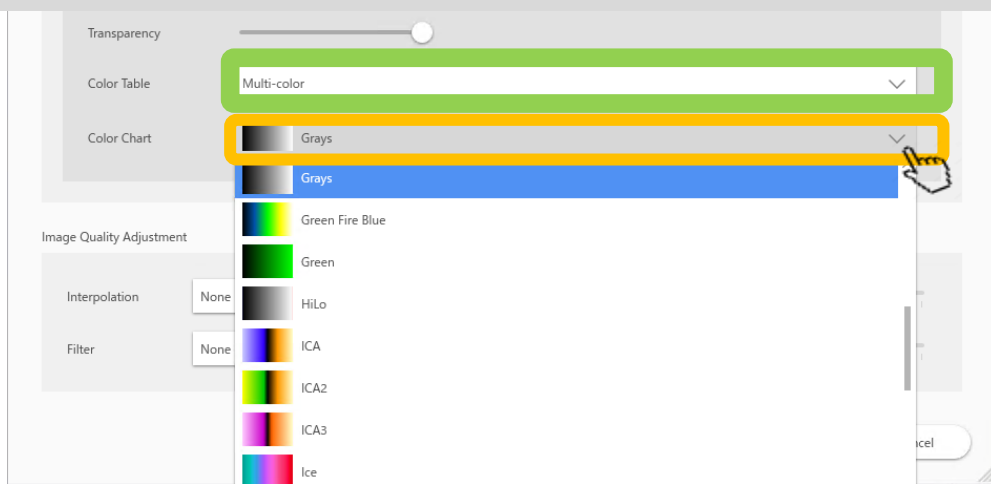
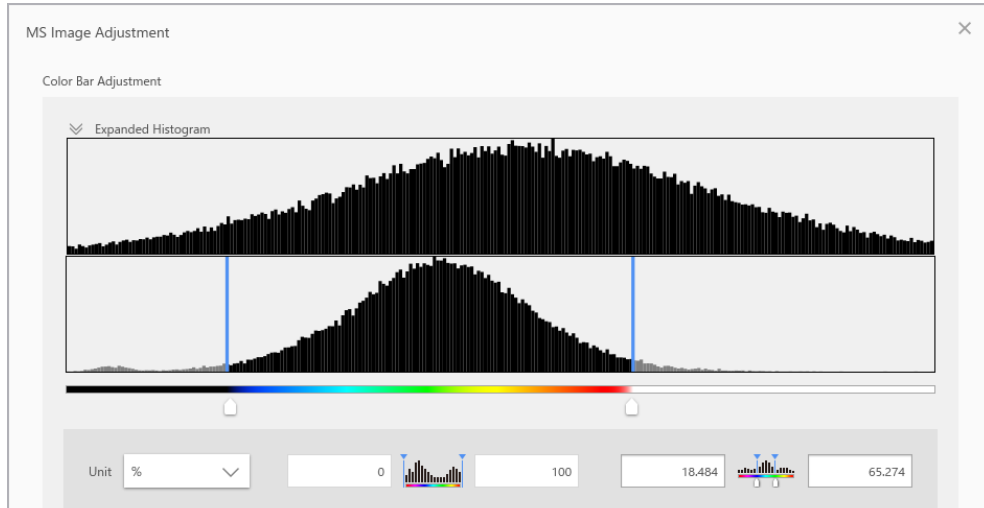


