

***MICROTEK***



**MiBio**

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***Reference Manual***

**BIO**

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To obtain optimal results from the Microtek scanning software and user's manual, you should be familiar with such Windows concepts as pointing, clicking, dragging, and selecting from menus and dialog boxes. If these things are new to you, refer to your Microsoft Windows User's Guide.

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# Introduction

MiBio is Microtek's management software developed exclusively for Bio-tech analysis and research. It features several easy-to-use but very practical functions, supporting users with powerful tools in a clear and simple control panel.

- Allows users to get analysis images instantly from a scanner or an assigned folder. There are no requirements for complicated connecting or data transactions.
- Allows users to set up searching conditions based on their references, which shortens search timing and therefor enhances the efficiency of researching results.
- Allows users to set up background conditions for the research, which enhances the precision probability of final results.
- Exports the researching data into Excel format directly, which can be backed up and stored conveniently. If needed in the future, users can withdraw them easily from the database and utilize them immediately.



## System Requirements

- Windows XP, Vista or Windows 7
- Net Framework 4
- 1 GB RAM or more suggested for better performance
- Free hard disk space as required by the size of your scanned images and for additional working files
- CD-ROM drive (internal or external)
- “Thousands of colors” display or better
- Microtek scanners that support ScanWizard Bio



## Launching MiBio

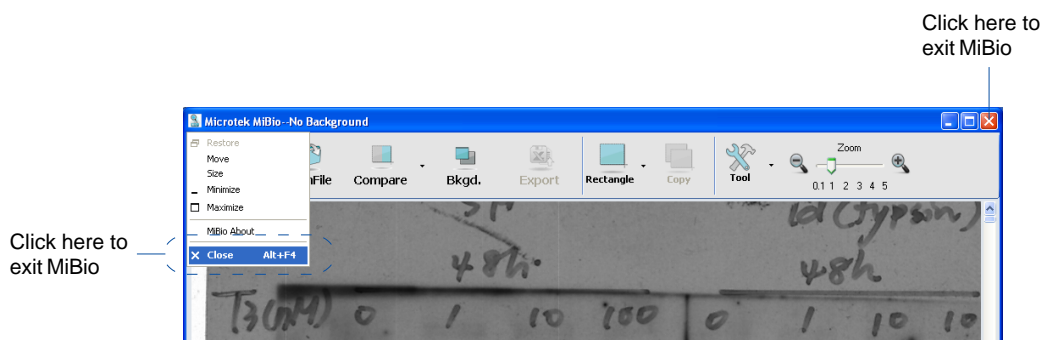
MiBio can be launched in either Plug-in or Stand-alone mode.

- From Plug-in mode: Choose the *Import* or *Acquire* command from the File menu of your application, then select *Microtek MiBio*.
- From Stand-alone mode: Double-click the *MiBio* icon on the Windows desktop, or choose *Start, Programs, Microtek MiBio*, then *Microtek MiBio*.

## Exiting MiBio

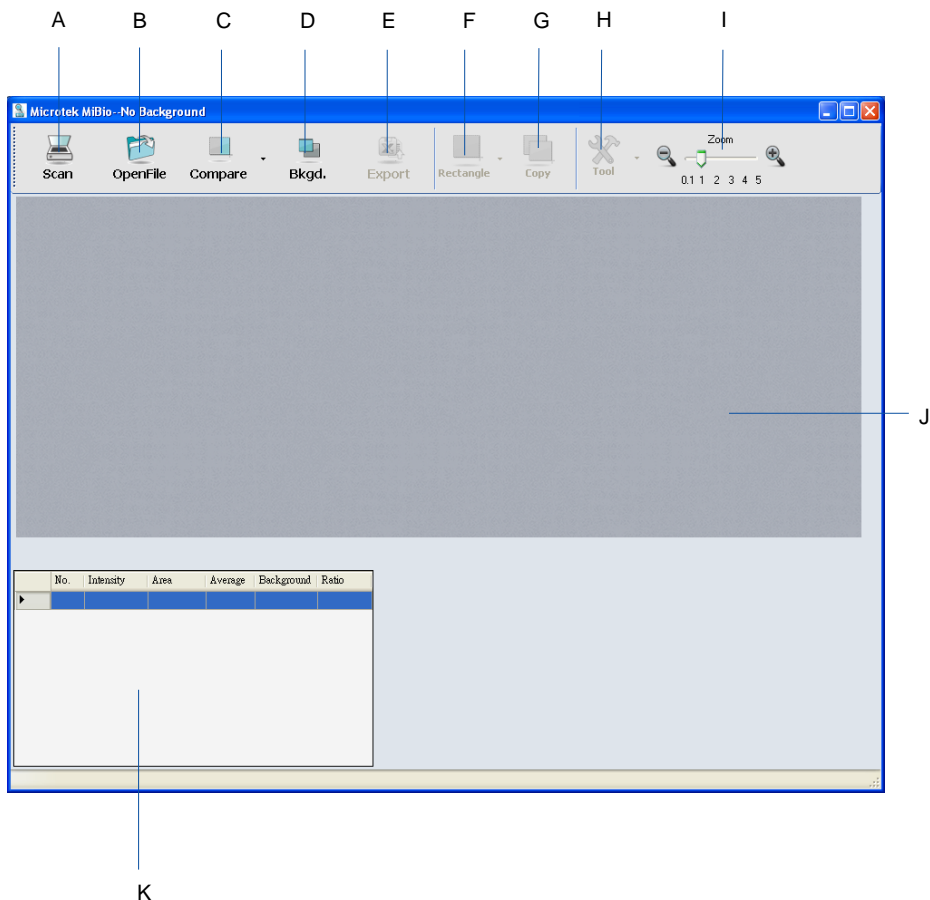
To exit MiBio:

Click the Exit button “X” located at the top right corner of the MiBio control panel; or choose the Close command from the MiBio menu of the Main window.



