

EasyFig: tutorial

Version 1.0

09/01/18

Author: Benoit Aigouy

Table of Contents

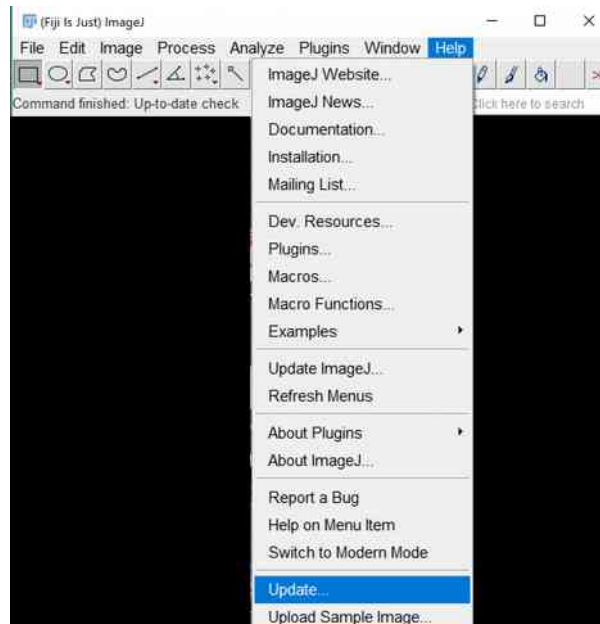
1) Install EasyFig.....	4
1.1) Install as a FIJI plugin.....	4
2) User Interface.....	7
2.1) Quick overview of the EasyFig interface.....	7
2.2) Quick description	7
2.3) Magnification buttons.....	8
3) Imports.....	11
3.1) Importing files : Drag and drop.....	11
3.2) Importing files via the EasyFig menu.....	12
3.3) Importing files from ImageJ/FIJI.....	12
4) Load/Save EasyFig files.....	14
4.1) Load .ezf Files.....	14
4.2) Save .ezf files.....	14
5) Exports.....	15
5.1) Direct exports.....	15
5.2) Export to ImageJ.....	16
6) Selections.....	17
6.1) The basics of object selection in EasyFig.....	17
7) Menus.....	20
7.1) File.....	20
7.2) Edit.....	21
7.3) Journals.....	22
7.4) Keep For Later.....	22
7.5) Checks.....	23
7.6) FiguR.....	23
7.7) Help.....	23
8) Dynamic menus	25
8.1) « Figure » objects parameters.....	25
8.1.1) « Size » tab.....	25
8.1.2) « Labels » tab.....	26
8.1.3) « Layout » tab (only available in free mode).....	26
8.1.4) « Misc » tab.....	27
8.2) « Row » objects parameters.....	27
8.2.1) « Size » tab.....	27
8.2.2) «Labels» tab.....	28
8.3) « Panel/Montage » objects parameters.....	28
8.3.1) «Layout» tab.....	28
8.3.2) «AutoCrops» tab.....	29
8.4) « Image/ImagePlus/Stack/Graph/Vector Image » objects parameters.....	30
8.4.1) «Labels» tab.....	30
8.4.2) «Crop» tab.....	30
8.4.3) «Orientation/Rotation» tab.....	31
8.4.4) «Stack/Video» tab.....	31
8.4.5) «Misc» tab.....	32
9) Figure layout.....	33
9.1) Change figure size.....	33
9.2) Change layout.....	34
10) Annotating Images.....	37
10.1) Add letters, labels and scalebar to an image.....	37
10.2) Add ROIs/Floating text labels to an image.....	38

10.3) Convert ROIs to crop or insets (Picture In Picture, PIP).....	39
11) Keep for later.....	42
12) Manipulate image channels.....	44
12.1) Select or create an image with channels.....	44
12.2) Activate/inactivate channels.....	45
12.3) Change channel color.....	46
13) Use drag and drop to build a figure efficiently.....	47
13.1) Add inset using drag and drop.....	47
13.2) Add an image to a row.....	48
13.3) Create a new row from an image/remove an image from a row.....	50
13.4) Create a panel, add it to a row and change its layout.....	51
13.5) List of DND options and their use.....	54
14) Add inset/Picture in picture (PIP) from the local drive.....	56
15) Journal styles.....	57
15.1) Select a journal style.....	57
15.2) Create a new journal style.....	57
16) Editorial Checks.....	59
16.1) Check Size.....	59
16.2) Check style.....	61
16.3) Check Fonts.....	62
16.4) Check line arts.....	64
16.5) Check Text.....	66
16.6) Check Graphs.....	67
17) FiguR.....	68
17.1) Install and configure R (required for FiguR to work).....	68
17.2) Launch FiguR.....	70
18) Settings.....	71
18.1) Undos/Redos.....	71
18.2) Shortcuts.....	72

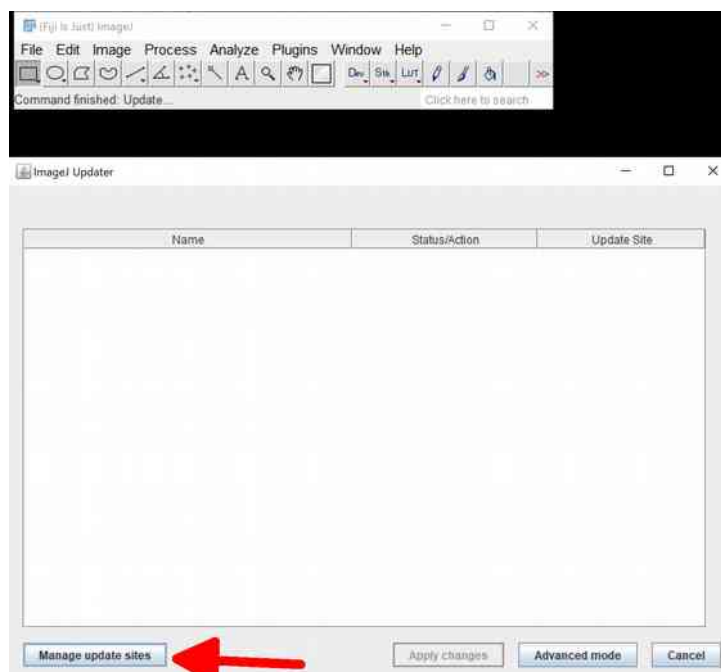
1) Install EasyFig

1.1) Install as a FIJI plugin

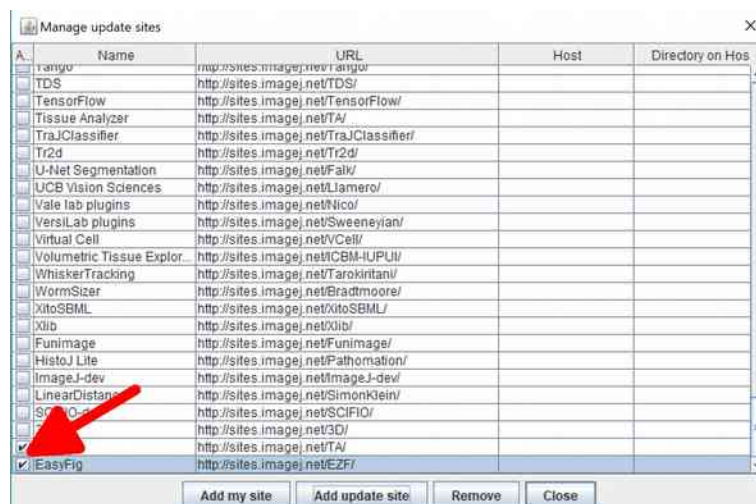
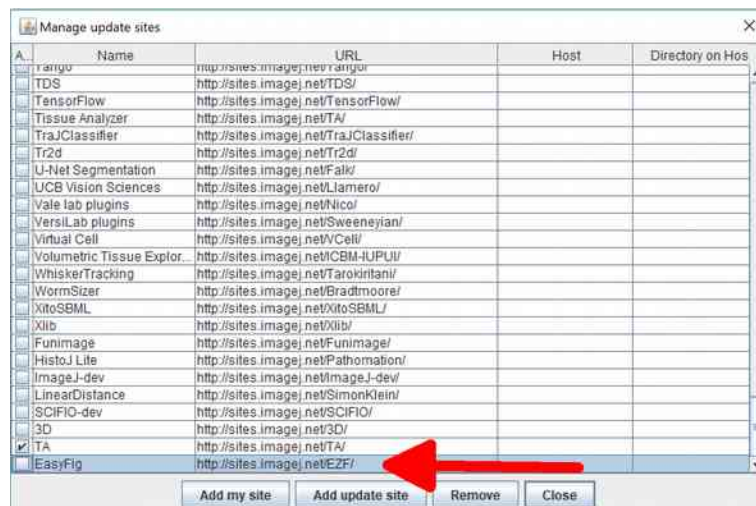
Download and install the latest FIJI available for your OS (from <http://fiji.sc/>). Launch FIJI.



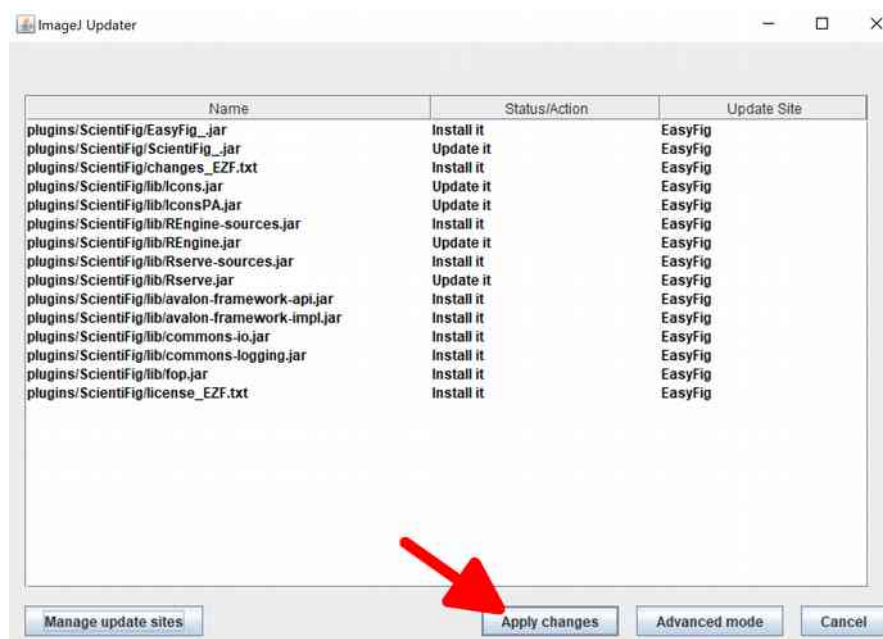
Press Help > Update...



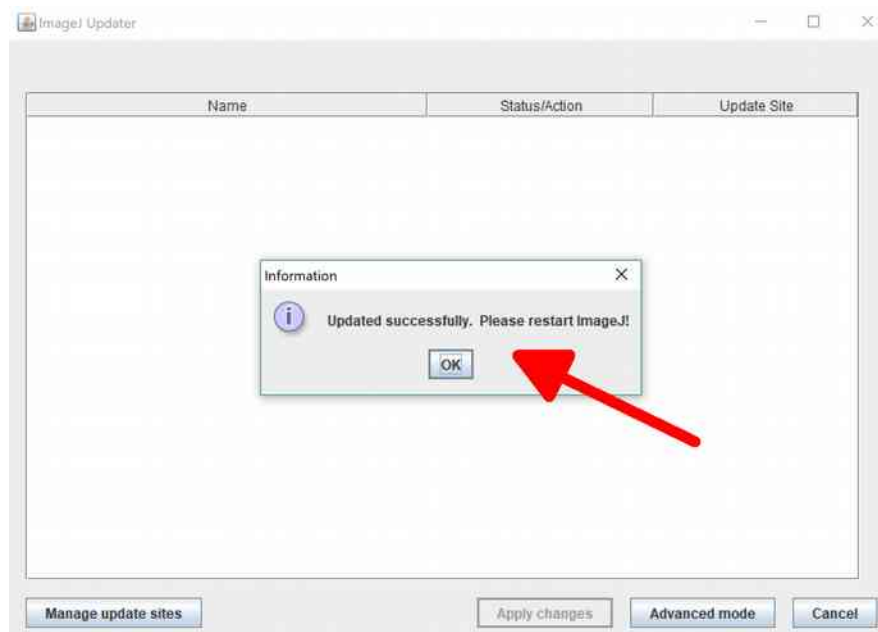
Press Manage update sites



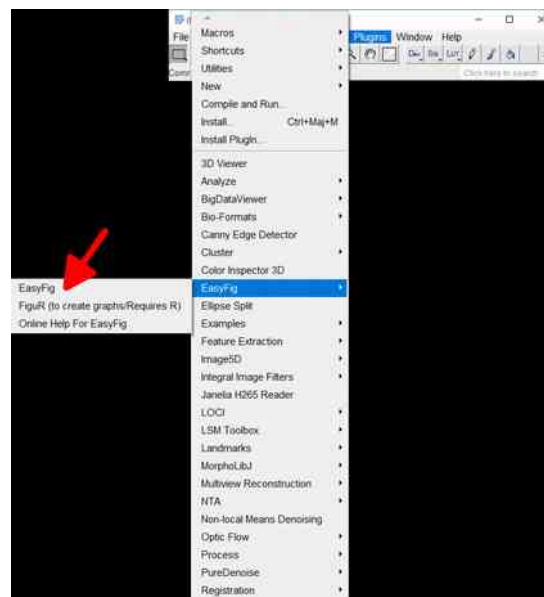
locate EasyFig and tick it (or press « add update site » and add type in the URL field the following address : <http://sites.imagej.net/EZF/>)



Fiji should offer EasyFig install. Press « apply changes ».



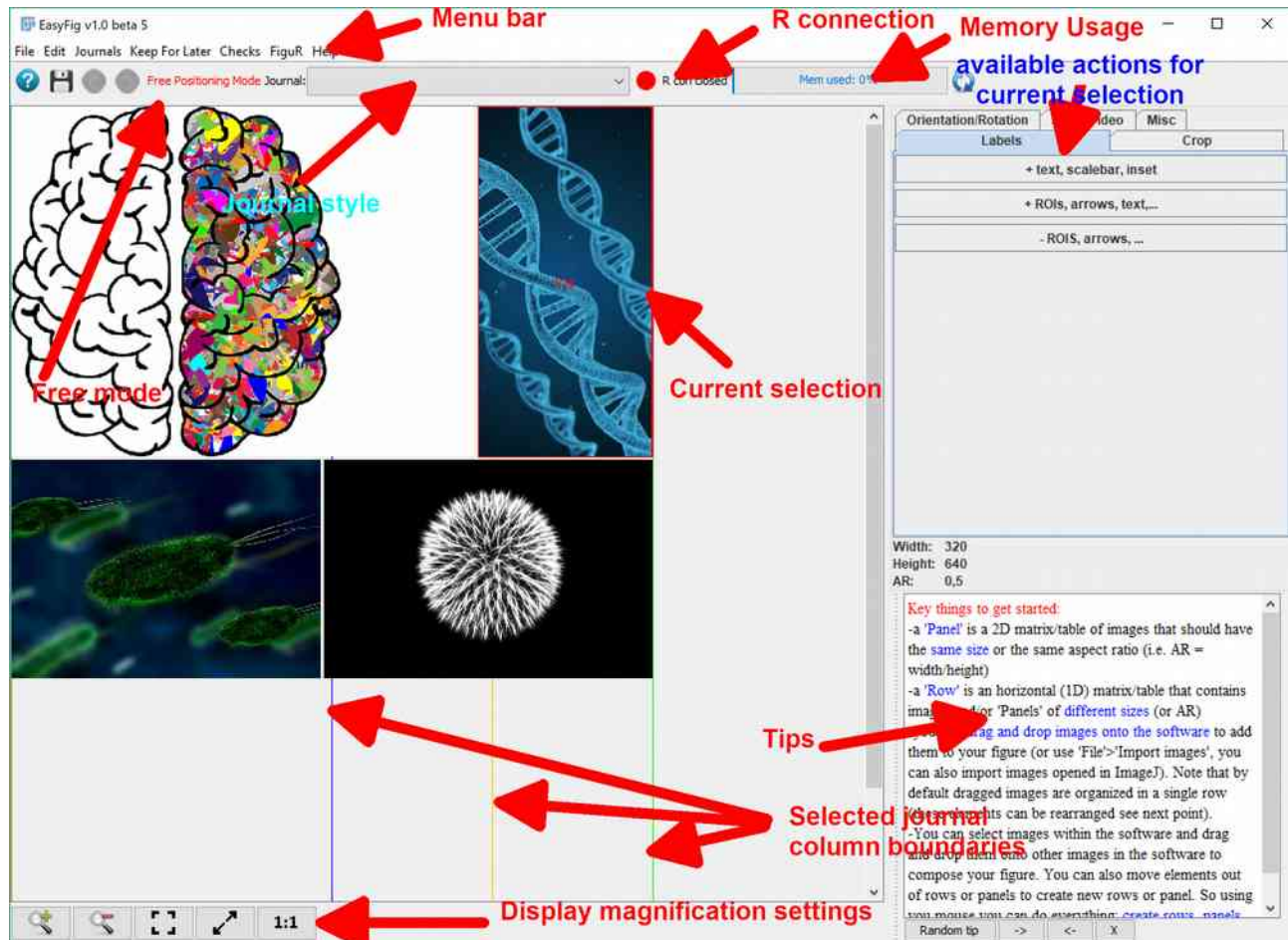
Press « ok » and restart FIJI



Launch FIJI again, press « Plugin>EasyFig>EasyFig » to launch the software

2) User Interface

2.1) Quick overview of the EasyFig interface



2.2) Quick description

Journal style : Select the journal style there.

Free mode : if you press this the « figure » objects will be manually positionned by the user. The layout of the « figure » content is handled by EasyFig. If you do not activate this mode all the layout is handled by EasyFig.

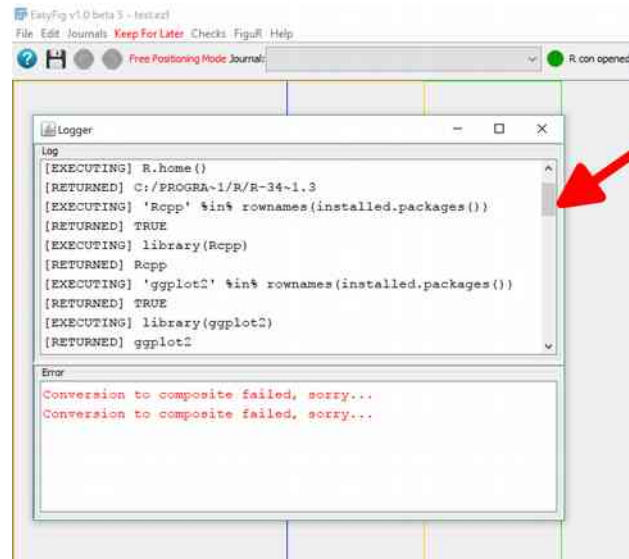
Tips : displays various EasyFig tips.

R connection : if the icon is red R is not connected, green otherwise.

Display magnification settings : see section « Zooms ».

Menu bar : Please see the « Menus » section

Nb : please note that the content of the « [available actions](#) » depends on the current selection (see the « Dynamic menus » section).



Finally EasyFig also comes with a logger (arrow), that logs messages sent by EasyFig and FiguR (black text) as well as errors (red text).