Image effects: interpolation and filter



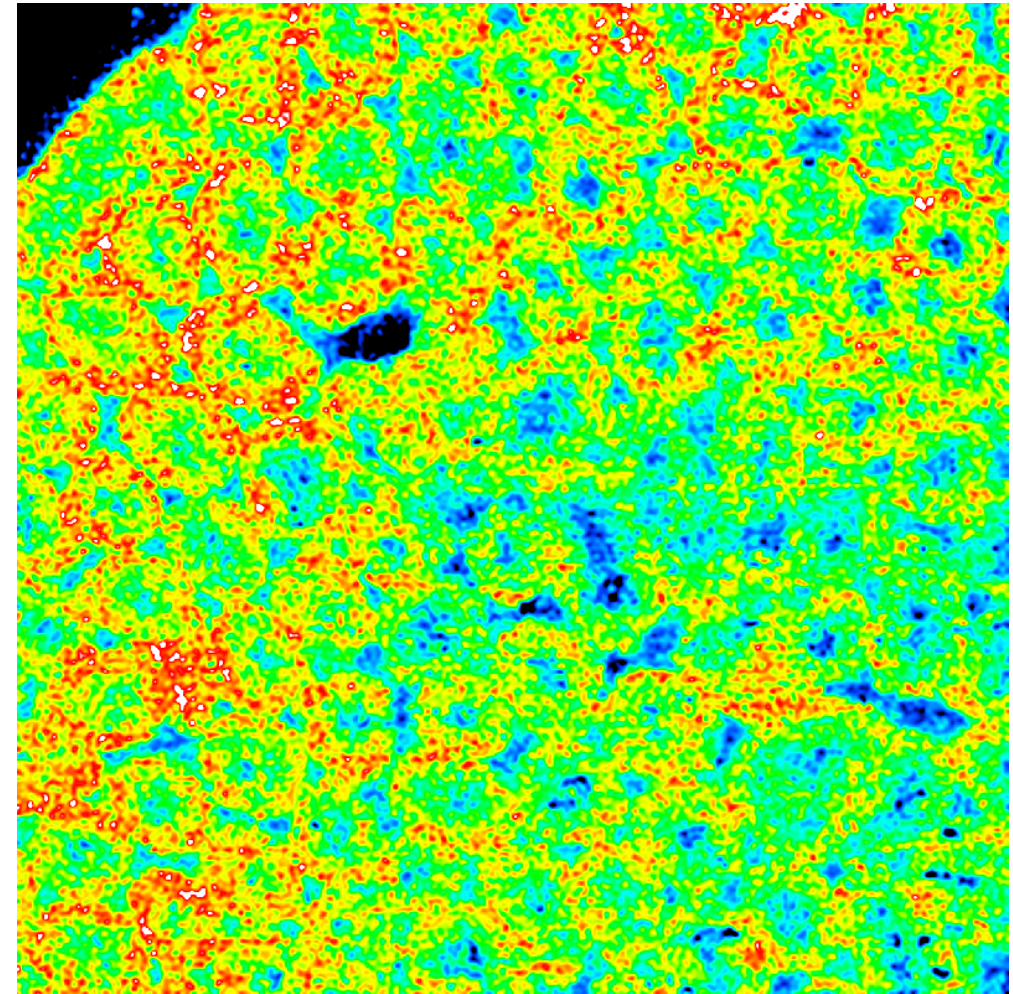
interpolation: Increase the pixel count of the image