# MiBio Control Panel

The MiBio Control Panel appears after you launch MiBio. To adjust the size of the control panel, simply drag the bottom right corner of the MiBio control panel. From the control panel, you can perform some functions related to your researching projects.



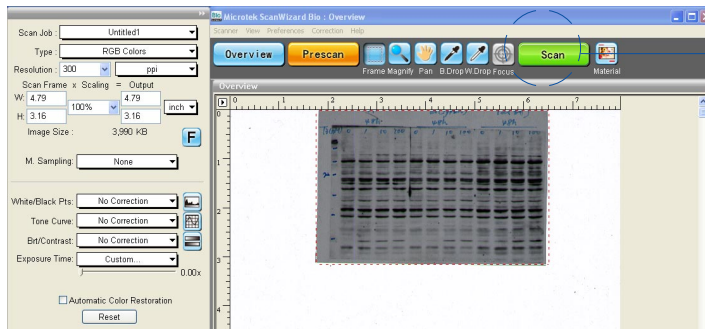
- A. Scan button: This button enables the ScanWizard Bio program to carry in the images from the scanner.
- B. Open File button: This button opens and generates the saved image files from assigned folders.
- C. Compare button: This button contains two functions. One is the Compare function and the other is Spot Finder function.
  - 1) Compare function lets users to choose a spot or several spots as comparing benchmarks and to use them to analyze other spots in the image.
  - 2) Spot Finder button: This button allows users to define the settings of search conditions for the analysis of images.
- D. Background button: This button allows users to set up background conditions for the analysis of images.
- E. Export button: This button allows to save the analyzed data in the Excel format.
- F. Rectangle button: This button allows users to select the area to study by two different shapes.
  - Rectangle: Selects the area in a rectangle shape.
  - Ellipse: Selects the area in an ellipse shape.
- G. Copy button: This button makes a reproduction of the same area as the last drawing did.
- H. Tool button: This button allows users to mark some notes or labels on the scanned image when necessary.
  - Text: Writes some notes about a pointed spot.
  - Arrow: Draws an arrow on a pointed spot.
  - 90° clockwise: Rotates an image 90 degree in a clockwise direction.
  - 90° counter clockwise: Rotates an image 90 degree in a counterclockwise direction.
  - ClearData: Deletes all data displayed in the Data table.



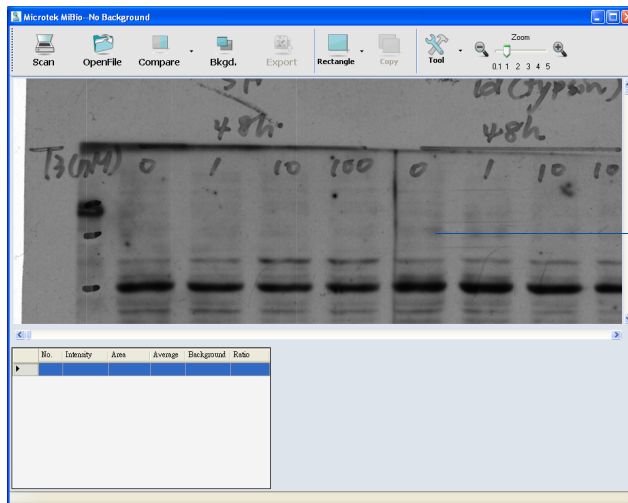
- I. Magnify sliding bar: Slides right to zoom in (magnify) the view of the image; slides left to zoom out (reduce) the view of the image.
- J. View area: The image imported from a scanner or an assigned folder is displayed in this area.
- K. Data table: Creates a list of detailed information of the image displayed in the View area.

# Scan Button

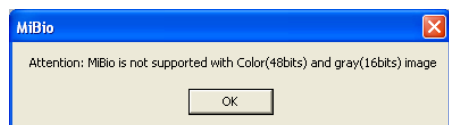
When the Scan button is clicked, the ScanWizard Bio program will be enabled. Users can adjust the scanning settings in the ScanWizard Bio for outputting the scanned images according to their own preferences.



When done, click the Scan button in the Preview window of the ScanWizard Bio; then, the ScanWizard Bio program will be closed and the scanned image will be displayed in the View area of the MiBio control panel.



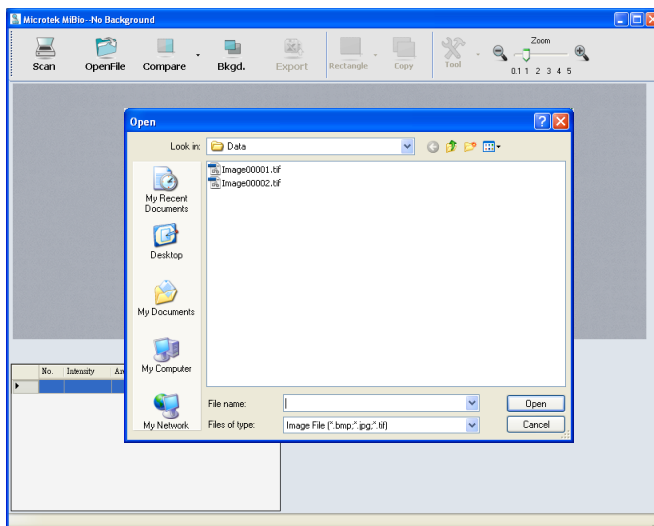
Please take note that the MiBio program only supports scanning of grayscale images less than 16 bits. When clicking the Scan button, a window pops up on the screen to remind you about the settings of image types.