2.3) Magnification buttons

zoom in



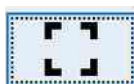
press this button to zoom in.

zoom out



press this button to zoom out.

best fit

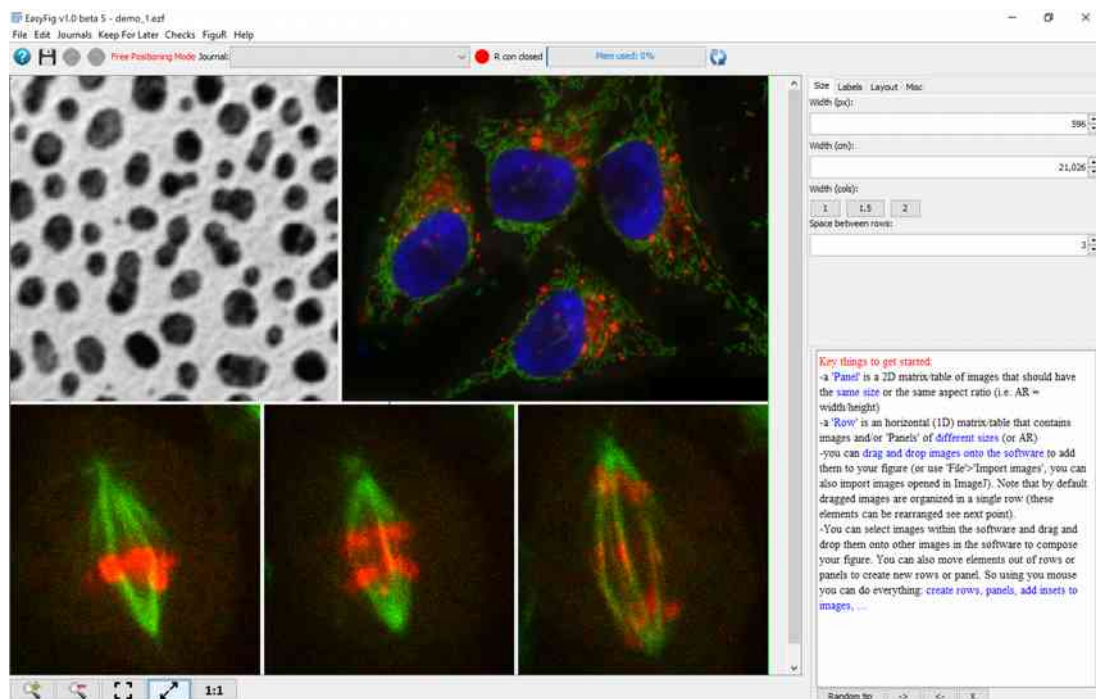
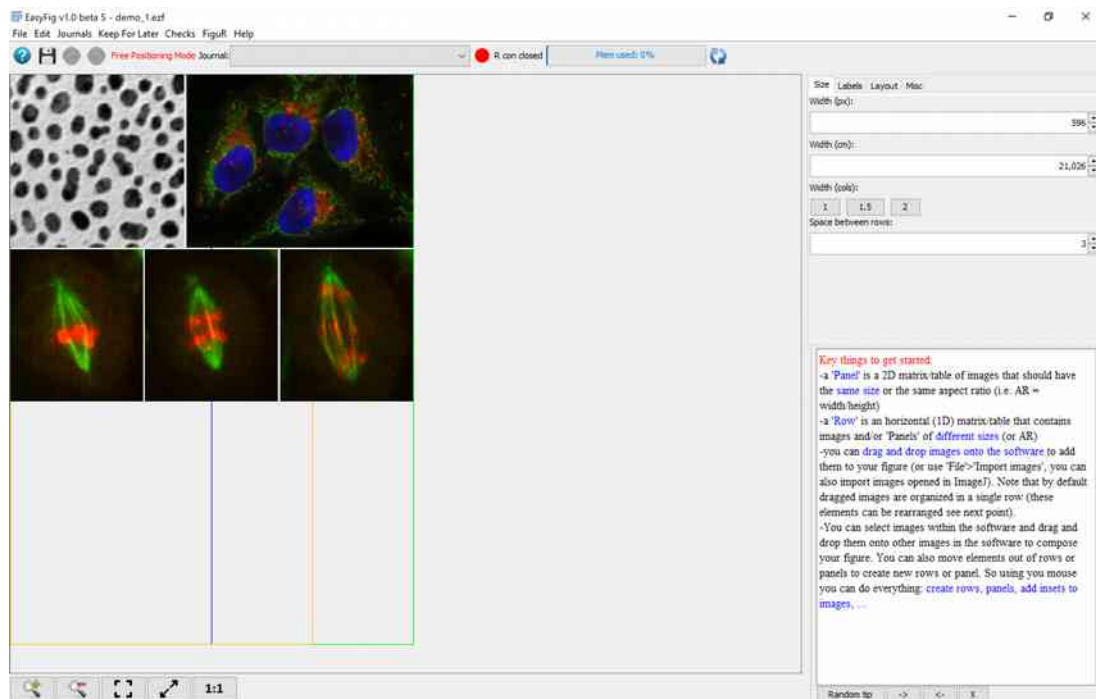


press this button to fit the figure in width and in height to the field of view.

best fit width or height



press this button to fit the figure in width to the field of view.



press again the same button to fit height. Note that the green rectangle indicates page size for the selected journal.

reset zoom

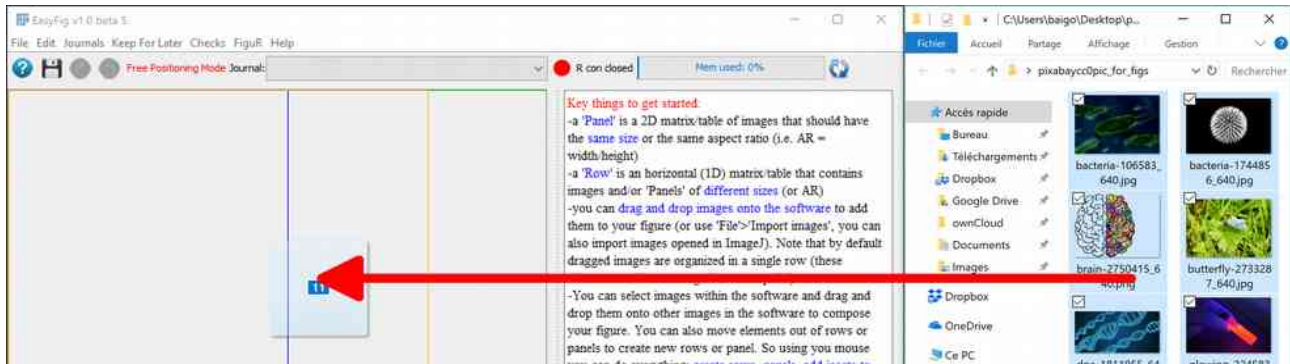


press this button to restore default magnification

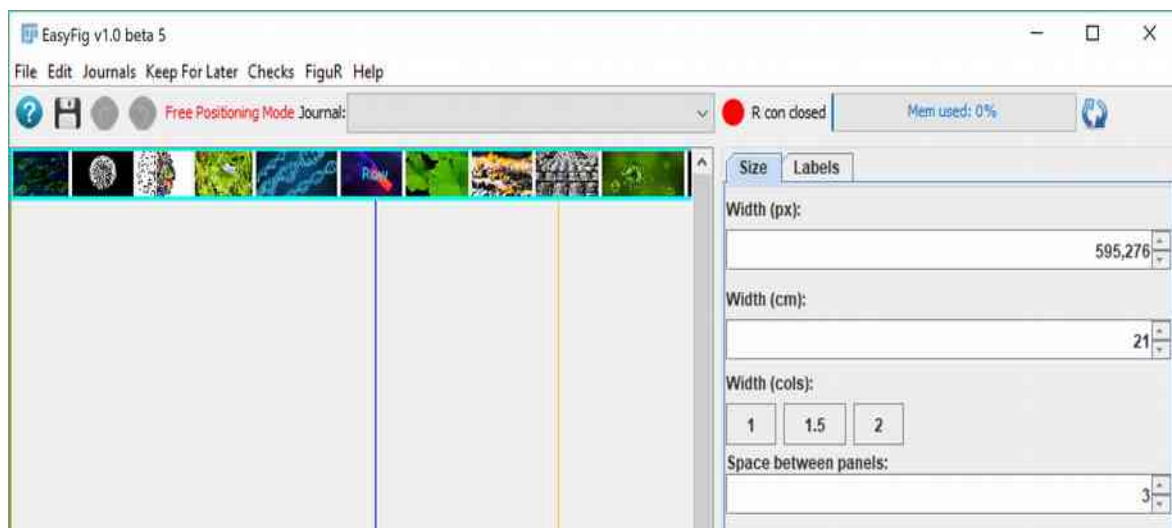
3) Imports

The best/easiest way to import files in EasyFig is to use drag n drop.

3.1) Importing files : Drag and drop

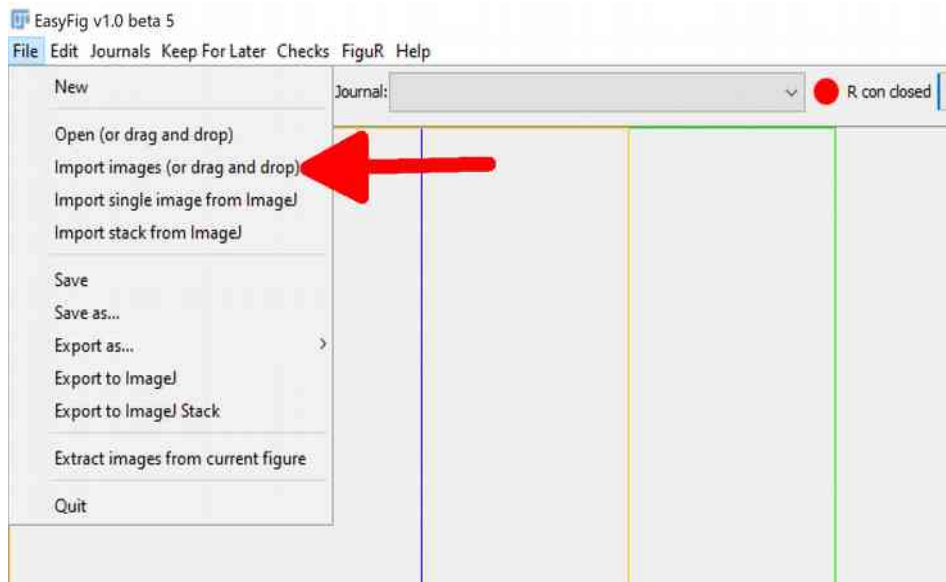


To load image(s) with EasyFig, you can select images in a folder then drag and drop them anywhere onto EasyFig.

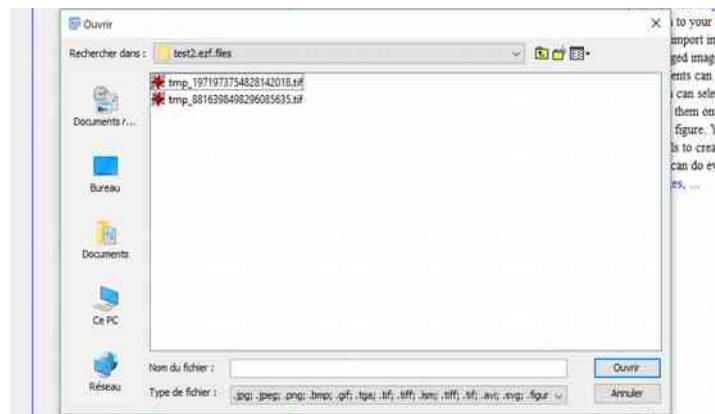


Dragged images are added in a single row by default, organisation of these images can be changed later on.

3.2) Importing files via the EasyFig menu

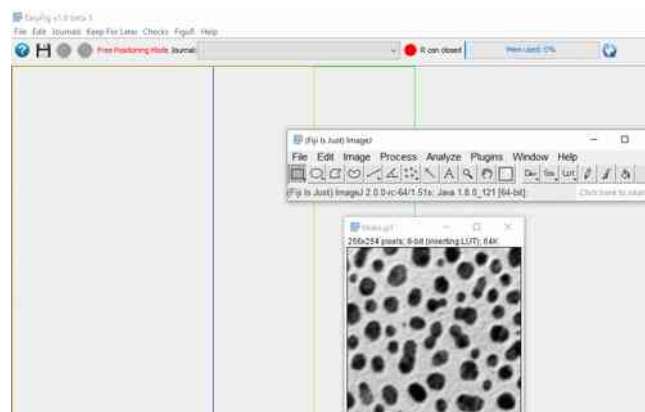


Press « File > Import images »

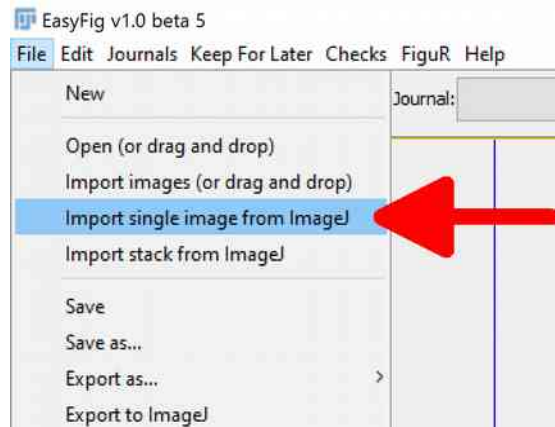


A dialog opens to select files. Supported formats are : jpg, tif, png, bmp, tga, lsm, svg, figur, gif.

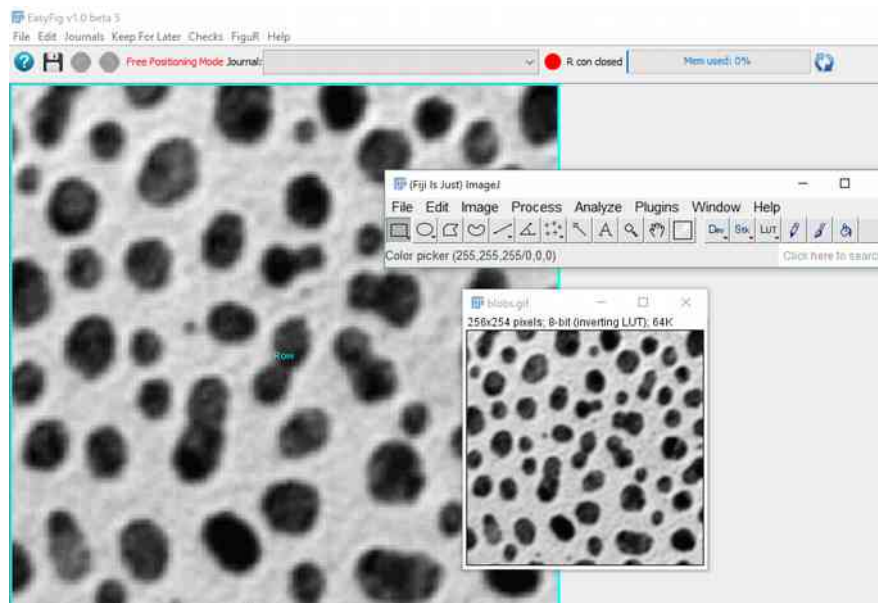
3.3) Importing files from ImageJ/FIJI



Open an image (here I opened 'blobs.gif') or a stack in ImageJ



Select « import single image from ImageJ » if you want to import the image currently viewed. Alternatively select « import stack from ImageJ », if you want to be able to activate/deactivate channels, change channel color, or browse stack.



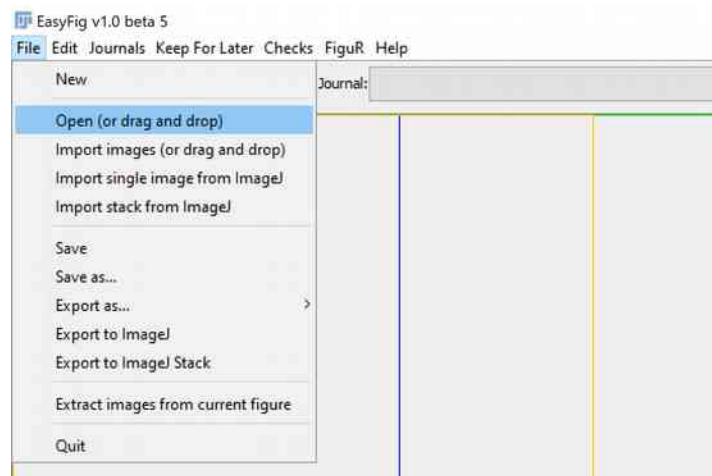
The image has been succesfully imported in EasyFig.

4) Load/Save EasyFig files

EasyFig has its own native format (.ezf). It is very important to always save the figure in this format as it is the only format that can be reedited by EasyFig, all other export formats cannot be further edited. EasyFig is backward compatible with ScientiFig, i.e. it can read ScientiFig files (.yf5m). The reverse is not true, ScientiFig cannot read .ezf files.

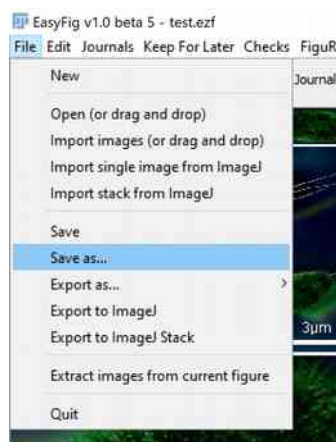
4.1) Load .ezf Files

The simplest way to load an ezf or a yf5m file is to drag and drop it onto EasyFig.



Alternatively, press “File > Open”

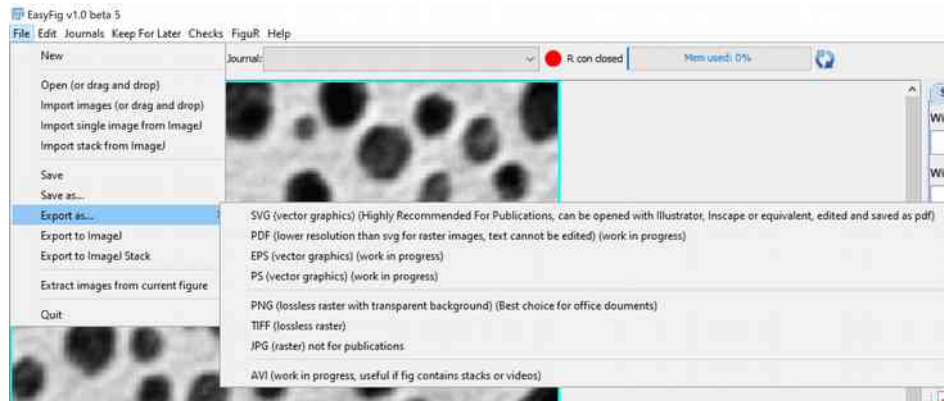
4.2) Save .ezf files



Press “File > Save as...” to save an ezf file. Note that if the figure contains stacks, they will be saved in a folder with the same name as the ezf file with an extra .files. Please always store the .ezf and the .ezf.files folder together, otherwise stack data will be lost. You can also use the Ctrl/Cmd+S shortcut to save.

5) Exports

5.1) Direct exports



To export a Figure, press « File>Export as... » and select one of the export formats available. Please note that exported files cannot be further edited by EasiFig, so it is particularly important to « save » your figures (see Section Saving figures).