Filter: Make the image smoother

Adjust the strength of the effect using the slider

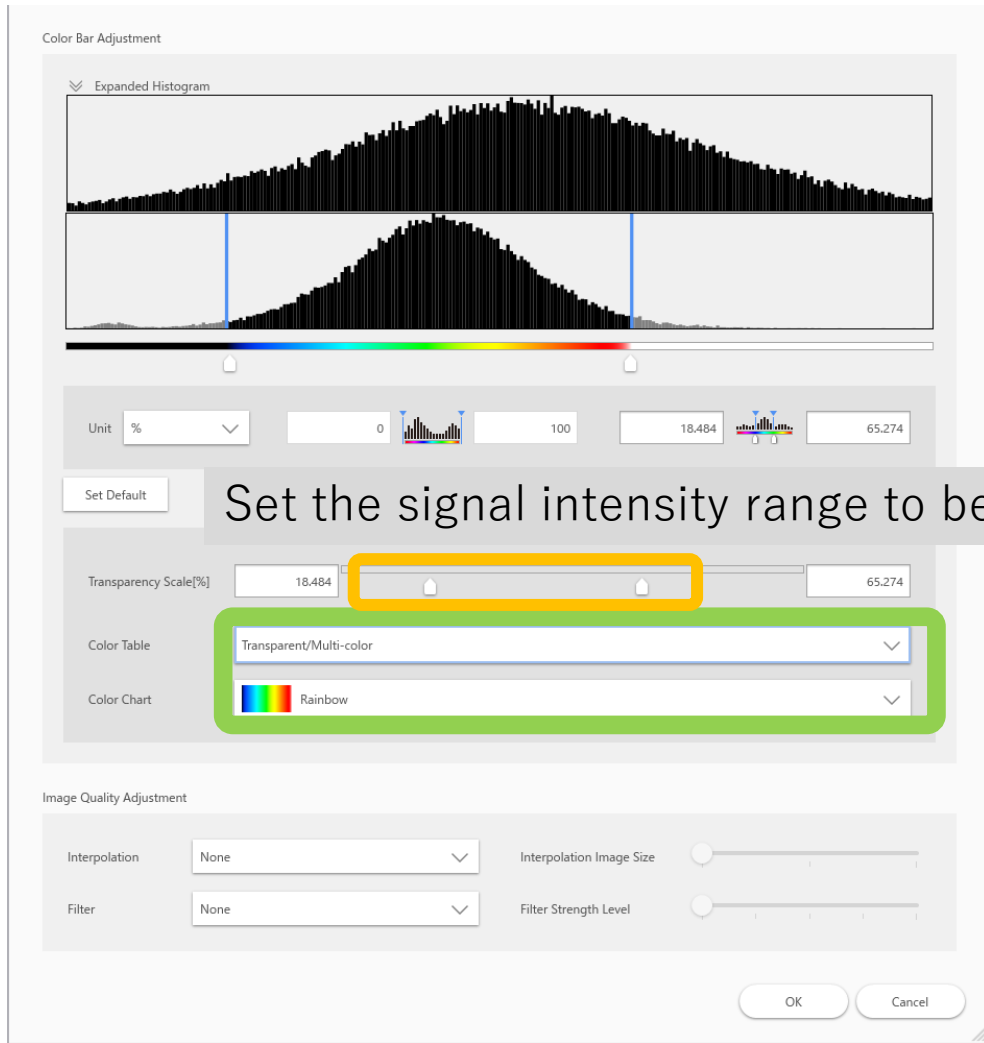
Interpolation	None	Interpolation Image Size	<input type="text"/>
Filter	None	Filter Strength Level	<input type="text"/>