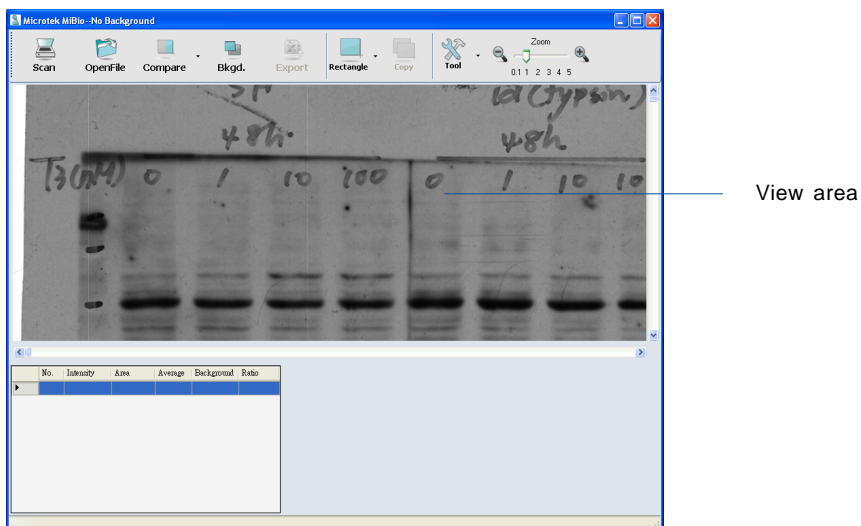
# Open File Button

When the Open File button is clicked, users can select and import a saved image from an assigned folder into the MiBio control panel.

Click the Open File button to activate the file-exploring window as the following. Toggle through the folders and files and select the one you want to open. When done, click the OK button.

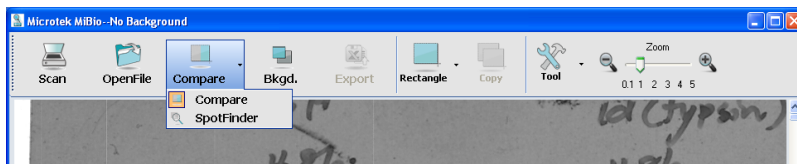


The selected and imported image will be displayed in the View area in the MiBio control panel.



# Compare Button

This button contains two functions which conduct different uses and studies of the scanned image. One function is called Compare and the other is Spot Finder.



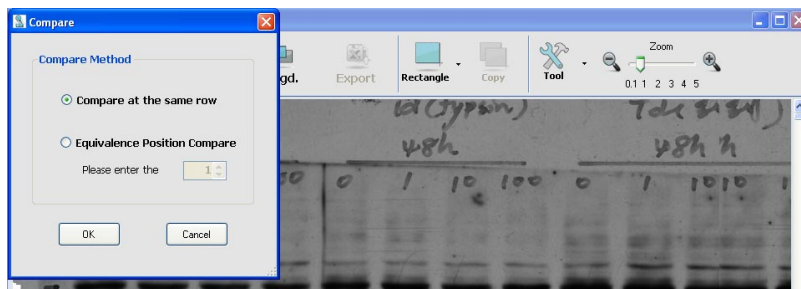
## Compare Function

The Compare function allows users to choose one or several spot on a scanned image as a comparing benchmark, and then use it to analyze other selected spots. There are two methods users can use:

### I. At the Same Row


This method lets users to choose a spot as a benchmark and use it as a comparing criterion for other spots at the same row. To apply this method:

1. Click the arrow on the Compare button to enable two sub-functions. Select the Compare function to activate the Compare Method window.
2. Check "Compare at the same row" option and click the OK button.



- Click the Rectangle button and select either Rectangle or Ellipse to make a drawing. Move your cursor (mouse) to the place on the image in the View area which you want to analyze. Use the left button of the cursor to draw a rectangle or ellipse as big as you want. The drawn rectangle or ellipse will be bordered in colored lines.

Once the rectangle or ellipse is formed, the corresponding analysis data will appear in the Data Table below. This data would be the benchmark data.



Use it to draw a rectangle or ellipse

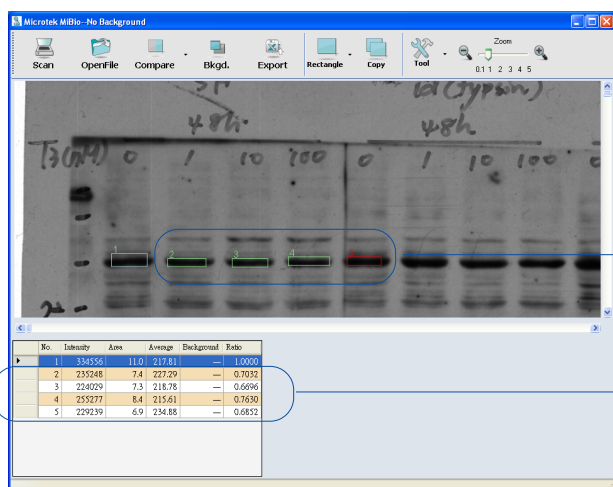
The data of the benchmark area

No.	Intensity	Ave	Average	Background	Ratio
1	334556	11.0	217.81	—	1.0000

- Repeat the step 3 to select more areas you wish to analyze at the same row. The corresponding data will be displayed sequentially by the orders you draw in the Data Table.

Or you can use the Copy button to redraw an area with the same size and shape as the benchmark factor.

You can use the lists of the data to conduct the study as you want.