EasyFig can export figures as raster/bitmap images :

- as **PNG** images with support for background transparency),
- as flattened **TIF** images (lossless compression, good for scientific publication)
- as **JPG** (lossy compression, good for talks but not for publications)

EasyFig can export figures as vector images :

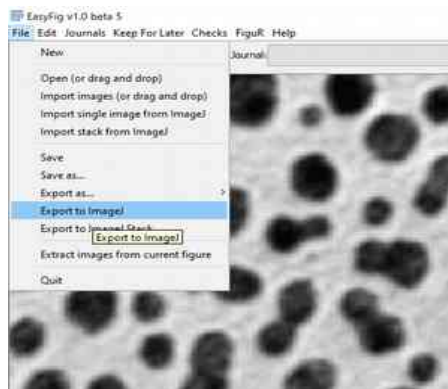
- SVG** can be further edited even text by your favorite vector graphics editor (e.g. Illustrator, Inkscape, ...). **I highly recommend this format for vector export.**
- PDF**
- EPS** (encapsulated postscript)
- PS** (postscript)

EasyFig can export figures as videos (this only makes sense if the Figure contains Stack or videos) :

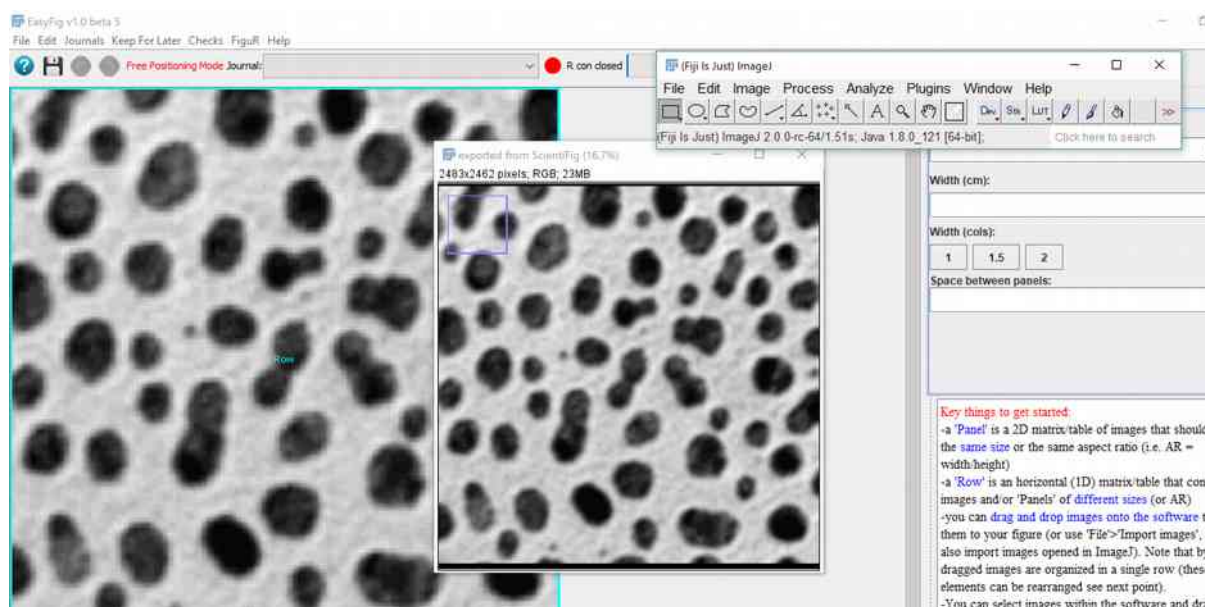
- AVI** (you can set fps and dpi).

Also Figures can also be **exported to ImageJ**. See below.

5.2) Export to ImageJ



Press File > Export to ImageJ



The image is opened in ImageJ as an ImagePlus

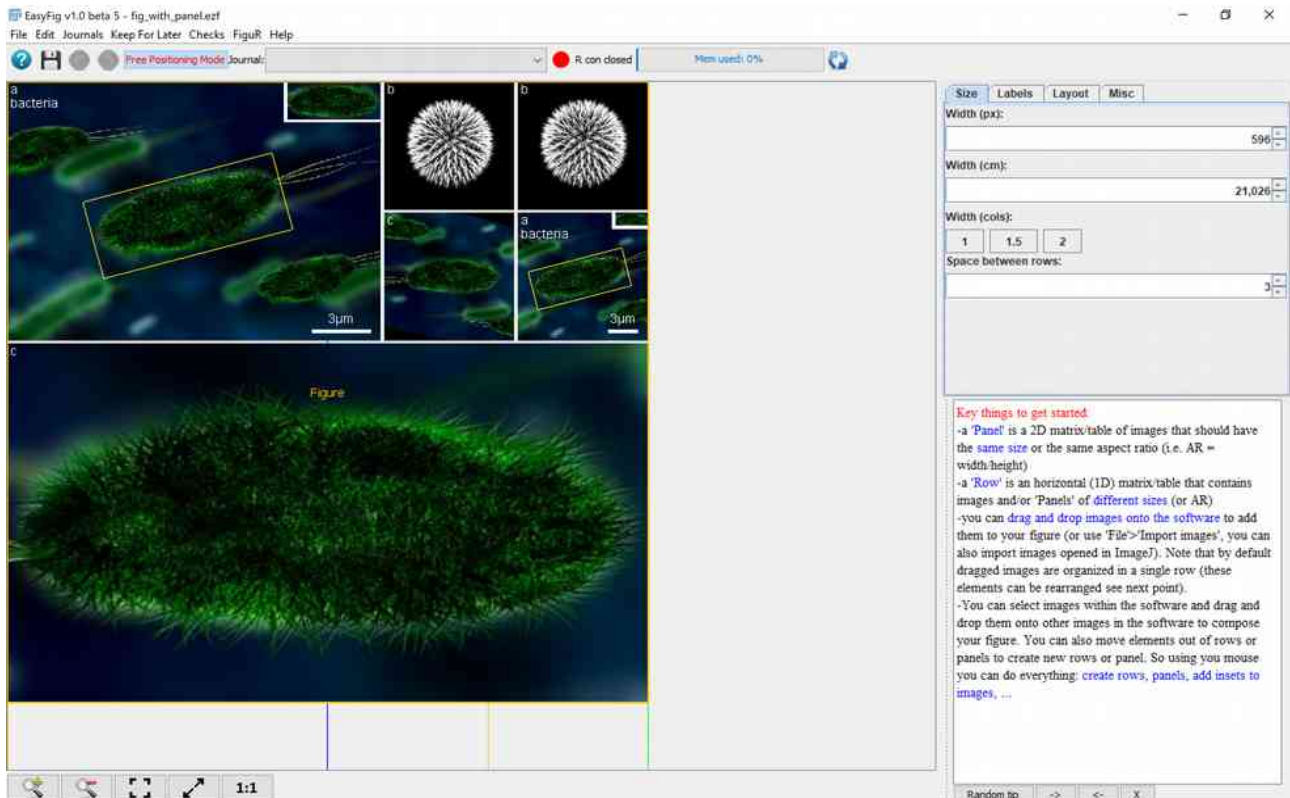
Nb : the figure can also be exported as an ImageJ stack (provided the figure itself contains stacks).
To do so press File > Export to ImageJ Stack

6) Selections

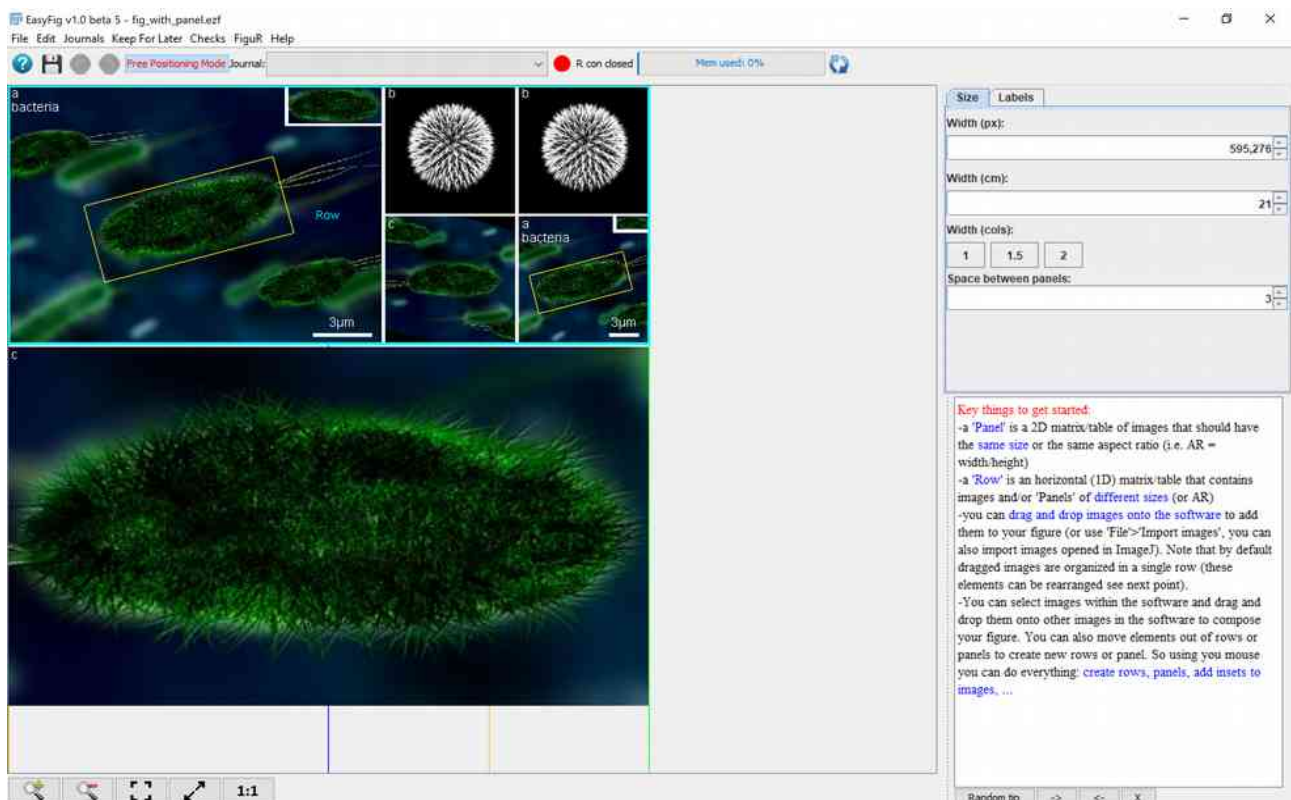
EasyFig is an object based software. Below are the various EasyFig objects you can manipulate as well as informations about their selection.

6.1) The basics of object selection in EasyFig

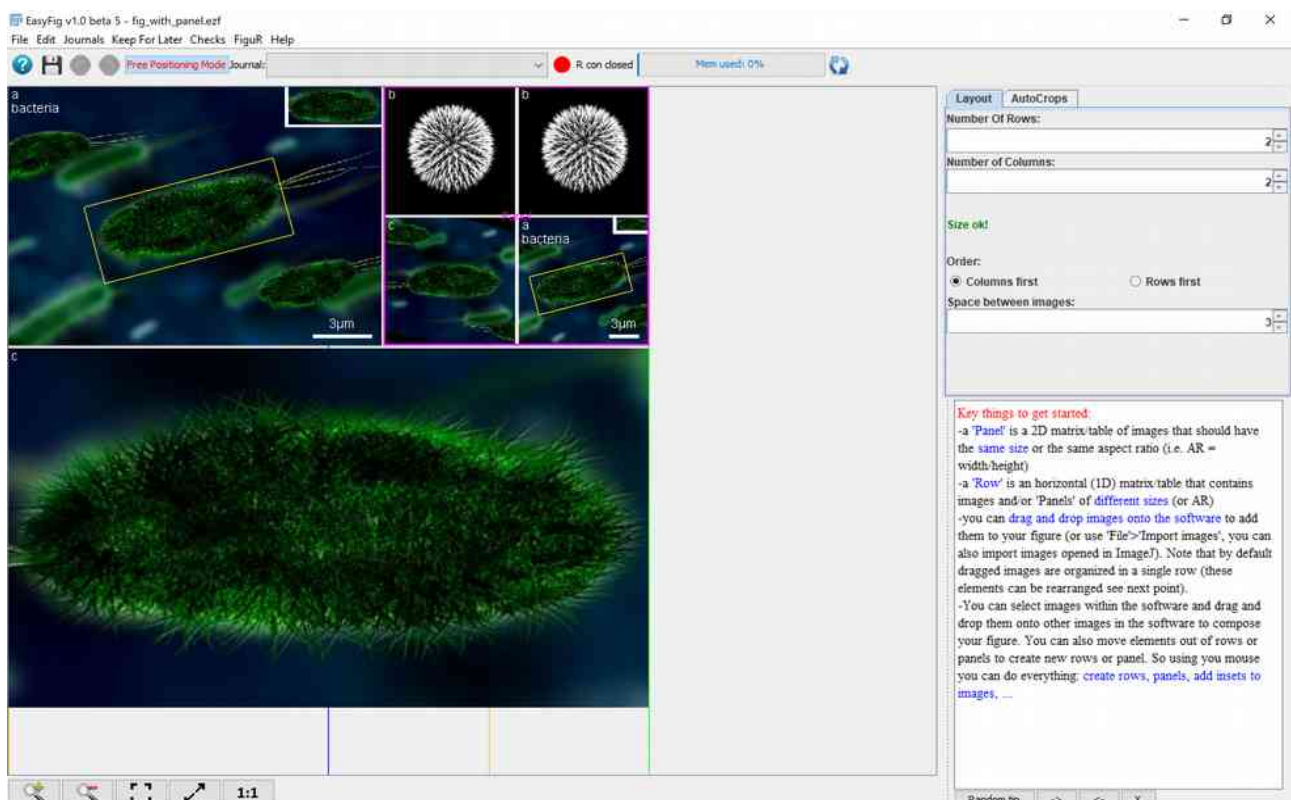
Reset the selection by clicking outside of the figure



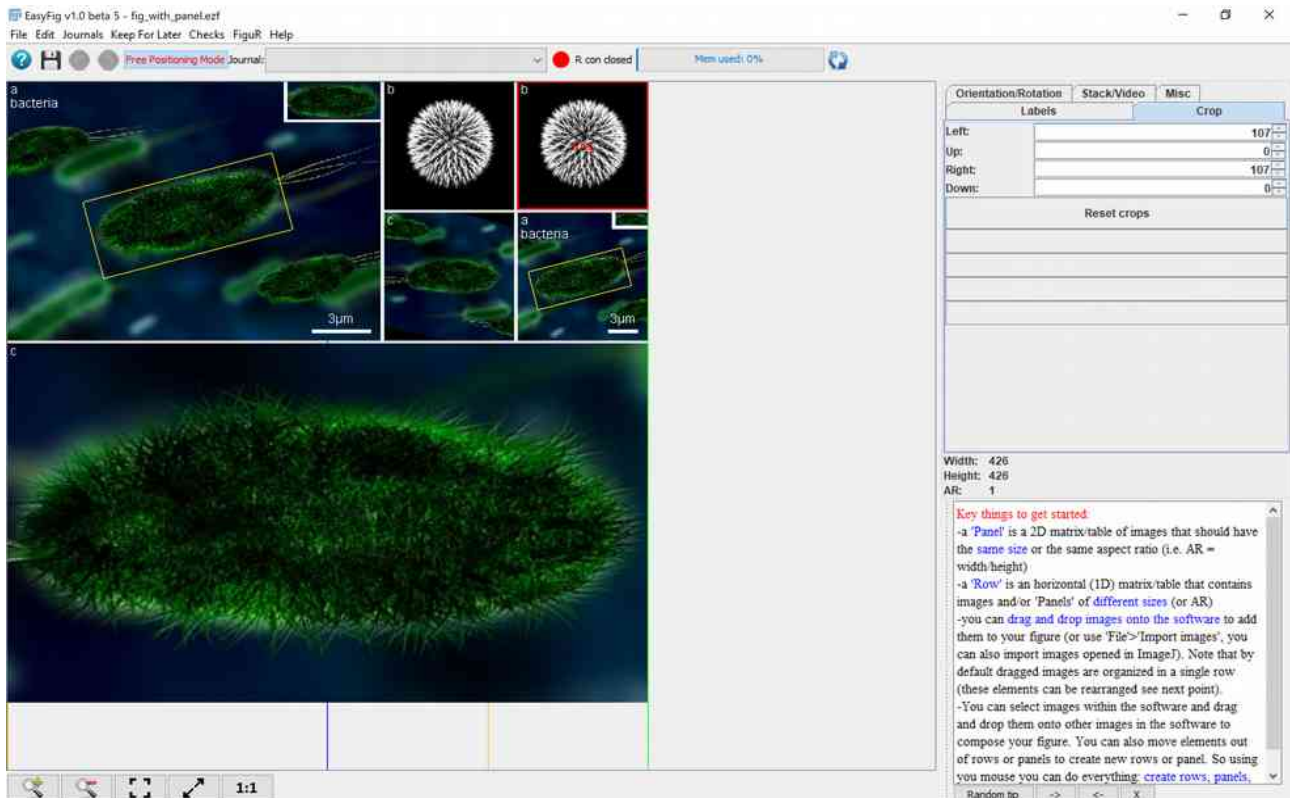
Clicking the upper right image selects the figure, highest level container in EasyFig (note the yellow color of the selection and the « Figure » keyword drawn in the center of the figure object)



Clicking the upper right image again again selects a « Row », a lower level container in EasyFig. (Note the cyan color of the selection and the « Row » keyword drawn in the center of the row object).



Clicking the upper right image again selects a « Panel/Montage », yet another lower level container. (Note the magenta color of the selection and the « Panel » keyword drawn in the center of the Panel object).



Clicking the upper right image again selects the image, the lowest level object in the figure hierarchy, i.e. the image. (Note the red color of the selection and the « Img » keyword drawn in the center of the image object).

Note that the options in the panel on the right of the software change with the selection. Options will also change depending on whether it is a single selection or multiple selection.

Multiple selection is made by maintaining the Ctrl/Cmd key while clicking.

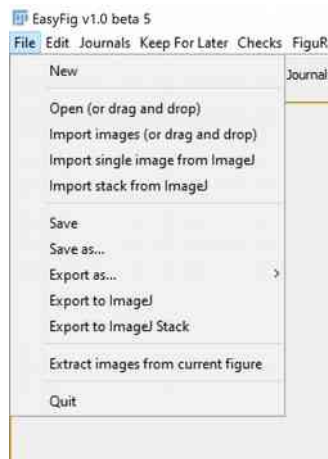
Summary of the hierarchy of image objects in EasyFig and their associated color selection scheme :

hierarchy :	Figure	>	Row	>	Panel/Montage	>	Image
Color when selected :	Orange	>	Cyan	>	Magenta	>	Red

7) Menus

7.1) File

Please find below a complete description of the file menu and its functions :



New : Creates a new empty figure.

Open : prompts a dialog to load .ezf (EasyFig) and .yf5m (ScientiFig) files. You can also simply use drag and drop (DND).

Import images : prompts a dialog to import raster/bitmap or vector images to EasyFig. You can also use DND (please also see the « Import : how to load Images » section).

Import single image from ImageJ : First load an image using ImageJ, select the channels you want to display, the contrast settings, the slice and or frame you want to insert in a figure. Then press this button to import the current view to EasyFig. (Nb : reference to the original file is not saved so you will not be able to change settings, such as contrast or Zslice, or anything else...).

Import stack from ImageJ : First load a stack or a video in ImageJ (it can be a virtual stack). Then press this button and the ImagePlus will be stored in your figure. You will be able to edit its channels, channel color, select Z slice or frame.

Save : Saves a .ezf file, the native file format for EasyFig. Please always save your figures in this format as this is the only file format EasyFig can reedit and modify.

Save As : Same as save but you will be asked to specify the output file name.

Exports As : allows you to export the current figure to numerous file formats (please also see the « Export » section).

Export to ImageJ : export the current Figure to ImageJ as an ImagePlus.