OK Cancel

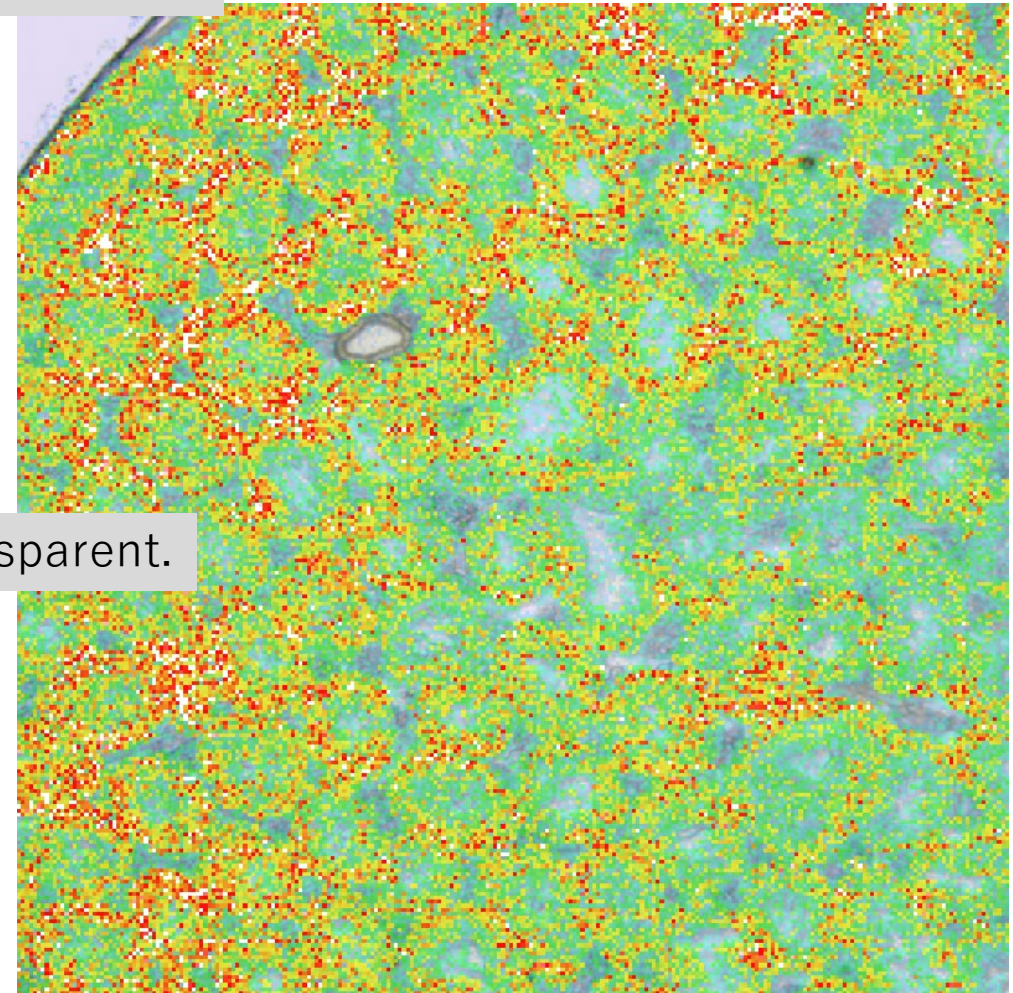


Transparent/Multi-color