Corresponding data to the areas selected on the image

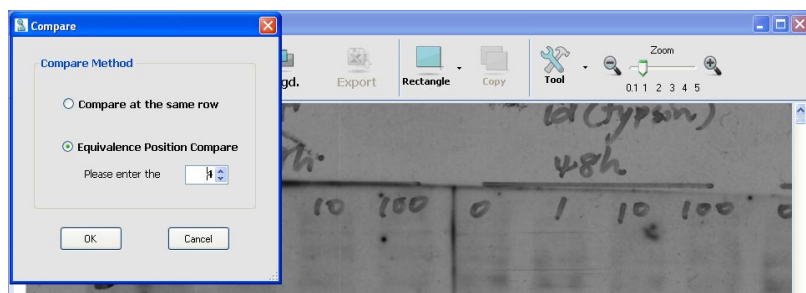
No.	Intensity	Ave	Average	Background	Ratio
1	334556	11.0	217.81	—	1.0000
2	235248	7.4	227.59	—	0.7039
3	224029	7.3	218.78	—	0.6696
4	255277	8.4	215.61	—	0.7630
5	229239	6.9	234.88	—	0.6852

## II. At the Equivalence Position

This method lets users to choose several spots at one row as a benchmarks and use them as comparing criterion for other spots at the equivalence positions. To apply this method:

1. Click the arrow on the Compare button to enable two sub-functions. Select the Compare function to activate the Compare Method window.
2. Check "Equivalence Position Compare" option. By the following, key in the numbers in the column or use the up-down scroll bar to select the numbers which you want to set up as benchmarks.

When done, click the OK button.



3. Click the Rectangle button and select either Rectangle or Ellipse to make a drawing. Move your cursor (mouse) to the place on the image in the View area which you want to analyze. Use the left button of the cursor to draw a rectangle or ellipse as big as you want. Take turns to finish drawing the rests of benchmark rectangles or ellipses assigned at the same row.

Once the rectangles or ellipses are formed, the corresponding analysis data (the area selected as comparing criteria) will appear in the Data Table below. This data would be the benchmark data.

Use it to draw a rectangle or ellipse

No.	Intensity	Area	Average	Background	Ratio
1	324584	10.4	222.32	—	—
2	233801	8.0	208.75	—	—
3	258788	9.3	197.40	—	—
4	368710	13.8	190.84	—	—

The data of the benchmark area

- Use the Rectangle or Ellipse tool to select areas you wish to analyze at a different row. However, the positions you choose must be equivalent positions to those of the benchmark spots. The corresponding data (for the areas to be analyzed) will be displayed sequentially by the orders you draw in the Data Table.

Or you can use the Copy button to redraw an area with the same size and shape as the benchmark factor.

You can use the lists of the data to conduct the study as you want.

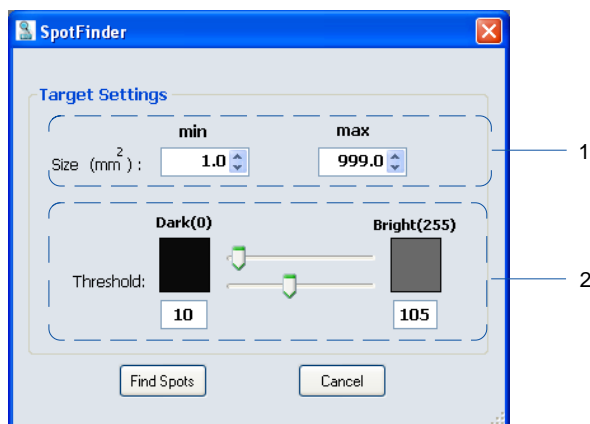
No.	Intensity	Area	Average	Background	Ratio
1	324584	10.4	222.32	—	—
2	233801	8.0	208.75	—	—
3	258788	9.3	197.40	—	—
4	368710	13.8	190.84	—	—

No.	Intensity	Area	Average	Background	Ratio
5	350723	11.1	224.62	—	—
6	354177	10.2	234.02	—	—
7	413551	13.0	226.89	—	—
8	375788	12.3	218.99	—	—

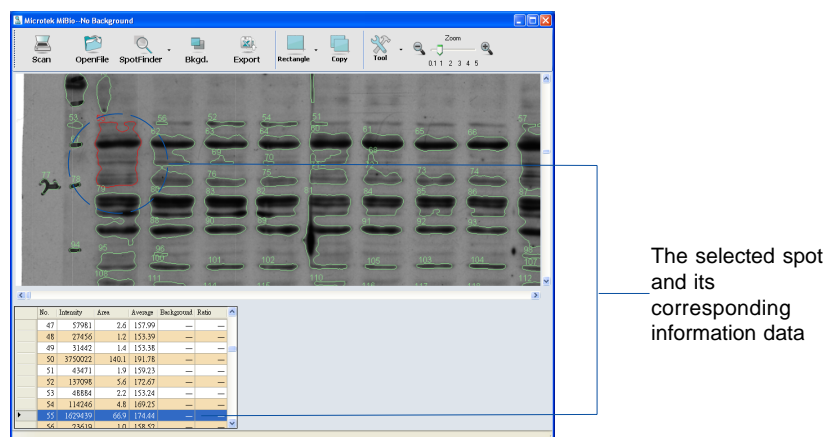
## Spot Finder Function

This button allows to set up searching conditions for the scanned or imported image displayed in the View area, which is helpful to speed up the searching process and to improve the efficiency of the searching result.

Click the Spot Finder button to enable the setup window:



1. Use the up-down menu option to set up the size for the searching spots.
2. Slide the bar or key in the predefined value directly to set up the darkness/brightness for the searching spots.
3. When done, click the Find Spots button to start the searching process. The results of the spots are displayed in the View area in the control panel. When you click the spot in the View area, the corresponding information will be highlighted in the Data table below.

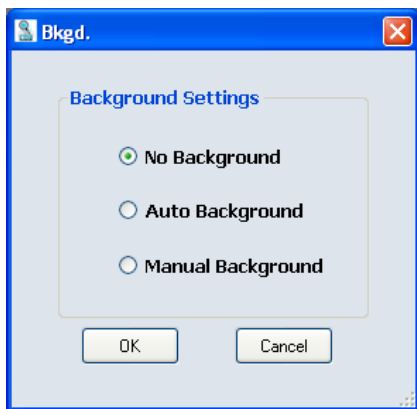




# Background Button

This button allows to select a background as a comparing factor for the scanned or imported image displayed in the View area, which is helpful to enhance the precision of the analyzed data.