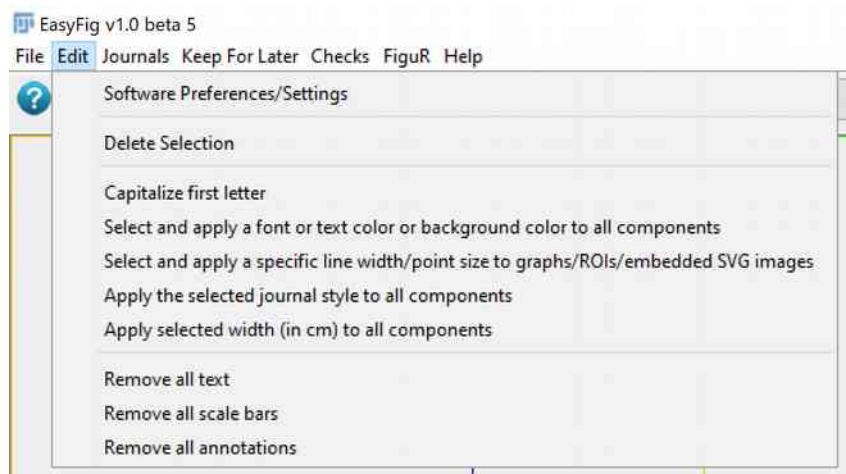
Export to ImageJ stack : export the current Figure to ImageJ as an ImagePlus containing an ImageStack.

Extract Images from current figure : export images embedded in the current figure to a folder.

Quit: quits EasyFig.

7.2) Edit

Please find below a complete description of the « edit » menu and its functions :



Software Preferences : Lets you set EasyFig preferences. You can for example active Undos/Redos there.

Delete Selection : Deletes the current selection from the current figure (Note that you can also use the keyboard Del/Suppr key to achieve the same)

Capitalize first letter : force the first letter of selected image text fields to be upper or lower case.

Select and apply a font or text color or background color to all components : Can be used to set font, text foreground and background colors for all the text fields associated to the figure images.

Select and apply a specific line width/point size to graphs/ROIs/embedded SVG images : set line arts point line width for graphs, svg images and user drawn ROIs.

Apply the selected journal style to all components : Applies the current journal style to all images in the figure.

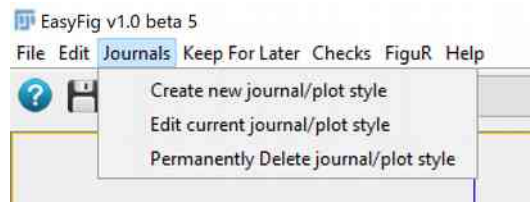
Remove all text : removes all text fields from the current figure (can be used to clean figure for talks).

Remove all scale bars : removes all scale bars (can be used to clean figure for talks).

Remove all ROIs : removes all ROIs and floating text from the current figure (can be used to clean figure for talks).

7.3) Journals

Please find below a complete description of the « Journals » menu and its functions :



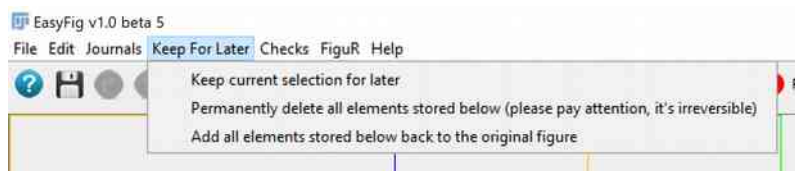
Create new journal/plot style : lets you create a new journal style (please also see the « Journal styles » section).

Edit current journal/plot style : Edit the current journal style settings.

Permanently Delete journal/plot style : Delete a journal style (in fact the file is just renamed as .old, so if you change your mind you can recover it manually).

7.4) Keep For Later

Please find below a complete description of the « Keep For Later » menu and its functions :



Keep current selection for later : Use this if you don't want the selection to appear in the current figure, but you nevertheless want to keep it, for example because you plan to use it later. The content of the « Keep For Later » menu is stored in the .ezf file. « kept for later » selected objects appear in this menu as new buttons with an icon (see **Custom content** below).

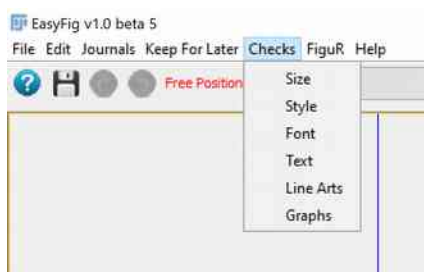
Permanently delete all elements stored below (please pay attention, it's irreversible) : Removes all elements from the « Keep For Later » menu (if you press this button the content of this menu is erased and therefore no longer saved in the .ezf file), so be careful with this.

Add all elements stored below back to the original figure : Adds back all the content of this menu back to the figure.

Custom content : The « Keep For Later » menu may contain custom content you added. Each content is made available as a button, if you press this button the content of the button will be added back to the figure.

7.5) Checks

Please see the « Editorial Checks » section.



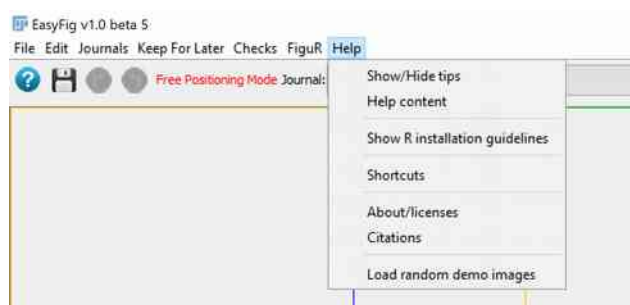
7.6) FiguR

Please see the « FiguR » section.



7.7) Help

Please find below a complete description of the « Help » menu and its functions :



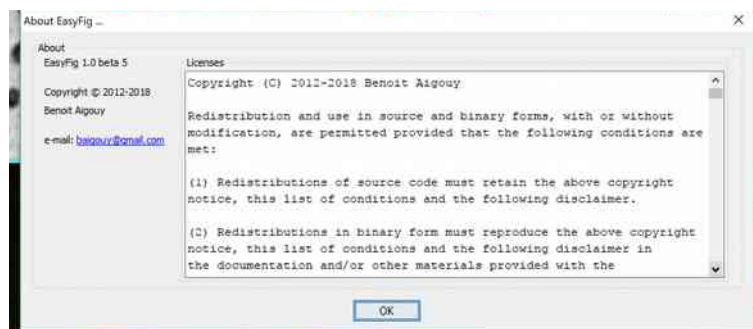
Show/Hide tips : Hides EasyFig tips widow if visible, shows it otherwise.

Help content : Shows this help file.

Show R installation guidelines : Shows how to install R and configure it to communicate with FiguR (see also the « FiguR » section).

Shortcuts : Shows EasyFig shortcuts. Custom shortcuts can be defined there. Shortcuts can be reset there if anything goes wrong (see also the « Settings » section).

About/licenses : Shows the licence file for EasyFig and its assocaited libraries. If you disagree with these licences please delete EasyFig from your computer.



Citations : Shows citations you can use in your manuscript if you like EasyFig.

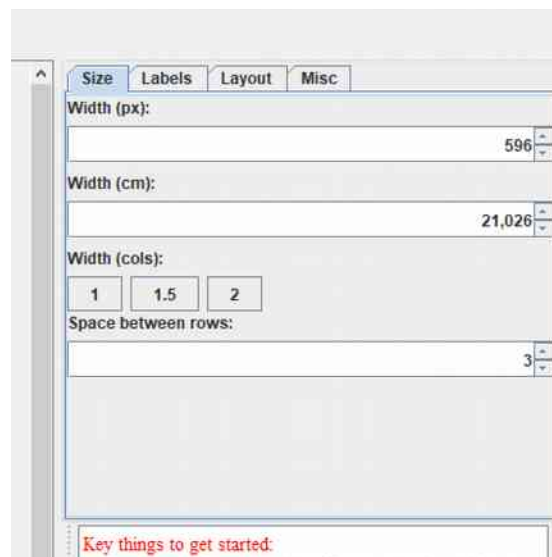
Load random demo images : Random images (just for me to do some debugging).

8) Dynamic menus

The content of some right part of EasyFig will change dynamically according to the selection type (see also the « Selections » section).

8.1) « Figure » objects parameters

8.1.1) « Size » tab



Width (px) : sets the size of the selected figure(s) in pixels

Width (cm) : sets the size of the selected figure(s) in cm

Width (cols) : sets the size of the selected figure(s) in journal columns (requires a journal style to be selected). If no journal style is selected 2 cols = 21cm, 1.5 col = 15.75cm and one col = 10.5 cm.

Space between rows : set the space between selected figure(s) rows in pixels

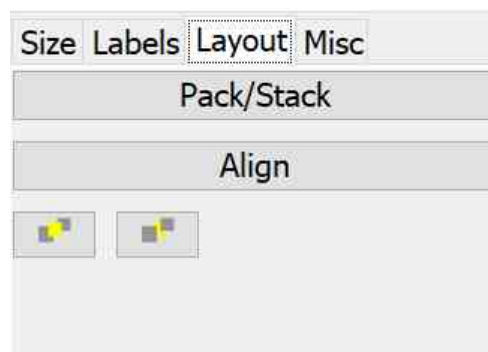
8.1.2) « Labels » tab



1st letter : put the first letter of the selected figure here and press « Enter » or « Update letters » to get your figure letters automatically incremented. Tip : if you put a space instead of a letter then all letters from the selected Figure will be removed.

Add Legend : Adds a text field/legend row at the end of the selected figure (this text row exhibits autowrap) and behaves as a row object.

8.1.3) « Layout » tab (only available in free mode)



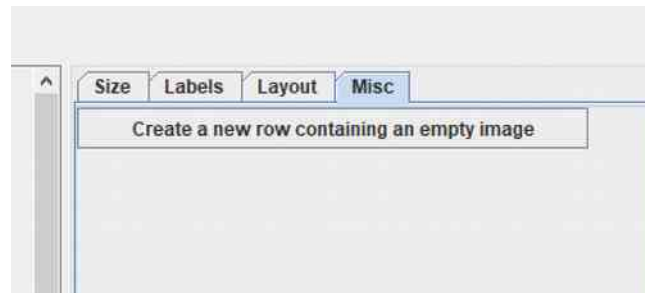
Pack/Stack : select several figures and press this button to « pack » these figures close to each other.

Align : typical align functionality present in several softwares that let you align objects top, bottom, left or right.

bring to front : brings selection to front (in free mode figures can overlap, it is therefore important to know which figure should be drawn on top).

send to back : sends selection to back (in free mode figures can overlap, it is therefore important to know which figure should be drawn on top).

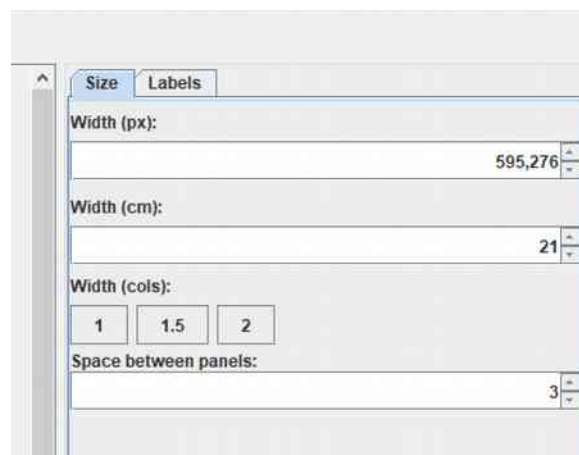
8.1.4) « Misc » tab



Create a Figure or a Row with an empty image : creates a Figure that just contains an empty image. You can for example use this empty image to draw arrows to connect various figures logically.

8.2) « Row » objects parameters

8.2.1) « Size » tab



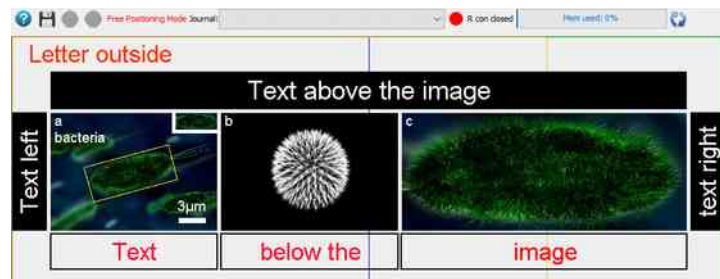
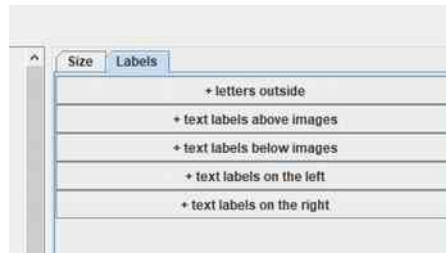
Width (px) : sets the size of the selected row(s) in pixels

Width (cm) : sets the size of the selected row(s) in cm

Width (cols) : sets the size of the selected row(s) in journal columns (requires a journal style to be selected). If no journal style is selected 2 cols = 21cm, 1.5 col = 15.75cm and one col = 10.5 cm.

Space between panels: set the space (in pixels) between panels or image of selected rows

8.2.2) «Labels» tab

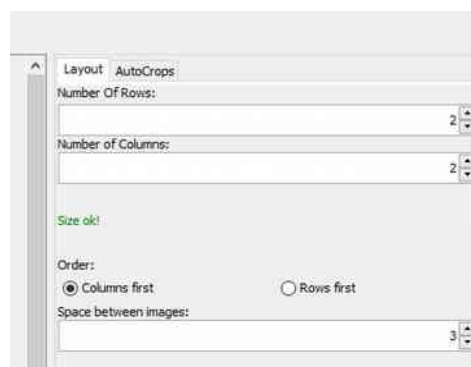


Below are the row specific labels.

- + **letters outside** : adds a letter or some text outside the row.
- + **text labels above images** : add text above a row.
- + **text labels below images** : add text below a row.
- + **text labels on the left** : add text left of row.
- + **text labels on the right** : add text right of row..

8.3) « Panel/Montage » objects parameters

8.3.1) «Layout» tab



Number Of Rows : sets the number of rows of the panel.

Number of Columns : sets the number of columns of the panel.

NB : if $\text{Number Of Rows} * \text{Number of Columns} < \text{number of images contained in the panel}$, no change will be applied to the panel layout and an error message will be displayed. In that case increase the numbers of rows or columns or both until the error message disappears.

Order : defines the order of the images in the panel, i.e. should panels rows be filled before or after panel columns.

Space between images : sets the space (in pixels) between panel images

8.3.2) «AutoCrops» tab



Since **panels** are containers that *should* contain only images of the **same size** (or same **aspect ratio**) but that might not always be the case, « AutoCrops » contains function to automatically crop images so that they end up having same size or same aspect ratio.

Force Same AR : Force all images contained in the selected panel to have a user defined aspect ratio (select a single image of the panel and check its aspect ratio and apply it to the whole panel).

Force Same Width & Height : force all images in the panel to have the same width and height, i.e. have same size (this achieves a similar result as the **Force Same AR** function but is likely to crop the images much more, most often you should prefer the **Force Same AR** function).

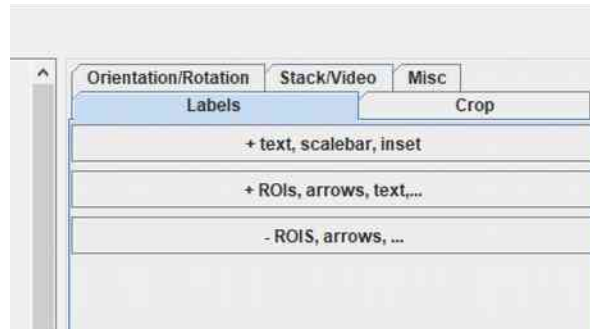
Force Same Height : force all images in the panel to have the same height. This does not mean they will have the same AR, so the panel may still look weird.

Force Same Width : force all images in the panel to have the same width. This does not mean they will have the same AR, so the panel may still look weird.

Reset Crops : resets crops for all images in the panel, useful if you made a mistake.

8.4) « Image/ImagePlus/Stack/Graph/Vector Image » objects parameters

8.4.1) «Labels» tab

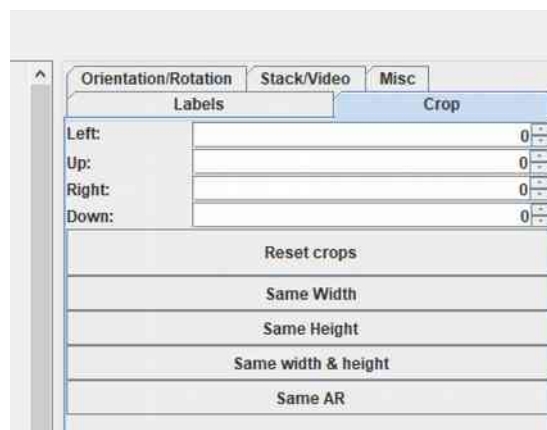


+ text, scalebar, inset : Use this to annotate your image (add letter and text to predefined positions on the image, add scale bars, add/remove insets, set inset size, add undisplayed comments to your image).

+ ROIs, arrows, text,... : Use this to draw ROIs (rectangles, arrows ellipses, ...), visually crop your image, or visually define an inset for the current image.

- ROIs, arrows, ... : Removes all ROIs from the selected images

8.4.2) «Crop» tab



Left : defines by which amount the image must be cropped from the left

Right : defines by which amount the image must be cropped from the right

Up : defines by which amount the image must be cropped from the top

Down : defines by which amount the image must be cropped from the bottom

You can use crops to change image size or aspect ratio, to fit images in a panel. You can use crops to focus on the most interesting region of the image, ... Note that cropped region is still available in EasyFig it is not discarded, it is just not shown.

Reset Crops : resets crops for selected images, useful if you made a mistake.

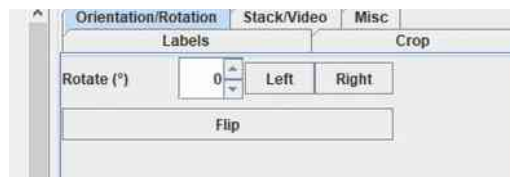
Same Width : force selected images to have the same width.

Same Height : force selected images to have the same height.

Same Width & Height : force selected images to have same width and height.

Same AR : Force selected images contained in the selected panel to have a user defined aspect ratio.

8.4.3) «Orientation/Rotation» tab



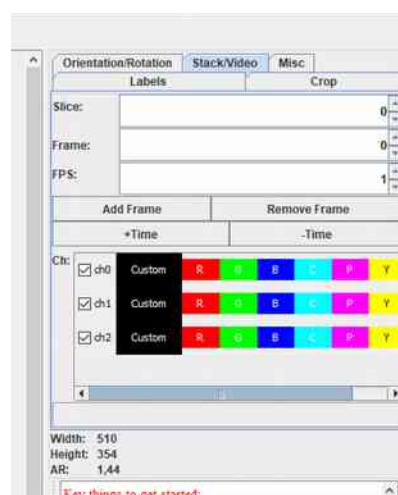
Rotate (°) : Rotates the figure by user defined number of degrees (rotated image is interpolated)

Left : Rotate image by 90° to the left (rotated image is not interpolated)

Right : Rotate image by 90° to the right (rotated image is not interpolated)

Flip : Flip image along the horizontal, vertical axis or both (flipped image is not interpolated)

8.4.4) «Stack/Video» tab



The «Stack/Video» tab only shows if the selected image is an ImagePlus or an ImagePlus stack.

Slice : select the current Z slice/section (NB if your ImagePlus only contains slices but no frames, EasyFig assumes slices are in fact frames).

Frame : Select the current t frame.

FPS : Define the output displayed fps (useful only if the stack containing figure is exported as AVI)

Add Frame : add a frame to the current stack (this should only be used to add label frames to a figure that will be exported as a movie).

Remove Frame : removes a frame from the movie (it is in fact not removed from the ImagePlus but will not be accessible by EasyFig anymore).

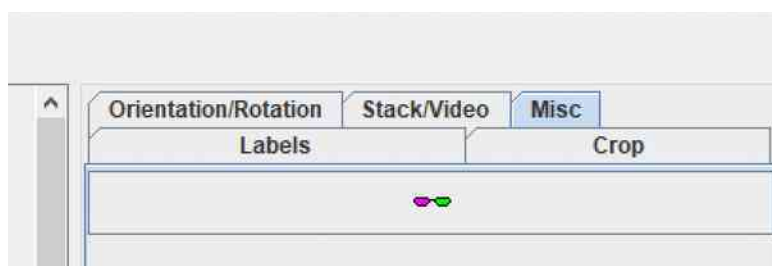
+Time : Adds a time display over a video/stack

-Time : remove time.