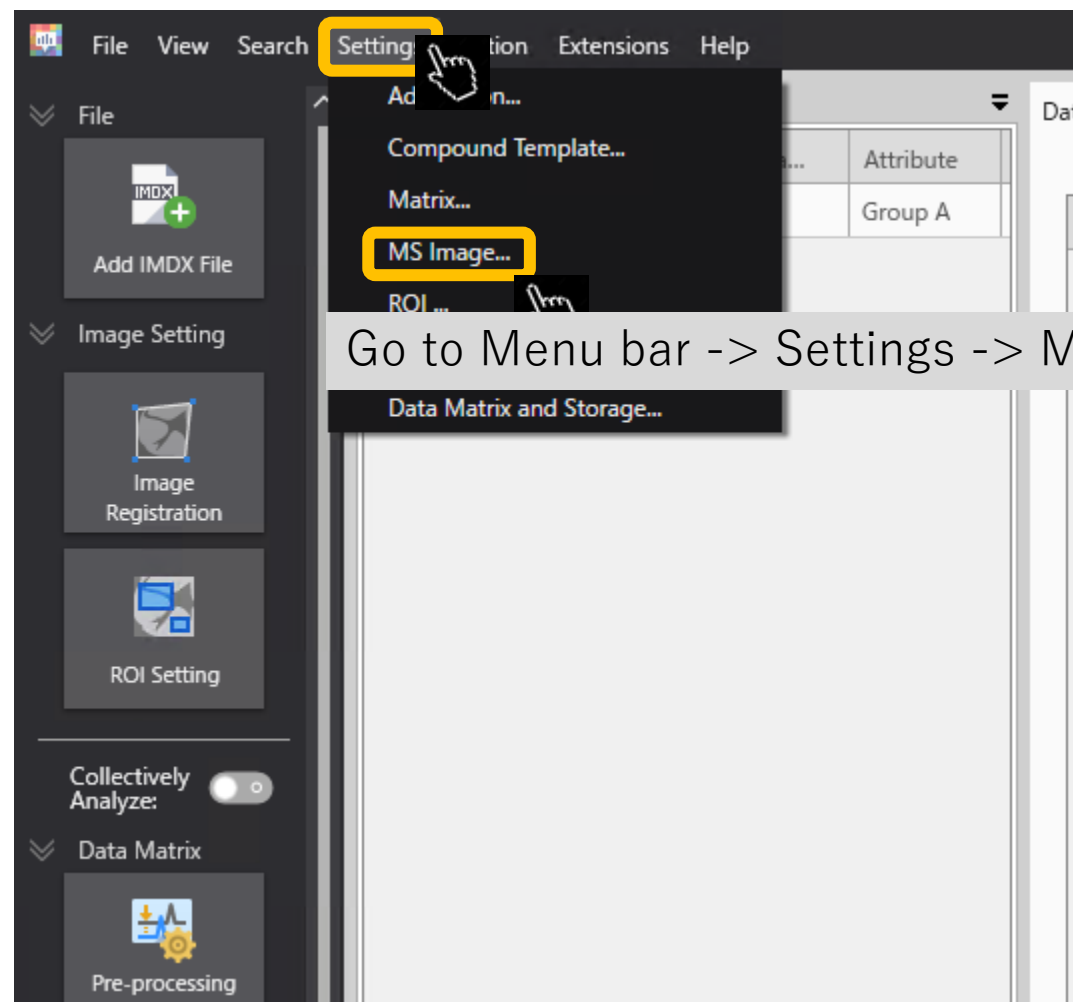
Combination of “Multi-color” and “Transparent”.