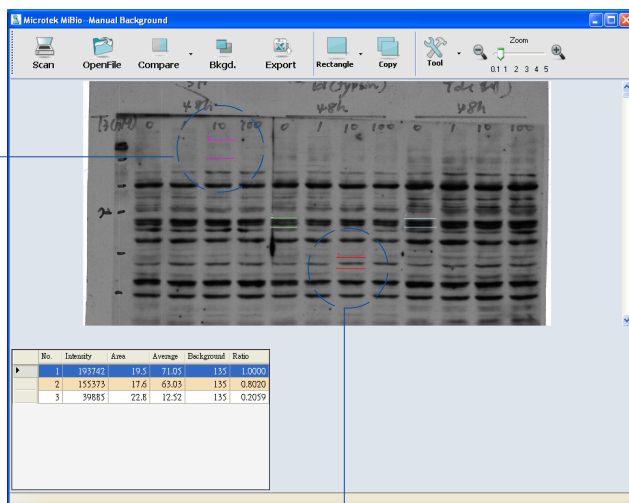
Click the Background button to enable the setup window:



- No Background: Do not assign any background data as a comparing factor.
- Auto Background: The system assigns a background data as a comparing factor automatically.
- Manual Background: Select your predefined background data as a comparing factor.

When this setting is selected, click the Start Select button and you can draw a rectangle on the scanned or imported image as a comparing factor. The assigned background factor is bordered with pink lines. Then, use the Draw Rectangle or Draw Ellipse tool to select the area you where want to use to compare with the assigned background factor.

The assigned background comparing factor

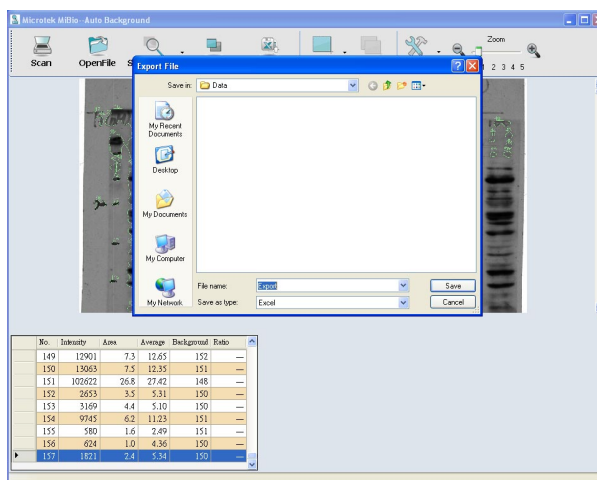


The selected data

# Export Button

After users finish the analysis of the data about the scanned or imported images, they can use the Export button to transform and save the data in the Excel format for the further use and study. The transformed Excel file will be opened automatically when it has been saved.

After finishing the analysis of the scanned or imported image, click the Export button to activate the Export File window. The default settings for the file's name is Export and for the file's type is Excel. If they are not what you want, take turns to key in your preferred file's name, type, and the donation where you want to save it, and then click the OK button. The exported file will be saved under the name, type and location which assigned by you.



Note:

1. When you use the Export button to save the analyzed data into the Excel format, the MiBio program will also save the scanned image in a TIF format for further use or inspection.
2. When you finish analyzing the scanned image, if you do not use the Export button to save the data of the image in the Excel file, there will be no file record kept in your system, nor image files will be.

# Rectangle Button

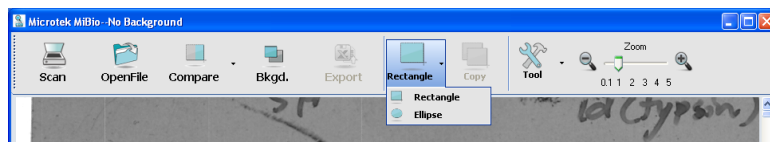
Rectangle button allow users to select an area as an analysis factor in a scanned or imported image. There are two kinds of drawing tools that can be used. They are Rectangle and Ellipse tools. Please take note that the rectangle or ellipse graphs you drew will not appear in the image of the exported and saved file. They are just tools used to select the area to be analyzed.

## Rectangle Button

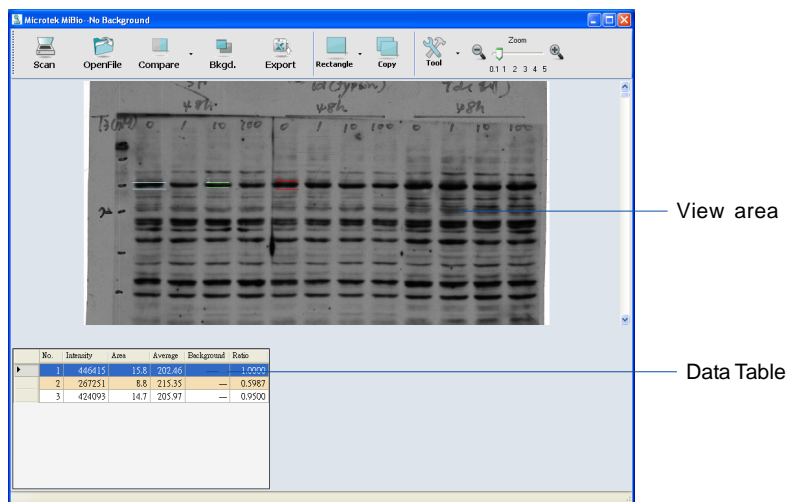
This tool button allows user to select an area in a rectangle shape as an analysis factor.

To draw a rectangle,

1. Click the Rectangle button and select "Rectangle" in the MiBio control panel.



2. Move your cursor (mouse) to the place on the image in the View area which you want to analyze. Use the left button of the cursor to draw a rectangle as big as you want. drawn rectangle will be bordered in red lines.
3. Once the rectangle is formed, the corresponding analysis data will appear in the Data Table below.
4. Repeat the step 2 until you finish all selections.