Ch : show image channel informations. You can activate/deactivate channels there. You can also change channels color there.

To composite : Convert RGB image to composite image. Most often it is recommended to import ImagePlus/Stack directly from ImageJ.

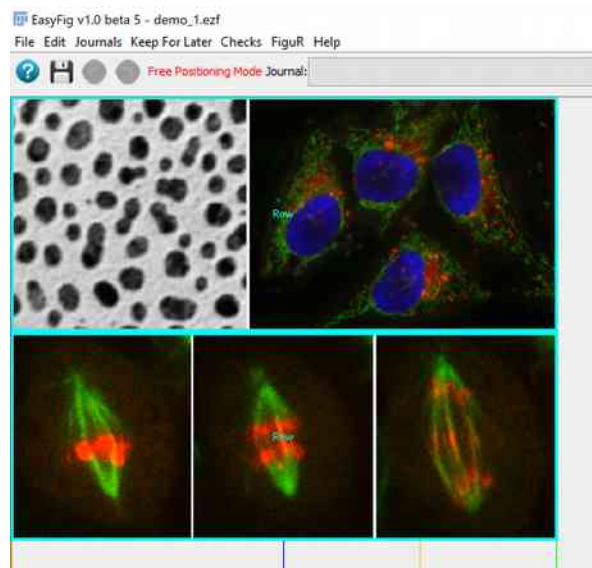
8.4.5) «Misc» tab



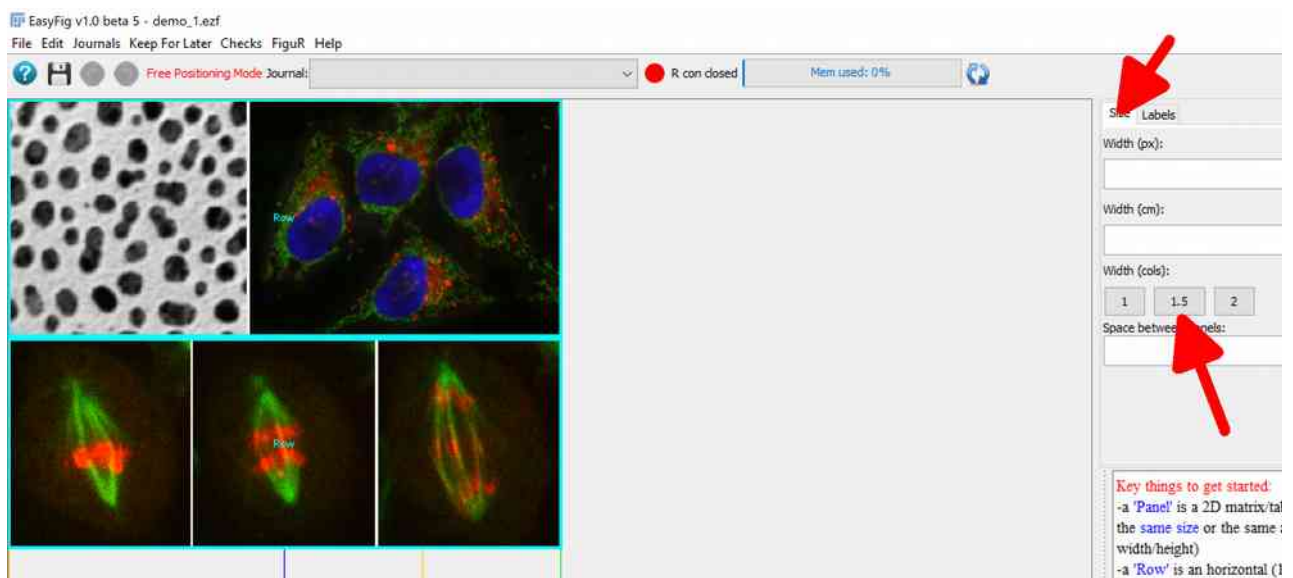
Make The Selected Images Color Blind Friendly/Split Channels : splits the image to individual gray channels and pairwise combinations of channels displayed as magenta and green. This is useful to make the figure color blind friendly.

9) Figure layout

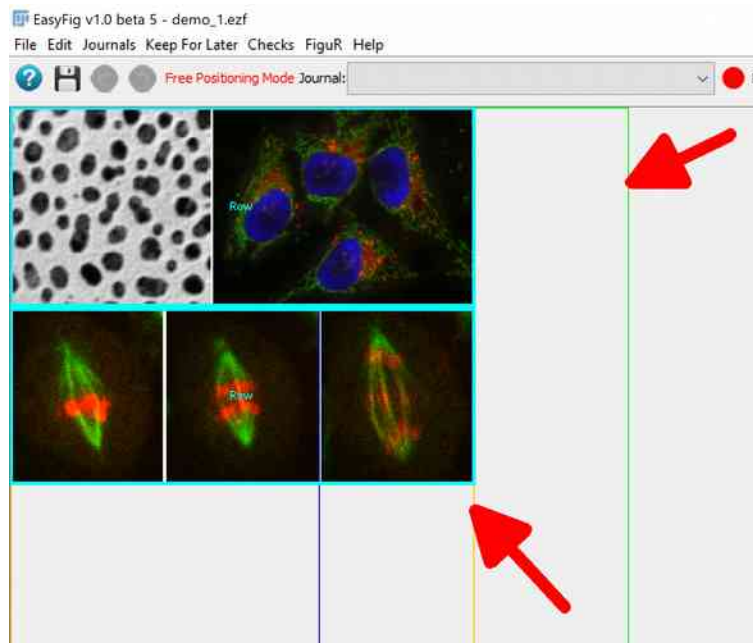
9.1) Change figure size



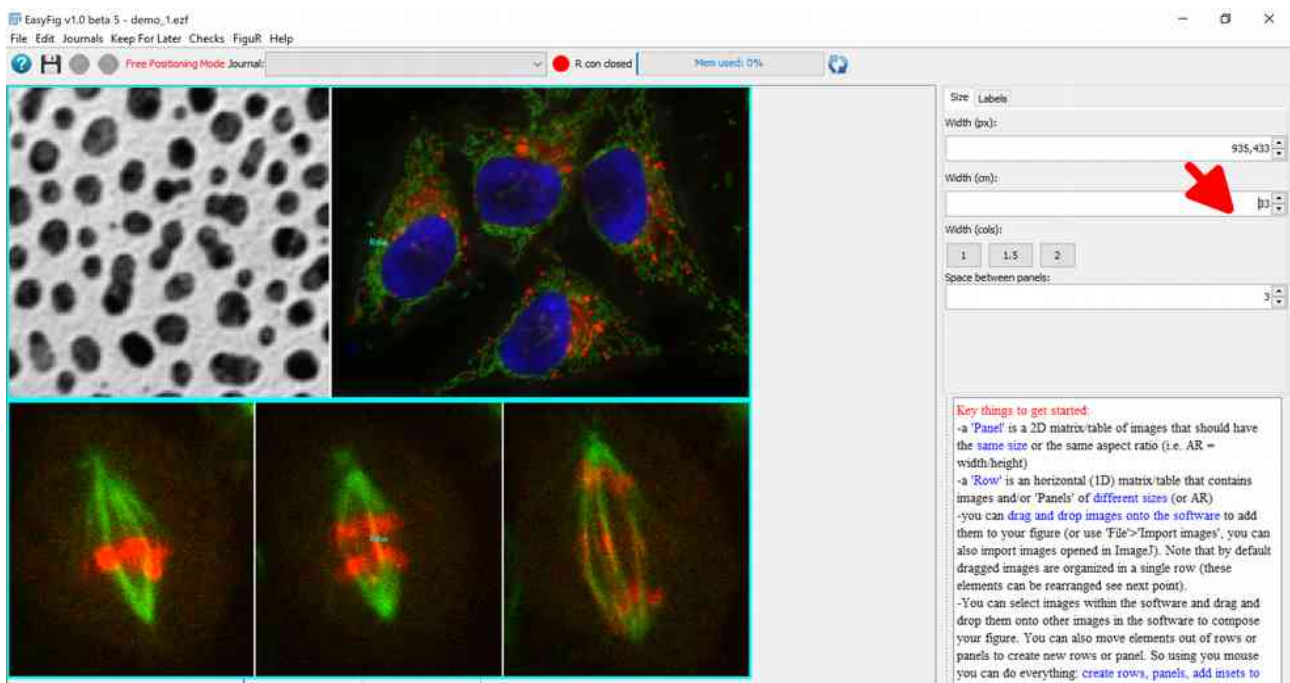
Press ctrl+A to select all the elements of the figure.



Select the « Size » tab. Click on « 1,5 » to set the figure width to 1,5 columns of the selected journal style.



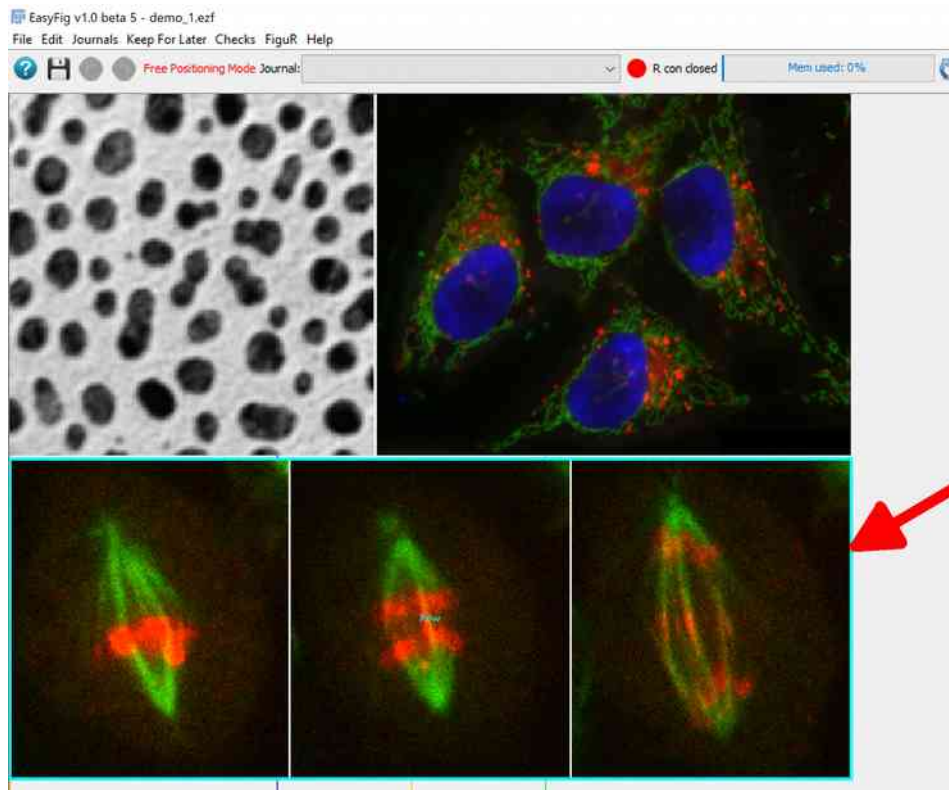
Note that the figure that was initially 2 columns in size (materialized by the green rectangle, upper arrow) is now 1.5 columns in size (materialized by the yellow rectangle, lower arrow).



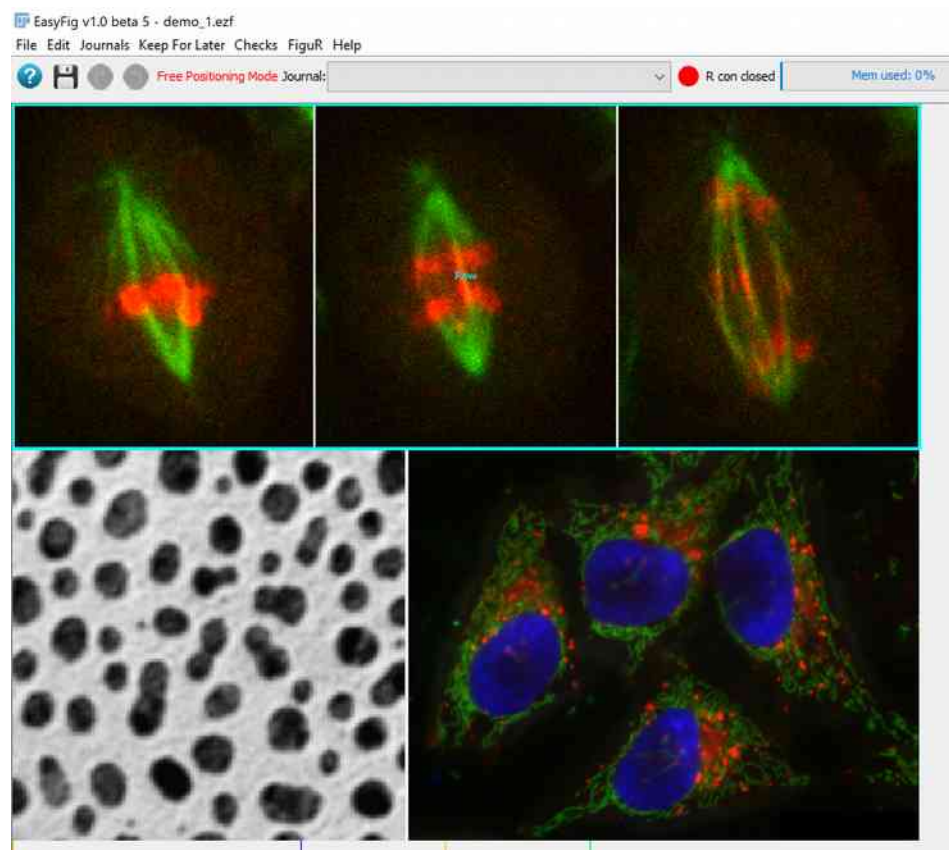
You can also set the size of the figure in cm (arrow) or in pixels.

9.2) Change layout

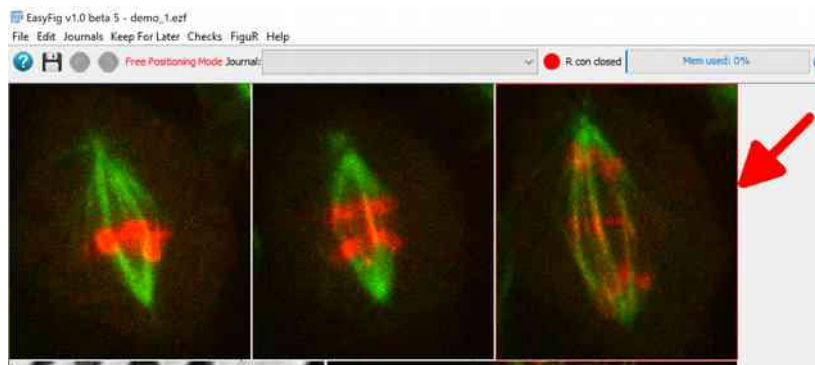
The most efficient way to change figure layout is as follows.



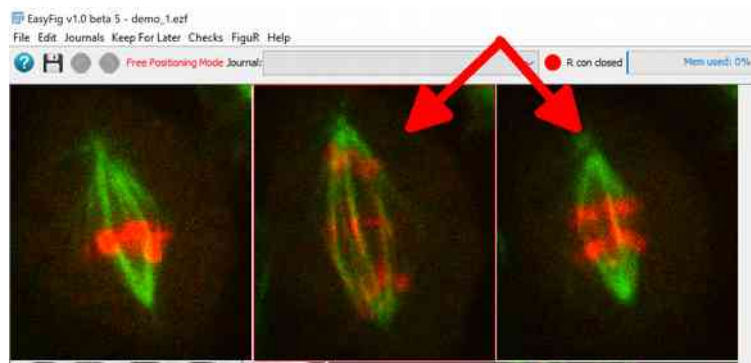
Select the object to be moved, for example a row of the figure (arrow, labeled in cyan). Then press the keyboard « up » or « left » arrow to move the row up.



The whole row has moved up.



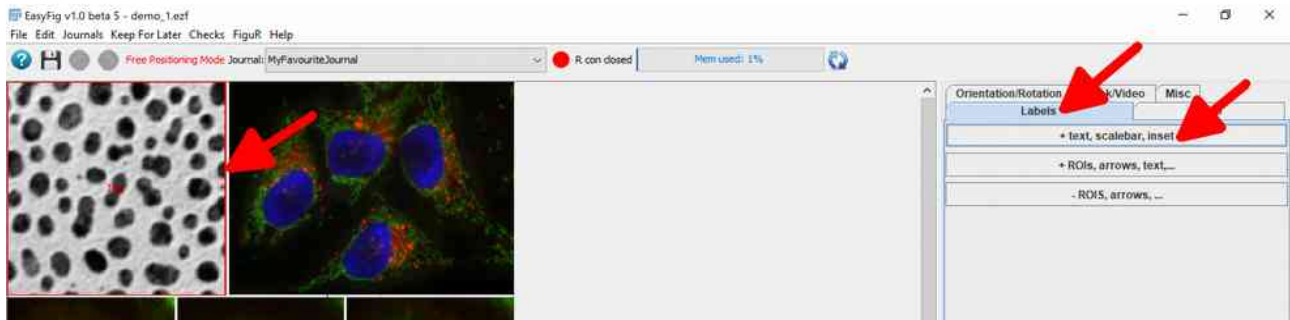
To move an inner component of the row, then click on it until it gets selected (arrow) (see also Section Selections). Then press the keyboard « up » or « left » arrow to move the image left.



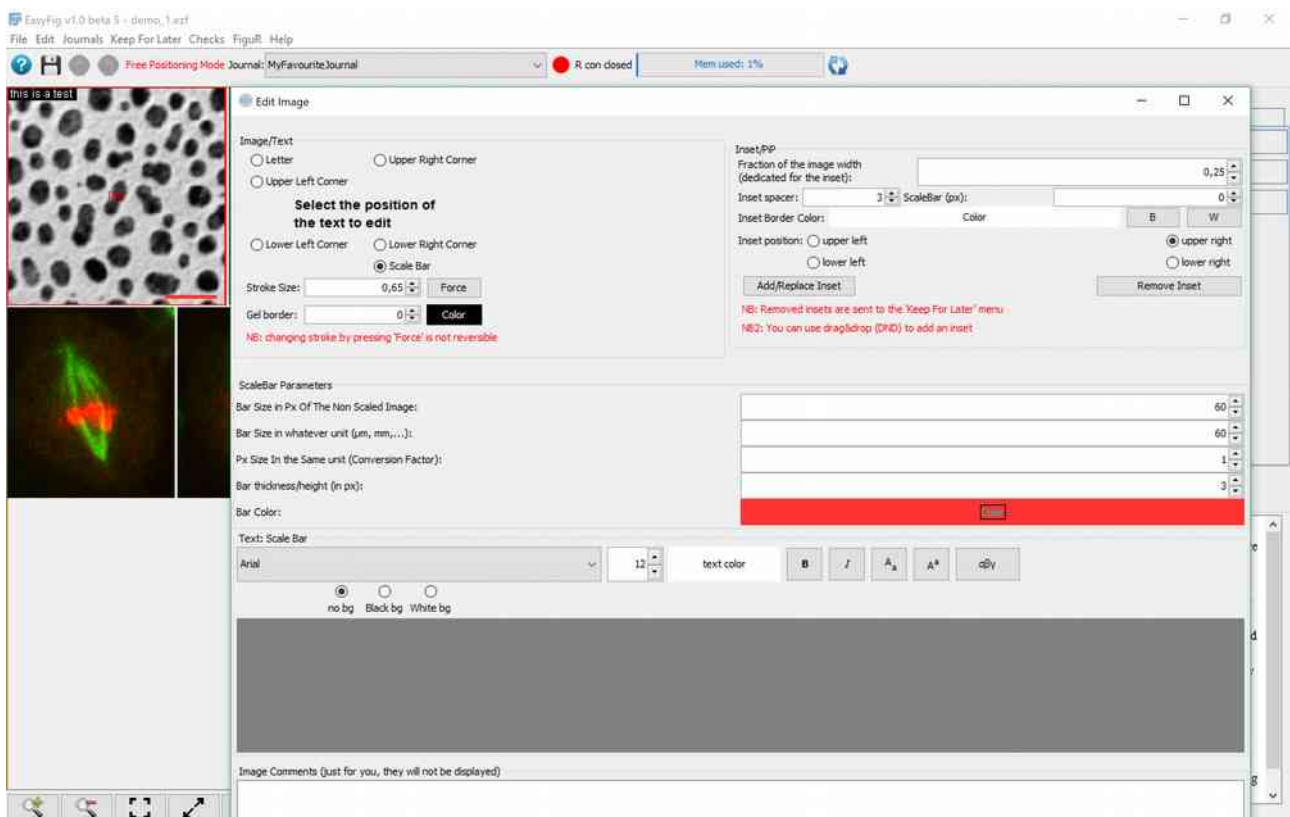
The two closest images have been swapped (arrows).