Set the signal intensity range to be transparent.



Initial settings for MS images




MS image settings

MS Image Setting

Default Settings When Adding an MS Image

Color Table: Multi-color

Color Chart: Rainbow


MS Image Color: 

Scale Bar Settings

Position: ☐ Upper Left ☐ Upper Right ☐ Lower Left ☒ Lower Right

Orientation: ☒ Horizontal ☐ Vertical

Unmeasured Point Settings

Unmeasured Point Color: 

File Name Setting When Exporting

☒ Compound Name

☒ m/z±Tolerance

☒ File Name

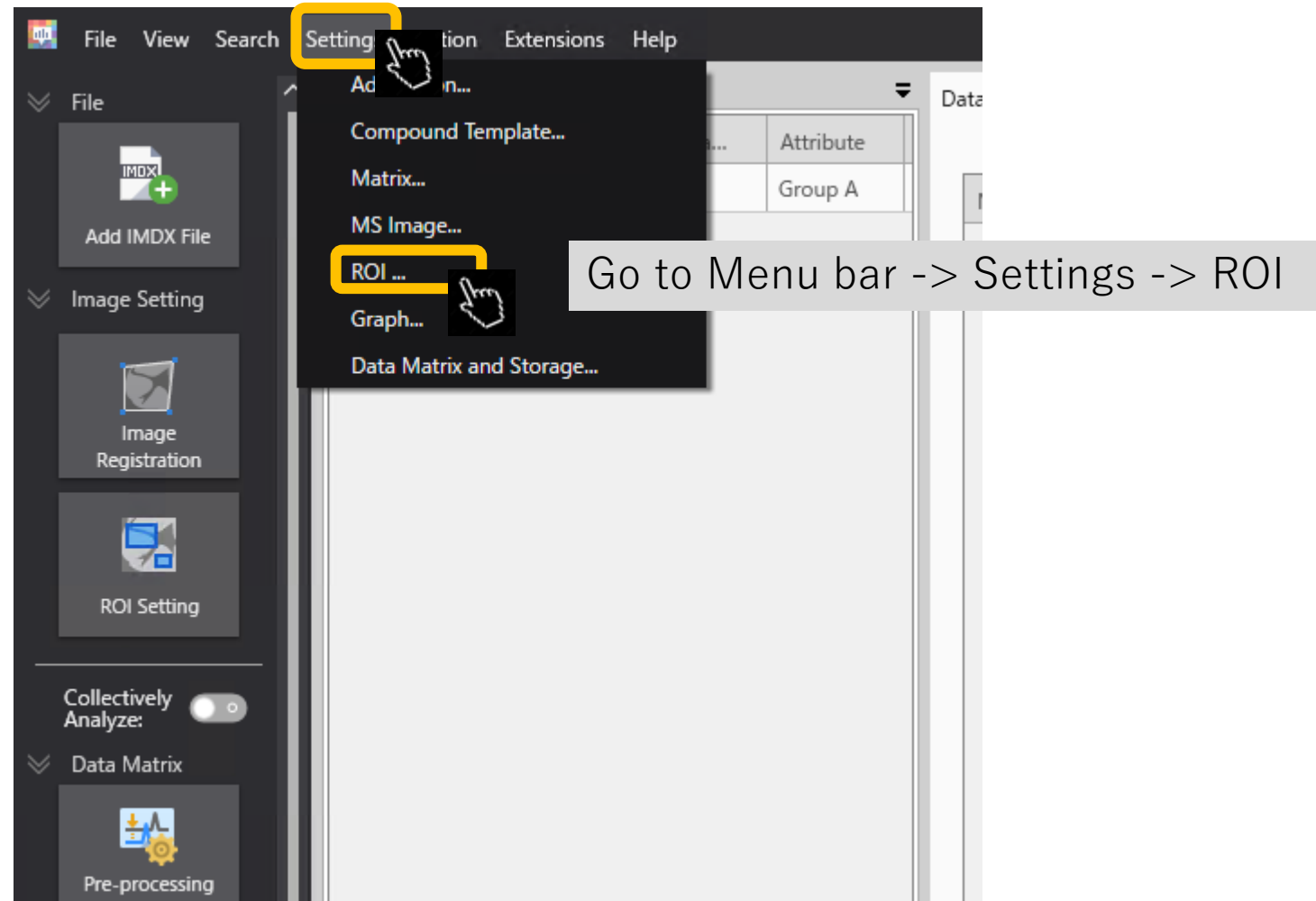
Reset Default Value OK Cancel

Parameters can be set for creating MS images.

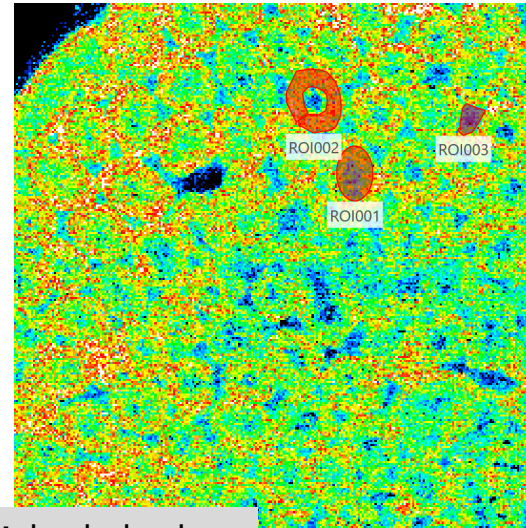
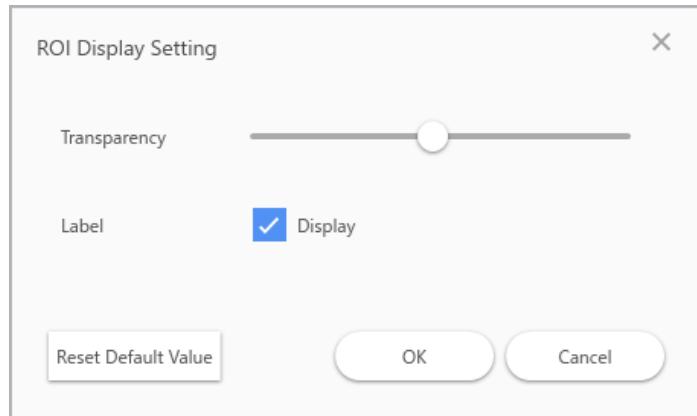
Settings can be applied for:

- colour charts
- scale bars
- unmeasured points
- exported file names

ROI display settings



ROI display settings



It is possible to adjust the transparency and show/hide labels