To delete the drawn rectangle,

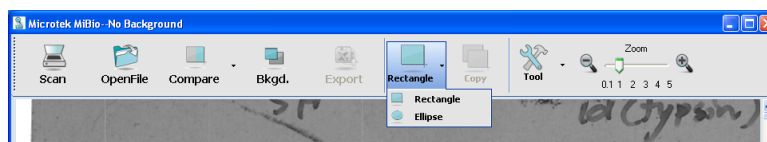
1. Click to highlight the rectangle you want to delete. The selected rectangle will be bordered in red lines.
2. Press the Delete or Back Space button to delete the selected rectangle. The corresponding data to the same rectangle in the Data Table will be removed at the same time.

## Ellipse Button

This tool button allows user to select an area in a ellipse shape as an analysis factor.

To draw an ellipse,

1. Click the Rectangle button and select "Ellipse" in the MiBio control panel.



2. Move your cursor (mouse) to the place on the image in the View area which you want to analyze. Use the left button of the cursor to draw an ellipse as big as you want. The drawn ellipse will be bordered in red lines.

- Once the ellipse is formed, the corresponding analysis data will appear in the Data Table below.
- Repeat the step 2 until you finish all selections.



To delete the drawn ellipse,

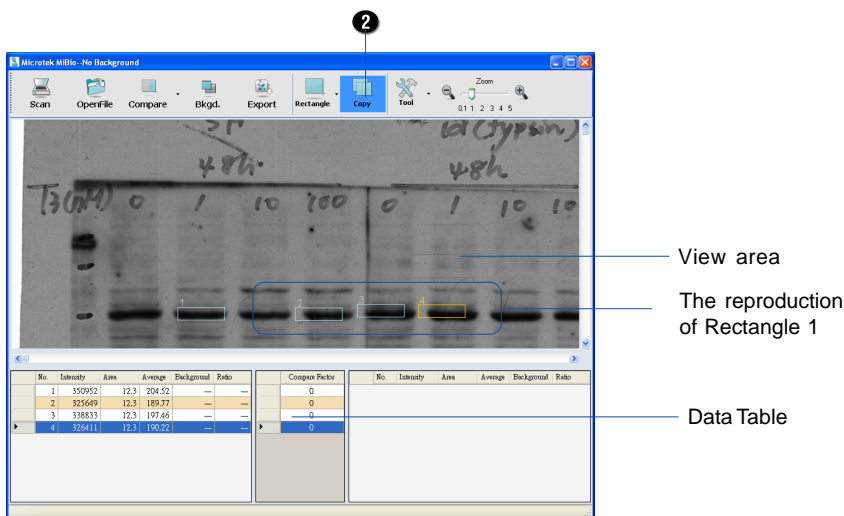
- Click to highlight the ellipse you want to delete. The selected ellipse will be bordered in red lines.
- Press the Delete or Back Space button to delete the selected ellipse. The corresponding data to the same ellipse in the Data Table will be removed at the same time.

# Copy Button

This tool button allows user to reproduce the same size and shape of an area as the one selected by the last time as an analysis factor.

To make a copy of the previous rectangle or ellipse,

1. Refer to the previous sections to use either the Rectangle or Ellipse tool to select the area where you want to analyze.
2. Click the Copy button in the MiBio control panel.
3. Move your cursor (mouse) to the place on the image in the View area which you want to analyze. Click the left button of the cursor and you will see that the same size and shape of a graph (either a rectangle or ellipse) is formed, which is border in red lines, on the image.
4. The corresponding analysis data of the graph will also appear in the Data Table below.
5. Repeat the step 3 until you finish all selections.



To delete the copied rectangle or ellipse,

1. Click to highlight the copied rectangle or ellipse you want to delete. The selected rectangle or ellipse will be bordered in red lines.
2. Press the Delete or Back Space button to delete the selected rectangle or ellipse. The corresponding data to the same rectangle or ellipse in the Data Table will be removed at the same time.

# Tool Button

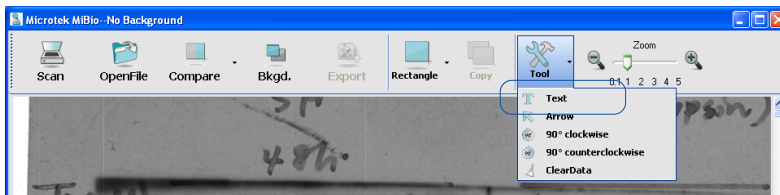
This button offers you several commenting, adjustment and deleting tools to manipulate the scanned or imported image in the View Area and the data in the Data Table.

## Text

This tool button can be used to write notes on the pointed image.

To use it:

1. Click the Tool button and then select "Text".

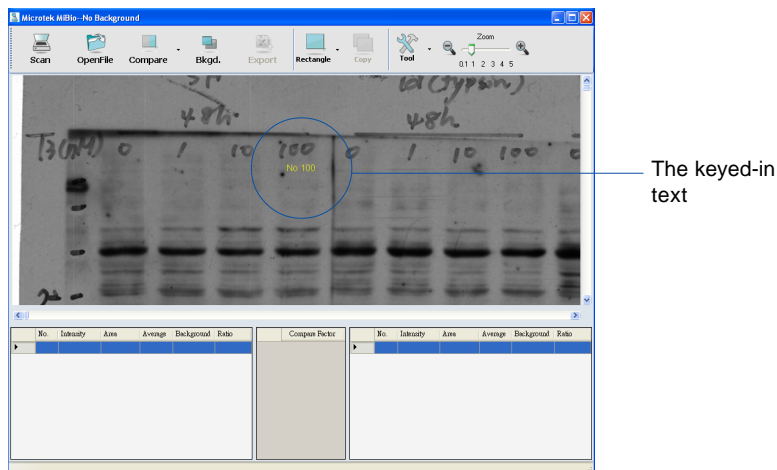


2. Point the cursor onto the place where you want to place the notes and click the left button of the cursor. A window named TextBox pops up on the screen and then you can start writing there.