10) Annotating Images

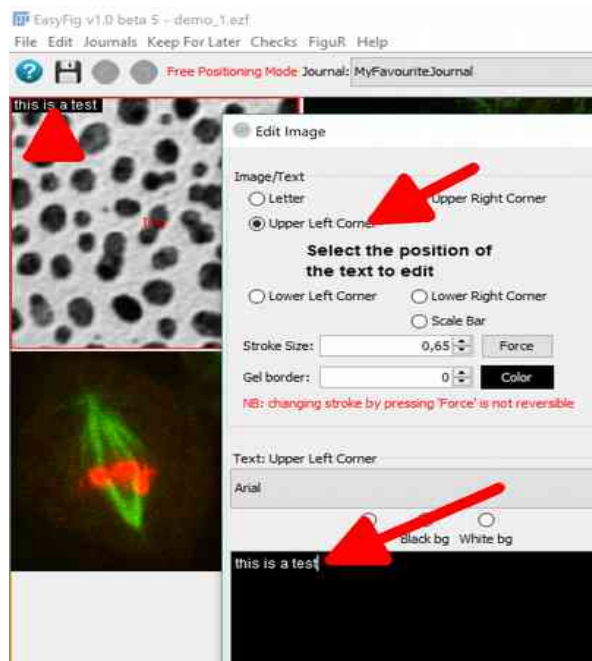
10.1) Add letters, labels and scalebar to an image



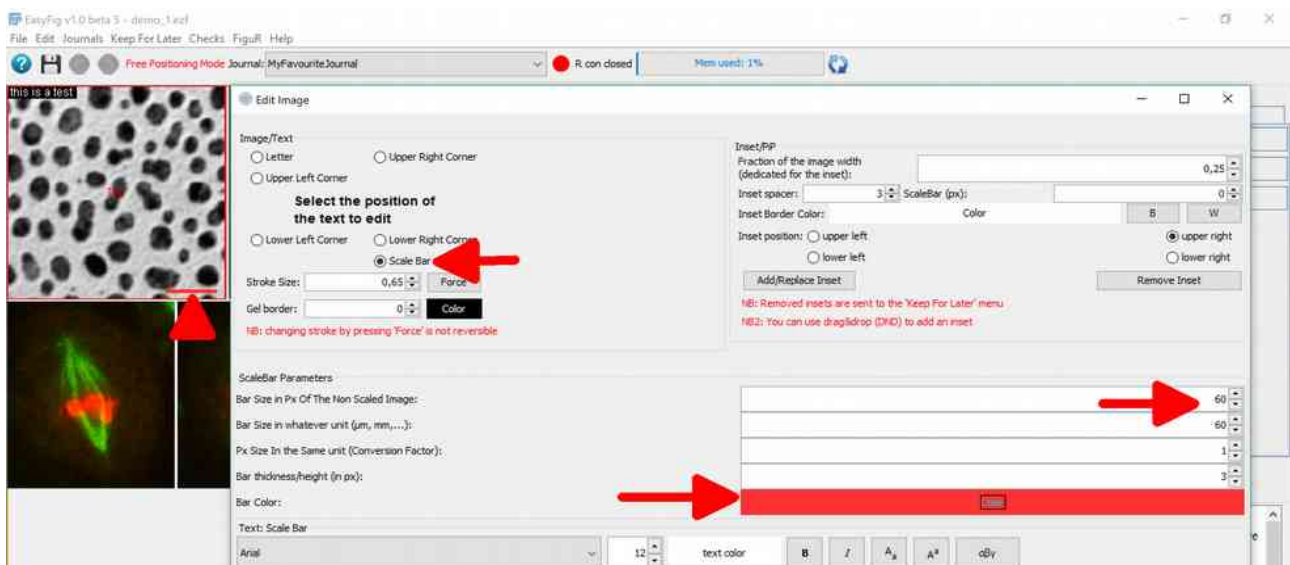
Click on an image until you see a red selection around it (left arrow), you will most likely have to click more than one time (see Section Selections). Once the image is selected the image menu will appear (middle arrow), make sure to select the « Label » panel. Then click on the « +Text, scalebar, ... » button (right arrow).



A menu will appear, from there some text, letters and scalebars can be added to an image.

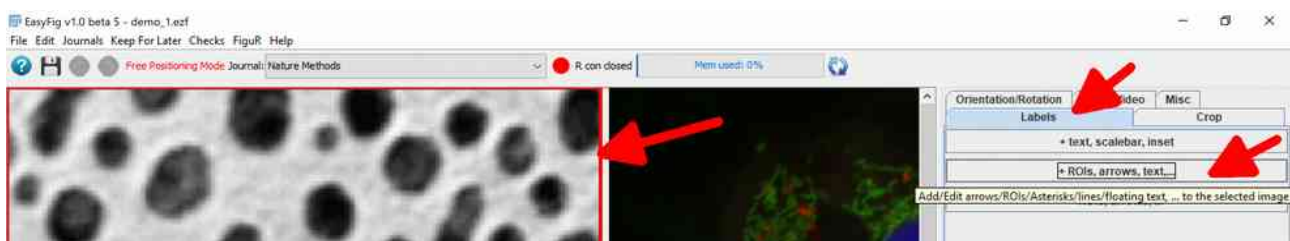


Select « Upper Left corner » to add text there (top arrow), then type your text (bottom arrow). The text will be displayed changed while you write on the original image (arrowhead).

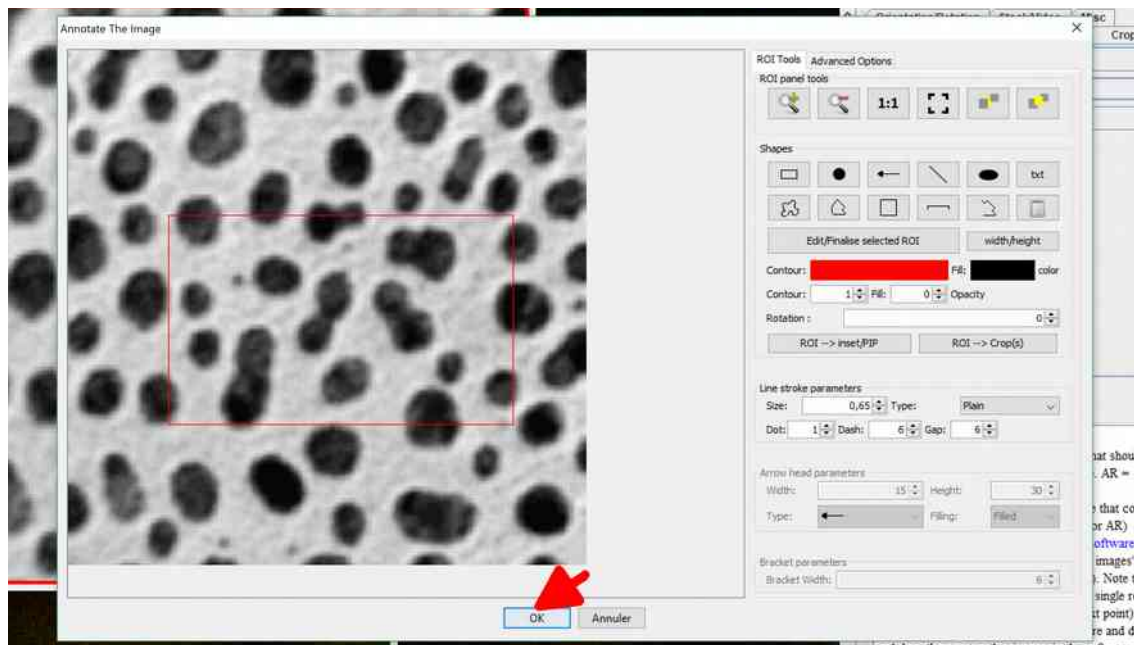


To add a scale bar, select « Scale Bar » (top arrow), then set bar size (middle arrow) then set bar color (bottom arrow). The scale bar is displayed dynamically on the original image (arrowhead).

10.2) Add ROIs/Floating text labels to an image



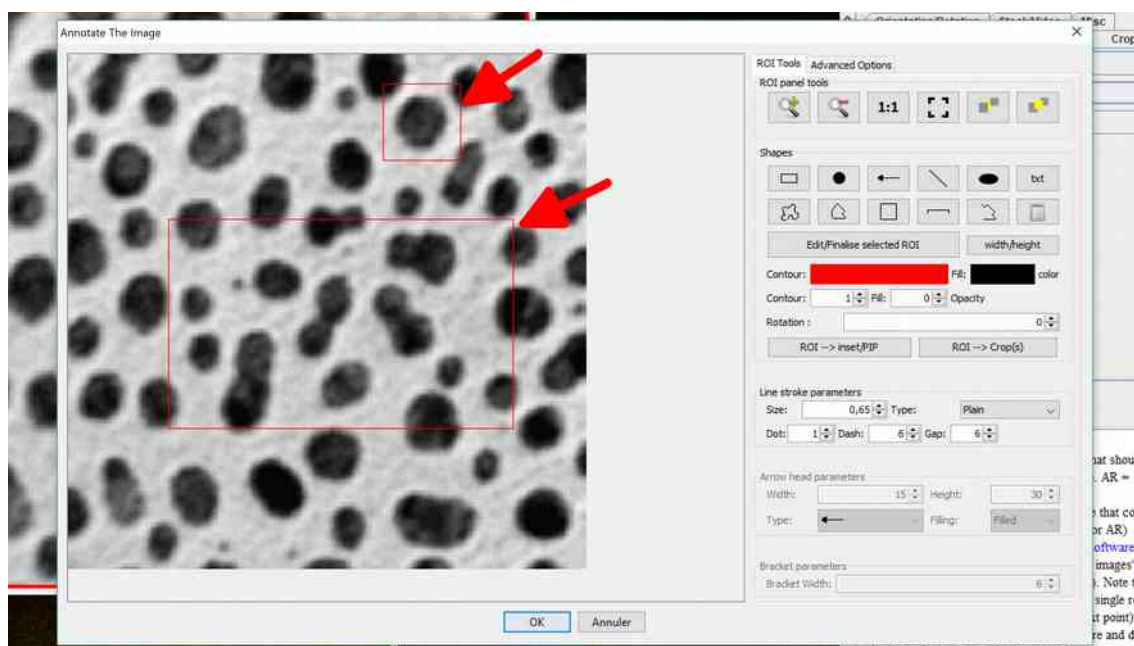
Click on an image until you see a red selection around it (left arrow), you will most likely have to click more than one time (see Section Selections). Once the image is selected, the image menu will appear (middle arrow), make sure to select the « Label » panel. Then click on the « +ROIs, arrows, text, ... » button (right arrow).



A new dialog will appear to draw ROIs or add floating text to the figure. Press « ok » when done (arrow) and the ROI will be added to the original image.

10.3) Convert ROIs to crop or insets (Picture In Picture, PIP)

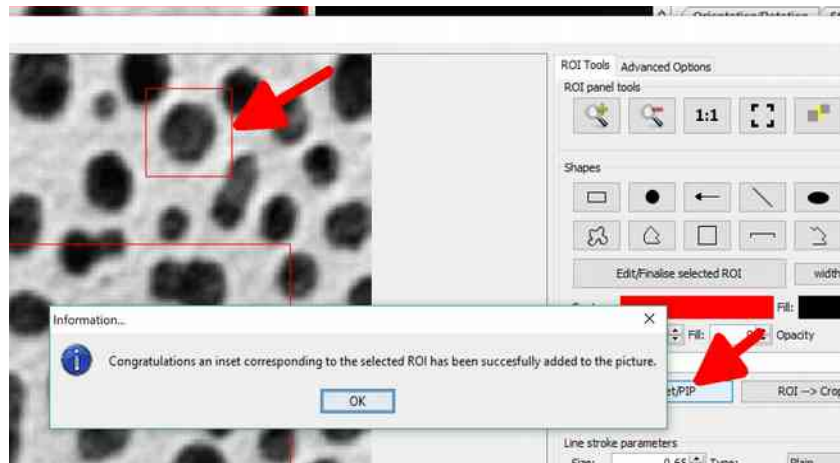
Open the ROI dialog for the image as described in the previous section.



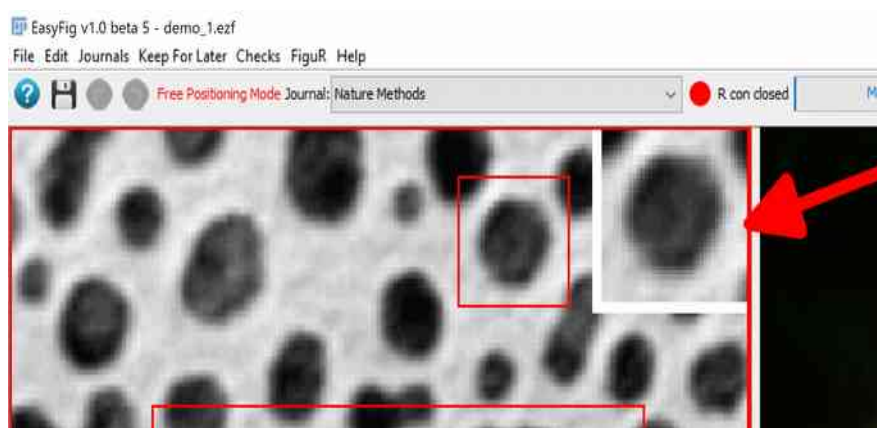
Draw two ROIs (red arrows). Select the biggest ROI by clicking on it.



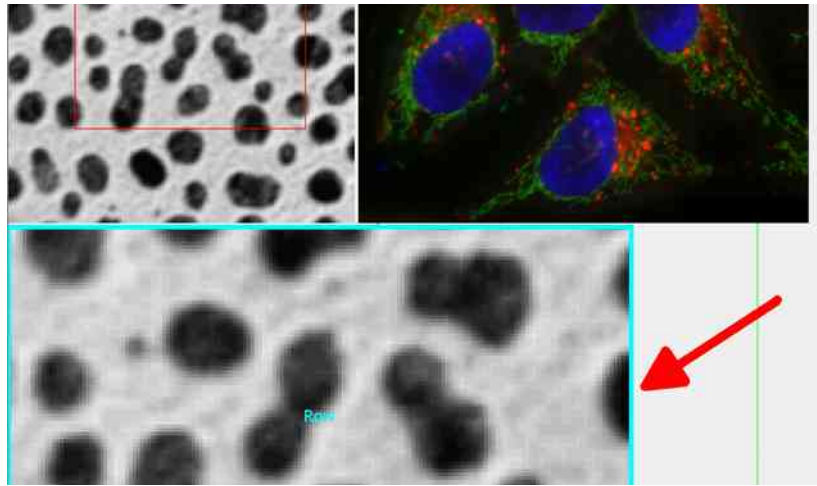
Press « ROI → Crop(s) » (right arrow) and an information message will appear (left arrow). A crop corresponding to the ROI has been added to the original image see later.



Select the second ROI by clicking on it (left arrow). Then press « ROIs → inset/PIP » (right arrow). A validation message tells you that an inset has been added to the image. Press « ok » to close the first dialog, press « ok » to close the second dialog.



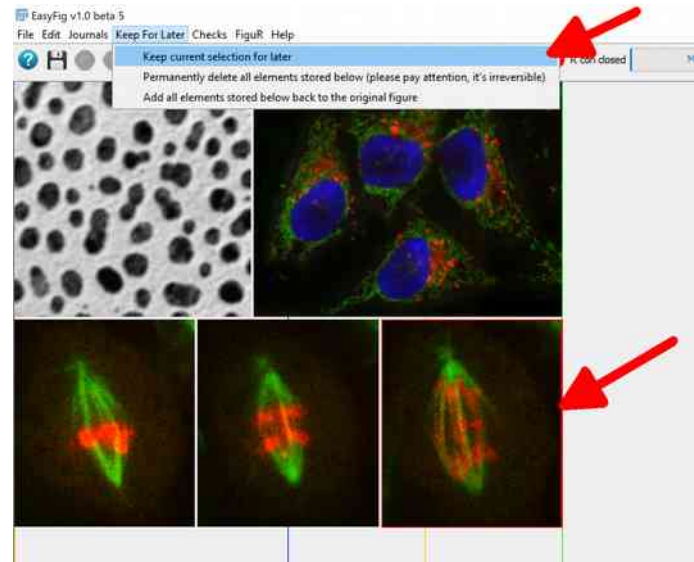
An inset appeared at the top right region of the image (the inset can be moved and resized).



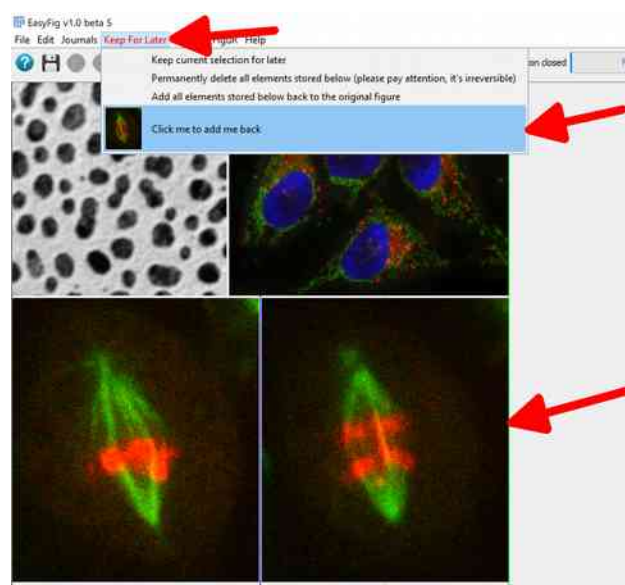
Also a crop corresponding to the biggest rectangle has been added as a new row (arrow) at the end of the figure.

11) Keep for later

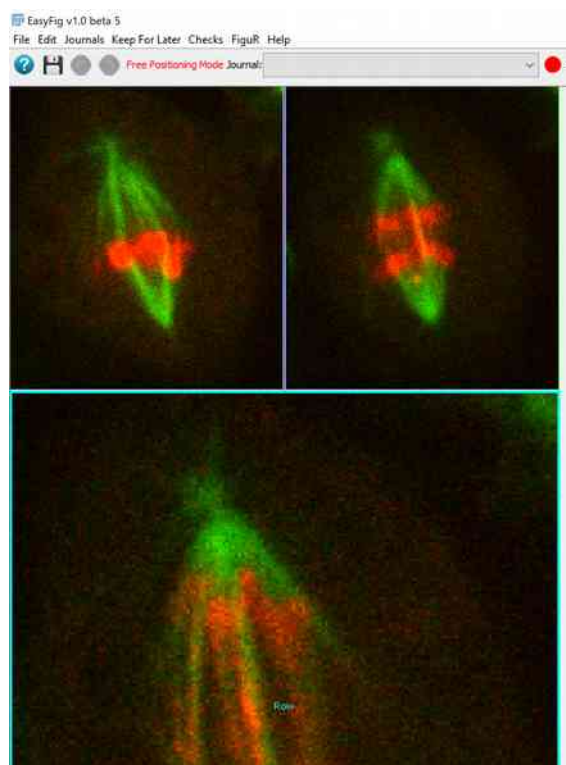
Often one needs to hide/remove portions of a figure that are not yet finalized, however this unfinished work must be kept and not trashed in order to be added back later. This is what the « Keep For Later » menu is for.



Select the object you want to remove temporarily from your figure. In this example, I select the bottom right image (lower arrow), then press « Keep For Later > Keep current selection for later » (upper arrow).



Note that the selected image was removed (lower arrow) from the row and added to the « Keep For Later » menu as a button (middle arrow). Note also that the « Keep for later » menu turns red when it contains something (upper arrow).

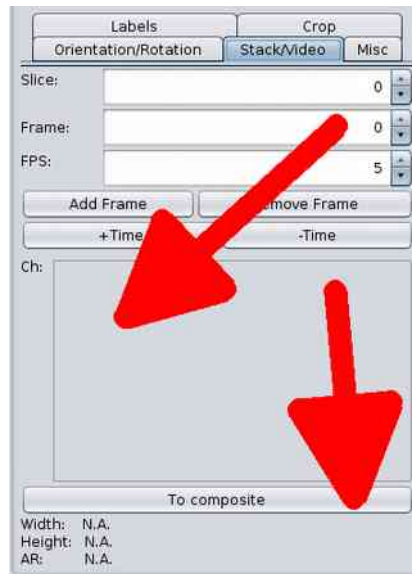


Pressing the button in the « Keep For Later » menu adds the image back to the end of the figure.

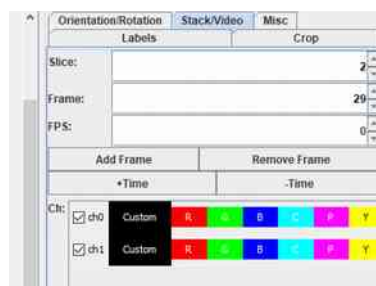
12) Manipulate image channels

12.1) Select or create an image with channels

Load an image that contains channels, or import one from ImageJ and select it.

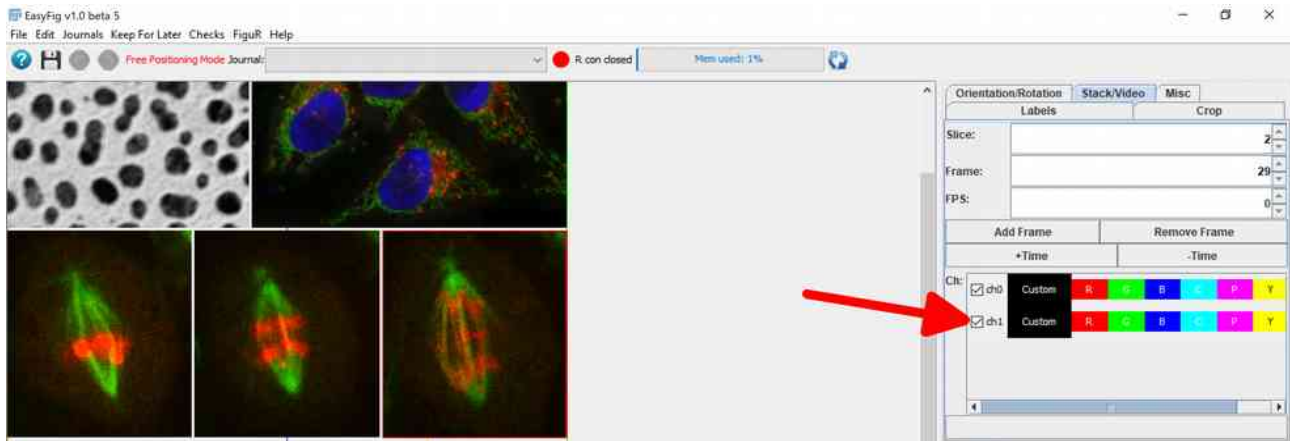


If there are no channels available in the « Ch » panel (upper arrow) note that any RGB image can be converted to composite by pressing the « To composite » button (lower arrow).

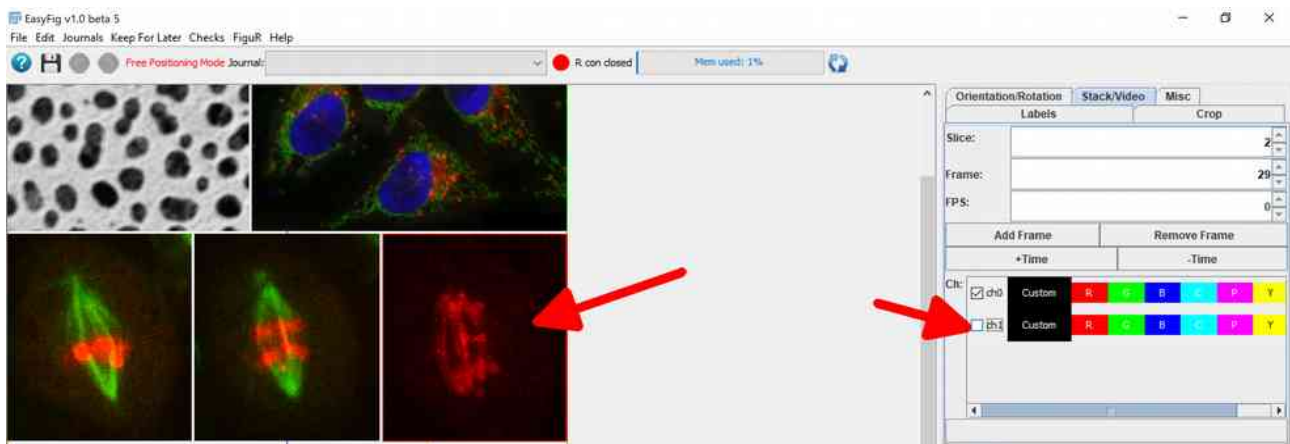


Once the image is converted to composite, its channels are displayed in the « Ch » panel.

12.2) Activate/inactivate channels

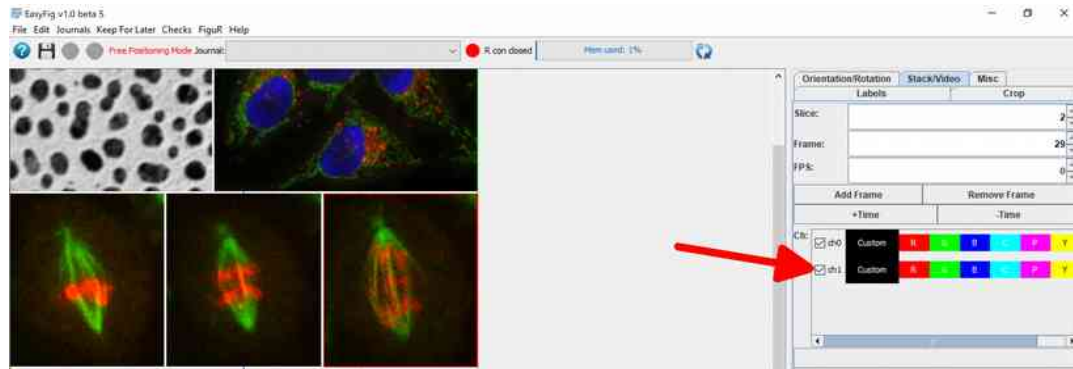


« ch1 » is active (ticked)

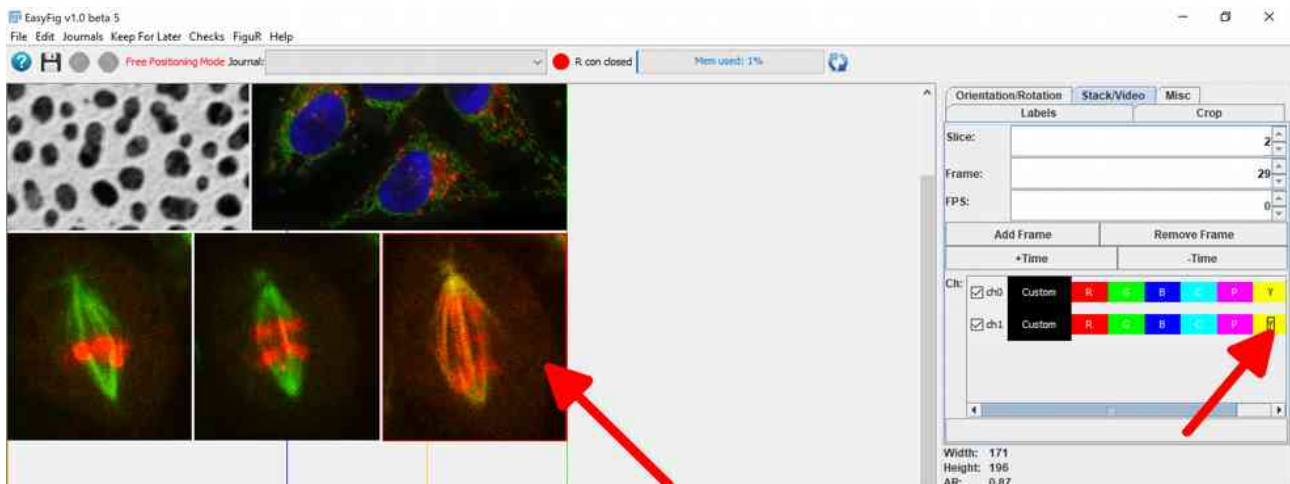


Untick the channel (right arrow) and it becomes inactive in the image (left arrow).

12.3) Change channel color



Make sure « ch1 » is active (ticked)

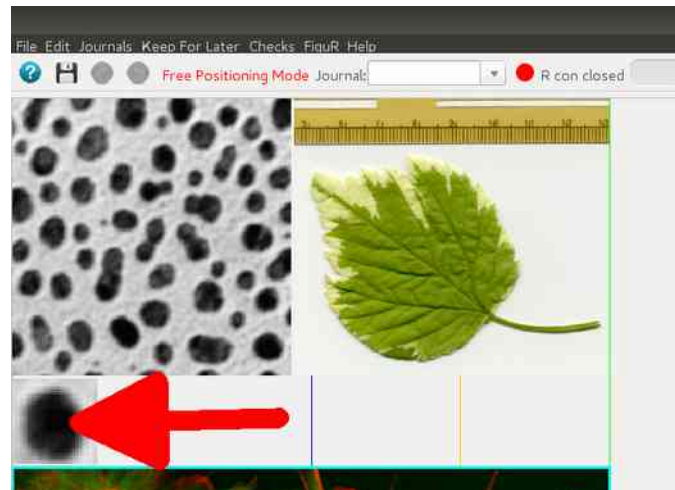


Press the yellow button « **Y** » (right arrow) to turn the green channel of the selected image to yellow (left arrow).

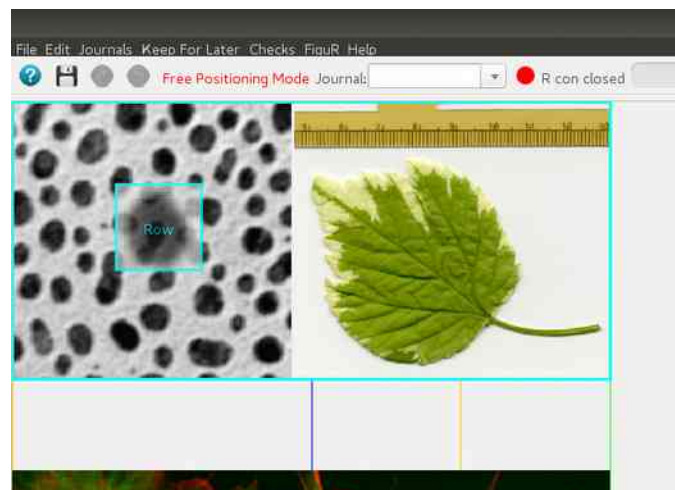
13) Use drag and drop to build a figure efficiently

13.1) Add inset using drag and drop

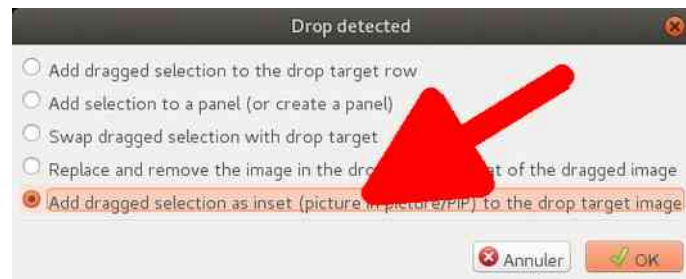
The easiest way to add an inset or do anything in EasyFig is via drag and drop.



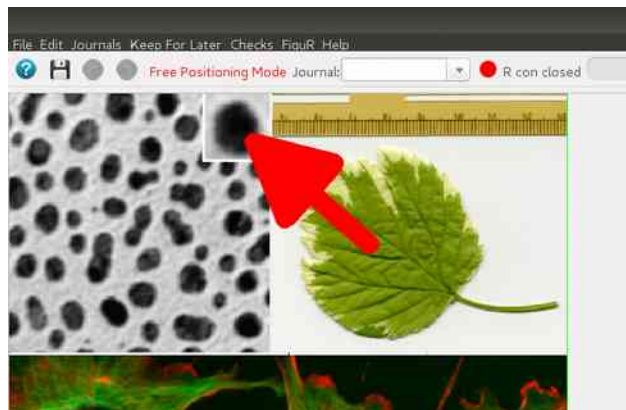
Select this image and drag and drop it onto the image above it.



Drop it

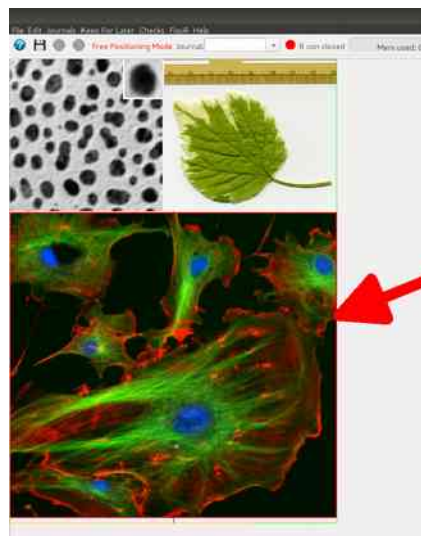


A dialog opens. Select « Add dragged selection as inset »

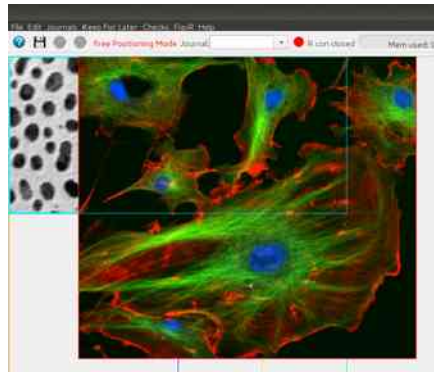


The inset is added to the image.

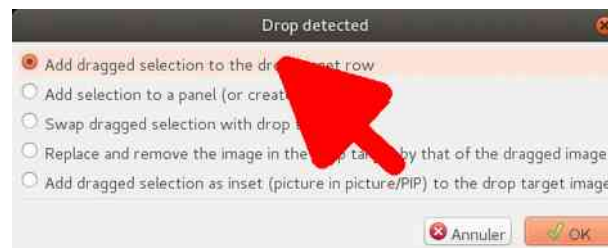
13.2) Add an image to a row



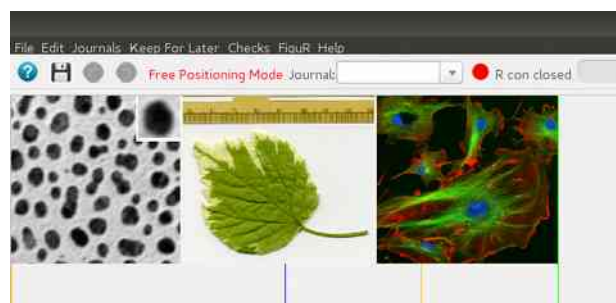
Click on an image until it gets selected (surrounded by a red rectangle) (arrow).



Drag and drop this image onto the row above it (notice the drop target becomes selected, surrounded by a cyan rectangle).



A dialog opens. Select « add dragged selection to the dropped target row ».

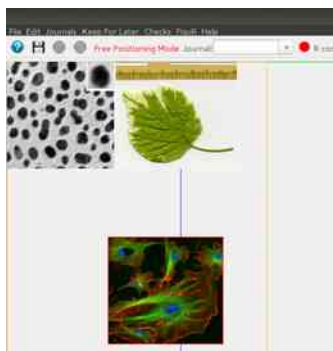


The image has been added to the row.

13.3) Create a new row from an image/remove an image from a row



Click on an image until it gets selected (surrounded by a red rectangle) (arrow).



Drop the image in the empty region.



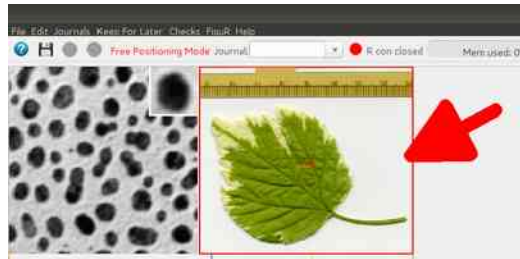
A dialog opens. Select « Add selection to new row » and press ok.



The image was added to a new row.

PS : to delete the image from the figure just select it and press the « Del » key on the keyboard.

13.4) Create a panel, add it to a row and change its layout



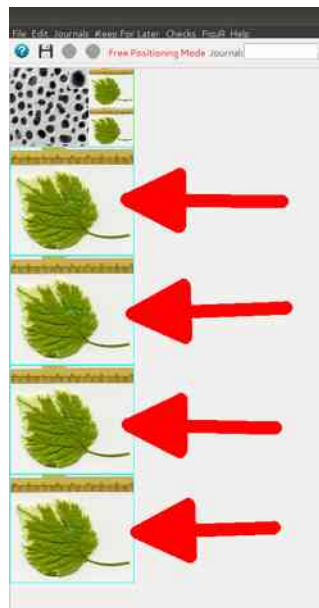
Click on an image until it gets selected (surrounded by a red rectangle) (arrow).



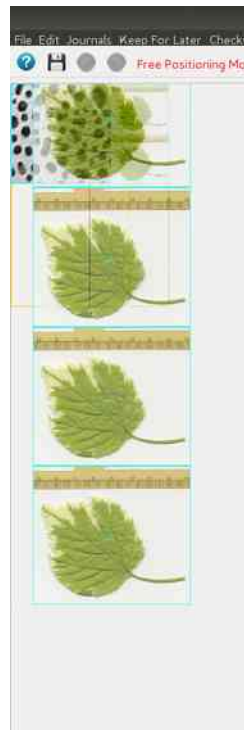
Duplicate it (i.e. press Ctrl/Cmd + C, Ctrl/Cmd + V) five times (you should have 6 times the same image in your figure). Here we have six times the same leaf image but things would work the same with images having the same aspect ratio (e.g. images in a time series, Z slices, ...).