- When done, click the OK button. You will see the notes appeared on the image.



To delete the text,

- Click to highlight the text you want to delete. The selected text will be bordered in blue lines.
- Press the Delete or Back Space button to delete the selected text. A confirmation window appears on the screen to ask for the final decision. Click the Yes button and the selected text will be removed from the screen by the system.

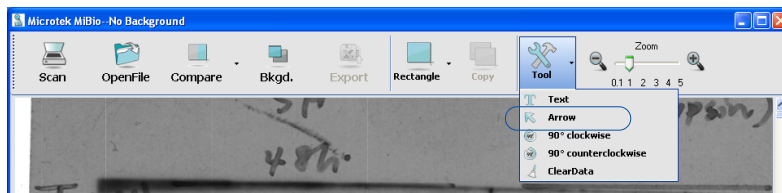


## Arrow

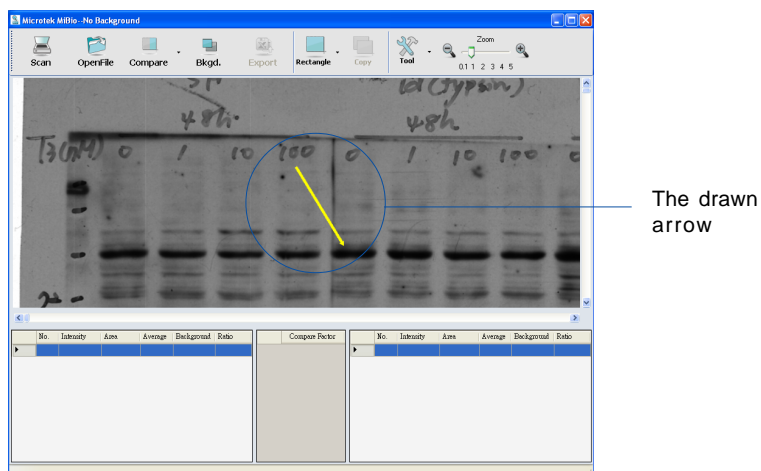
This tool button can be used to draw an arrow on the pointed image.

To use it:

1. Click the Tool button and then select "Arrow".

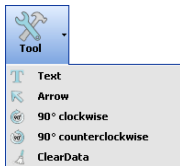
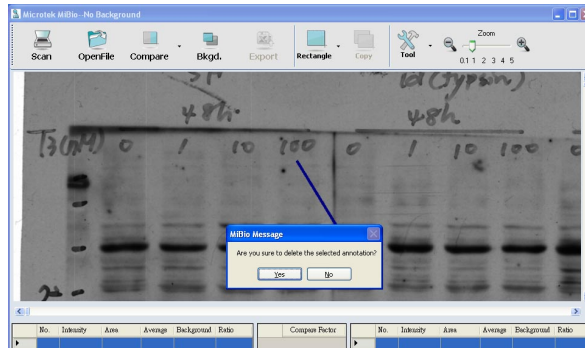


2. Point the cursor onto the place where you want to draw an arrow. Click the left button of the cursor to start drawing.



To delete the arrow,

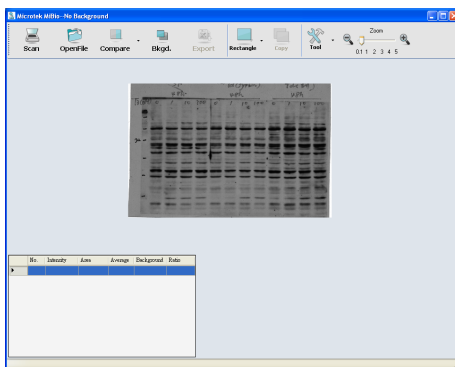
1. Click to highlight the arrow you want to delete. The selected arrow will be bordered in blue lines.
2. Press the Delete or Back Space button to delete the selected arrow. A confirmation window appears on the screen to ask for the final decision. Click the Yes button and the selected arrow will be removed from the screen by the system.



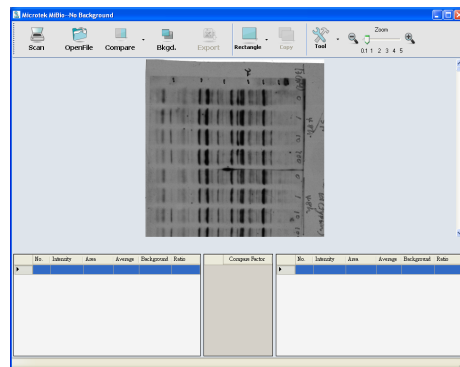
## 90° Clockwise

This tool button can be used to rotate the scanned or imported image 90 degrees in a clockwise direction.

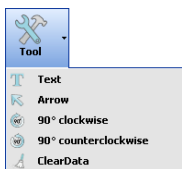
To use this tool, click the Tool button and then select "90° Clockwise". Immediately, the image in the View Area is rotated vertically in a clockwise direction.



The original image



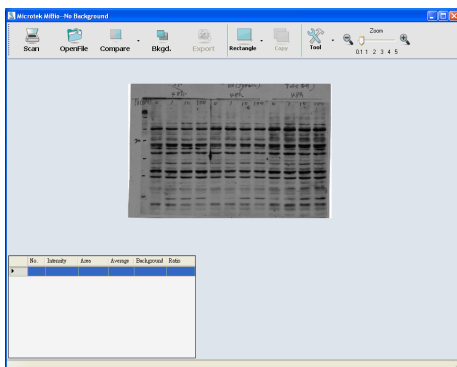
The image after being rotated



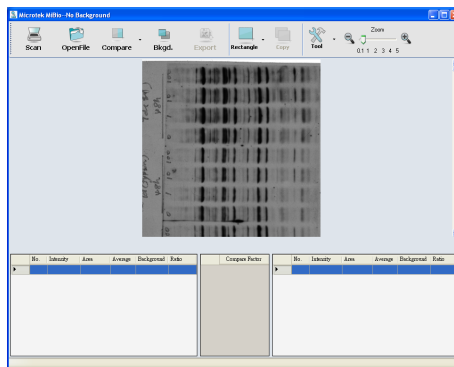
## 90° Counterclockwise

This tool button can be used to rotate the scanned or imported image 90 degrees in a counter clockwise direction.

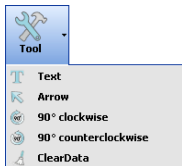
To use this tool, click the Tool button and then select "90° Counterclockwise". Immediately, the image in the View Area is rotated vertically in a counterclockwise direction.



The original image



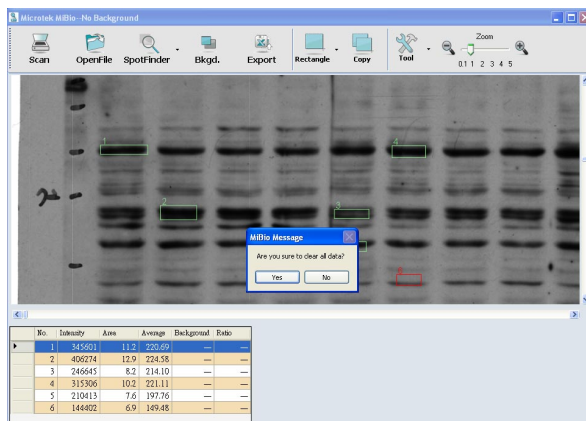
The image after being rotated



## Clear Data

This tool button can be used to remove the image and all the data from the View Area and the Data Table.

To use this tool, click the Tool button and then select "ClearData". A confirmation window pops up on the screen to ask for the final decision. Click the Yes button and all the image and data will be deleted by the system.

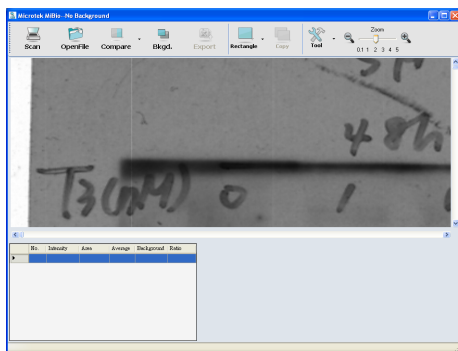


# Magnify Sliding Bar

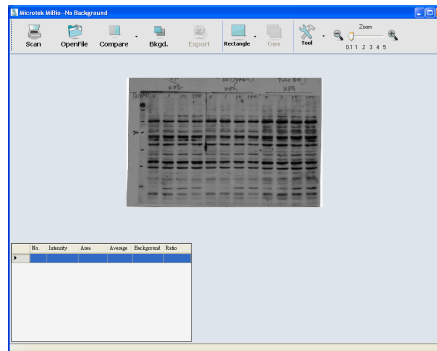
The Magnify sliding bar lets you zoom in (magnify) and zoom out (reduce) your view of the image. Only your view of the preview image is changed; the actual size of the image remains unaffected.

To zoom in (magnify), click the left button of the cursor (mouse) on the slide bar, hold and move the bar toward the right direction. The size of the image in the View area will be enlarged.

To zoom out (reduce), click the left button of the cursor (mouse) on the slide bar, hold and move the bar toward the left direction. The size of the image in the View area will be shrank.



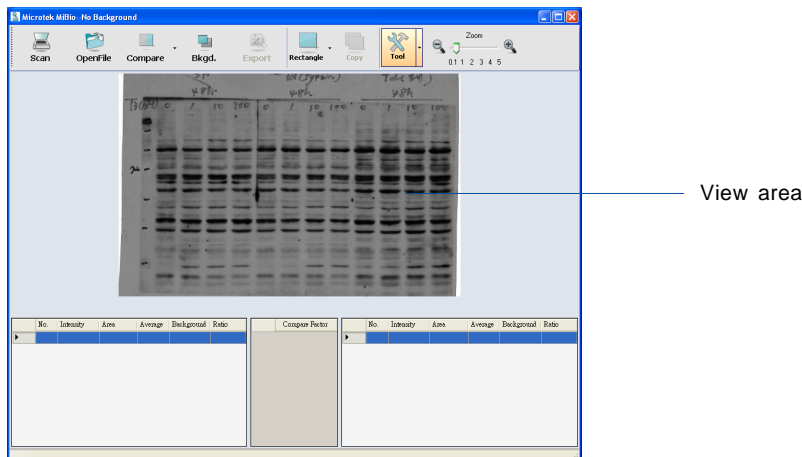
The image with the zoom-in effect



The image with the zoom-out effect

# View Area

It is an area where the scanned or imported image displays. You can increase the size of the view area to see more detail in your image.



# Data Table

It is a table containing analysis data information which corresponds to the area selected on the image in the View area. Each column represents different value of data information.



1. No.: It is ordered by the sequences of rectangles or ellipses drawn.
2. Intensity: Demonstrates the intensity of the selected band to be analyzed.
3. Area: Displays the size of the selected area. The measurement unit is square millimeter.
4. Average: Demonstrates the average value of the grayscale of the selected area.
5. Background: Displays if there is background value set as a comparing and analyzing factor.
6. Ratio: Uses the first selected band as a comparing and analyzing factor, compares other selected bands with the factor, and then generates the ratio number.