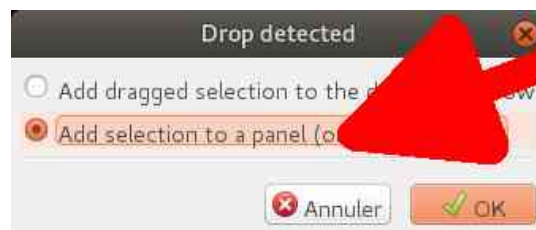
Note the a panel/montage containing two images can be seen in the first row of the figure.



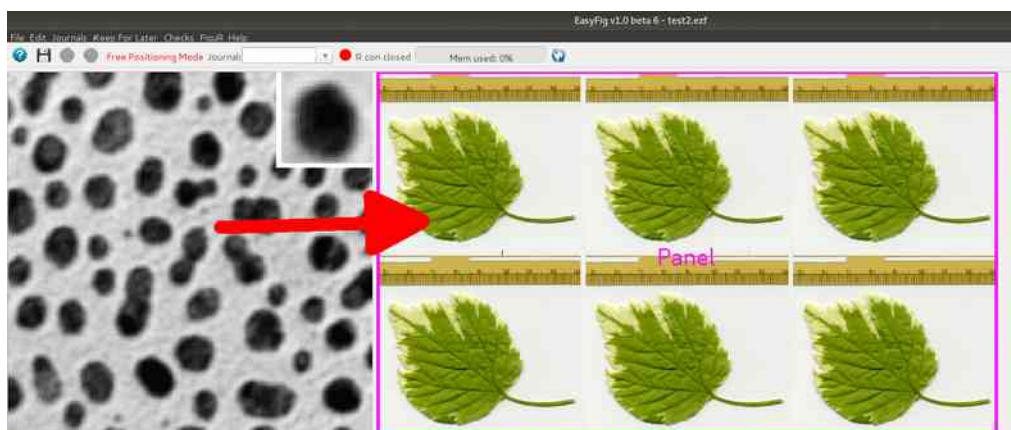
Select one of the copied images, maintain the Ctrl/Cmd key and click on the three other copied images (Ctrl/Cmd + Click allows for multiple selection). Note the cyan (red) rectangles indicating the selected images.



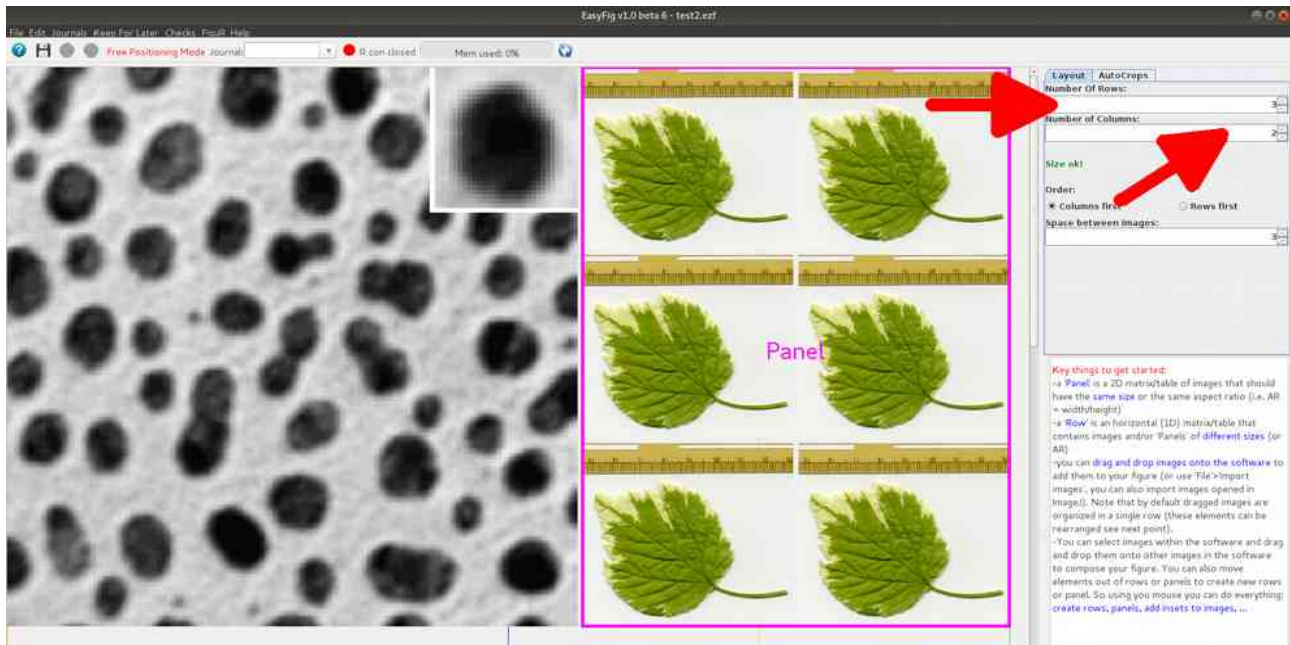
Drag and drop those four images onto the panel already containing 2 images.



A dialog pops. Select « Add selection to a panel » and press ok.



A panel with six images is now in the first row. Select it, it should be surrounded by a magenta rectangle.



Change the number of rows to 3 (upper arrow) and the number of columns to 2 (lower arrow). Note that the layout of the panel changed.

13.5) List of DND options and their use

Add dragged selection to the drop target row : Adds dragged objects to the drop target row.

Add selection to new row : Adds dragged objects to a new row in the figure.

Add selection to new Figure : Adds dragged objects to a new figure (**Free mode** only).

Add selection as a new Row at the end of the drop target Figure : Adds dragged objects as a new row in the drop target figure (**Free mode** only).

Add selection as a new Rows at the end of the drop target Figure : Adds dragged objects as a new rows in the drop target figure (**Free mode** only).

Add selected Figure(s) content to the drop target Figure : Adds the entire content of the dragged figures to the single drop target figure (fuse figures) (**Free mode** only).

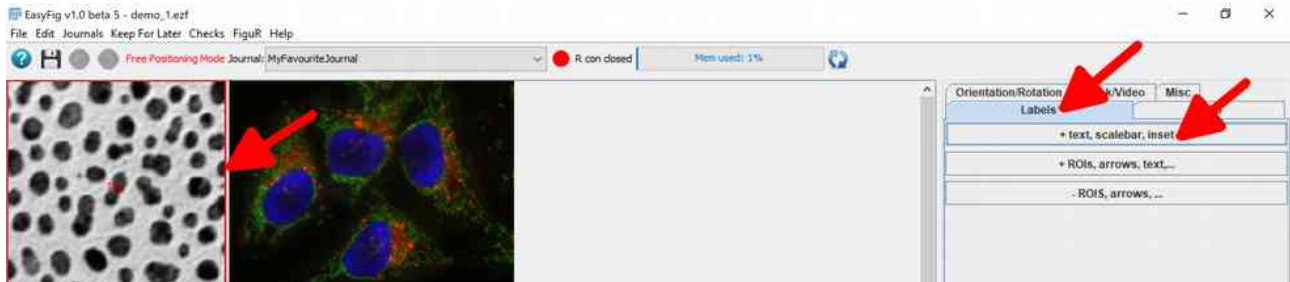
Swap dragged selection with drop target : Swap dragged object with drop target objects of the same type (i.e. swap a figure with another one, a row with another row, a panel with another ...).

Replace and remove the image in the drop target by that of the dragged image : Replace drop target image by the dragged image (**Be careful, the drop target image will be deleted**).

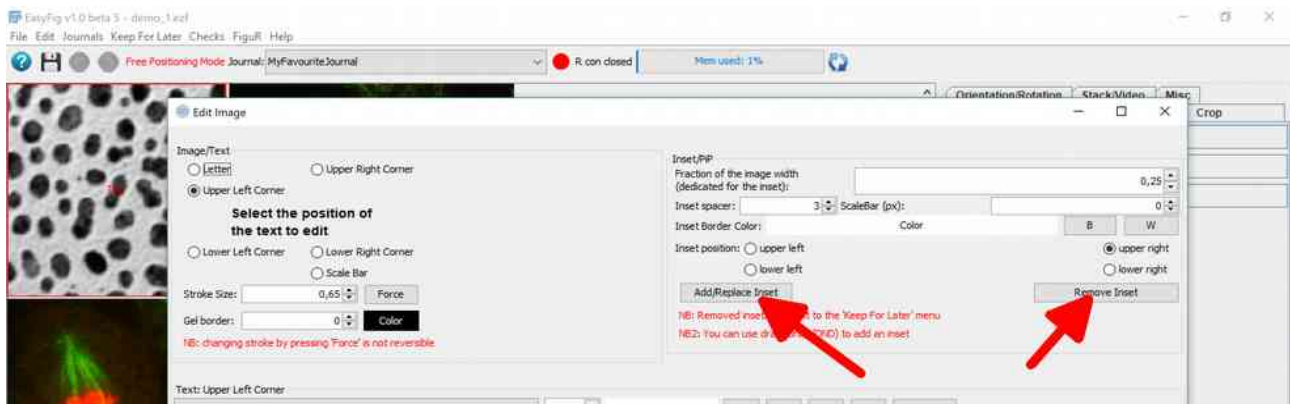
Add selection to a panel (or create a panel) : Create a panel that contains the dragged images and the drop target image/panel (image order and panel layout can be changed later).

Add dragged selection as inset (picture in picture/PIP) to the drop target image : adds dragged selection as an inset in the drop target image.

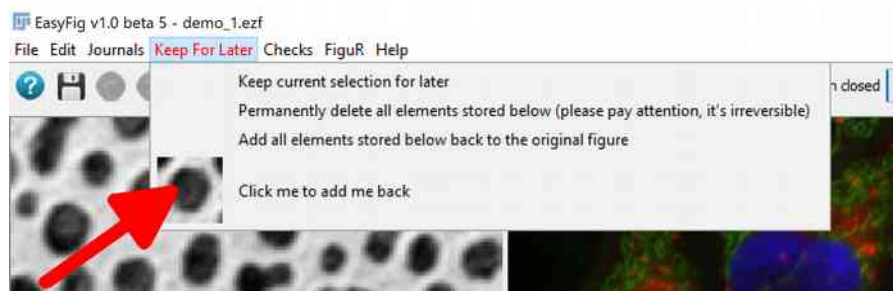
14) Add inset/Picture in picture (PIP) from the local drive



Select an image (left arrow), press the « Labels » tab (middle arrow) and press the « +text, scalebar, inset » button



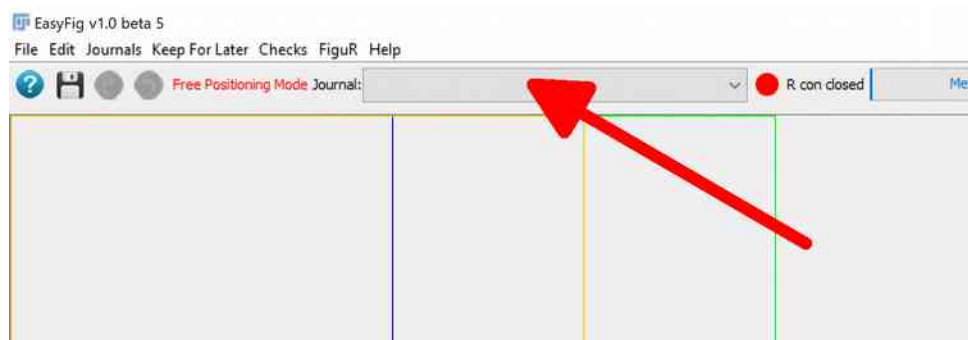
Press the « Add/Replace Inset » button to insert an image from the local hard drive (Left arrow). Note that it is only possible to add one inset per image, note also that many journals ask not to use insets. To remove the inset associated with the image press « Remove Inset » (right arrow).



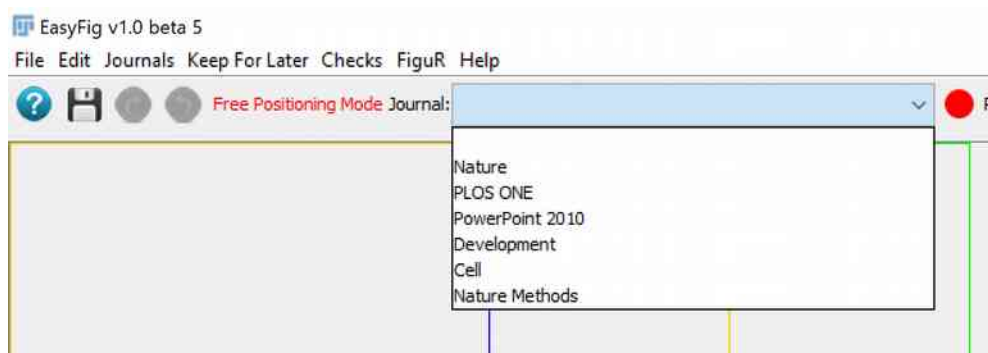
Note that removed insets are not deleted, they are added to the « Keep For Later » menu (arrow).

15) Journal styles

15.1) Select a journal style

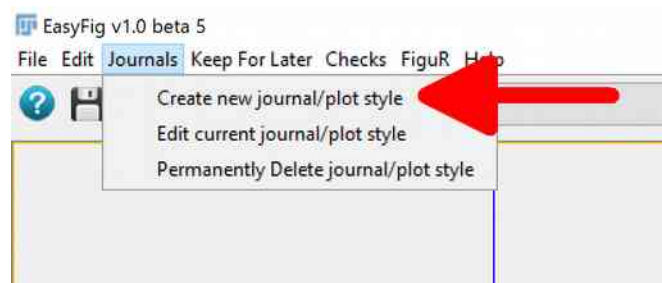


Before applying a check you must select a journal style to be used



If the journal you look for is not available you can create your own journal style.

15.2) Create a new journal style



Press « Journals>Create new Journal »

Journal Parameters

Journal Name:

Common Font: ☐ Use Same Font for all the text

Letter Font: The letter should be:

Upper Left Text Font: Lower Right Text Font:

Upper Right Text Font: Lower Left Text Font:

Scale Bar Text Font: Outter Text Font:

Full (2 Columns) Page Width (in cm): Full Page Height (in cm):

1.5 Column Width (in cm): Column Width (in cm):

Objects Stroke Size:

Advanced Text Formatting Rules: preferred output DPI for colored: or B&W images:

Graph Font Settings

☒ Use Same Font Throughout the Graph

Font size Main Title:

Font size Legend Title: Text:

Font size x Axis Title: Text:

Font size y Axis Title: Text:

Default Line Width (in pts) (values <0 mean inactive): Default Point Size (in pts) (values <0 mean inactive):

Warn if the graph has a main title: ☒ Yes ☐ No Warn if the graph has a grid: ☒ Yes ☐ No

Warn if the graph has a colored background: ☒ Yes ☐ No Warn if axis title is missing: ☒ Yes ☐ No

Warn if units are missing: ☒ Yes ☐ No Warn if units are not surrounded by brackets: ☒ Yes ☐ No

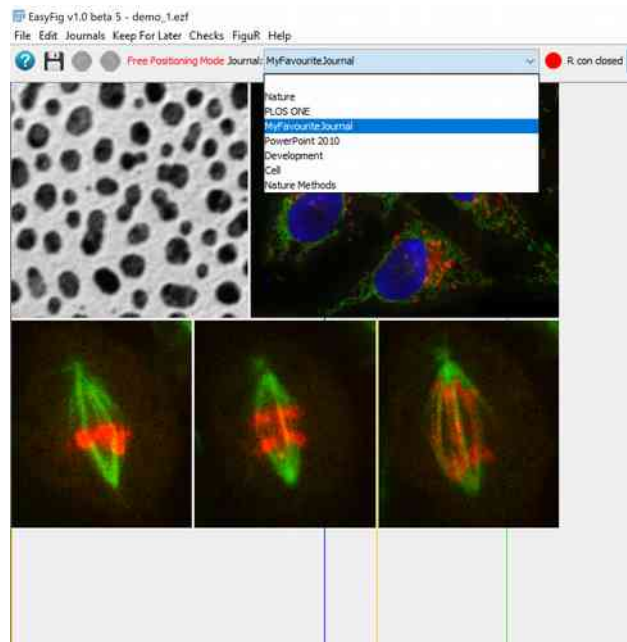
Warn if the graph legend has a title: ☒ Yes ☐ No Warn if colors are not color blind friendly: ☒ Yes ☐ No

Enter the journal parameters you get from the guidelines such as size of a column, size of 2 columns, font, letter capitalization rules, style rules, text formatting rules, graph rules, ... Provide the name of the journal and you are done. Please do not hesitate to send me this file so that I can add it to EasyFig, you'll get credit for this journal and you may help other people.

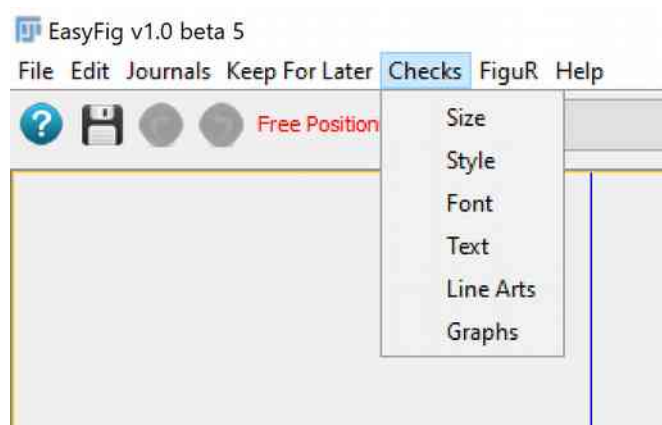
16) Editorial Checks

When submitting a manuscript to a journal you have to obey several editorial guidelines. EasyFig may help you in that respect.

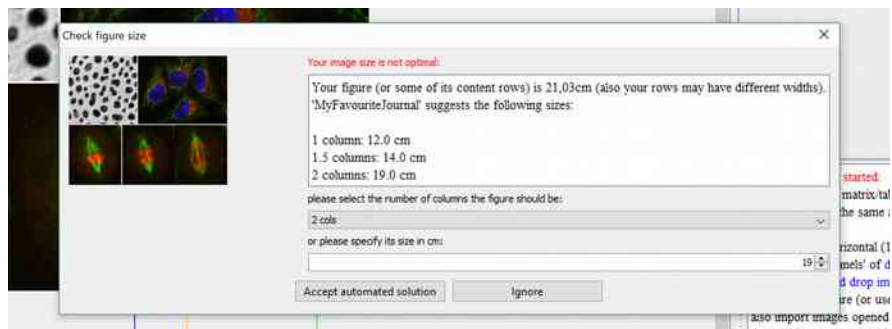
16.1) Check Size



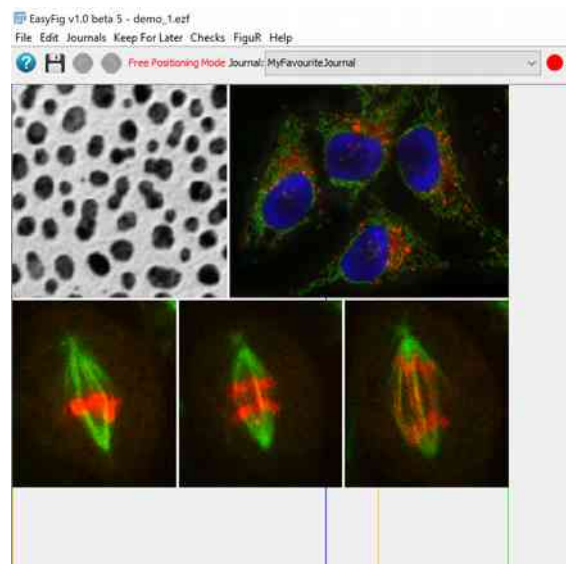
Select a journal style



To check image size, i.e. that the figure you created fits the journal style guidelines, open the Checks menu and select « Size ».



A dialog appears and offers as a solution to change the size of the image to the closest available journal size, you are free to accept or reject the offered solution.

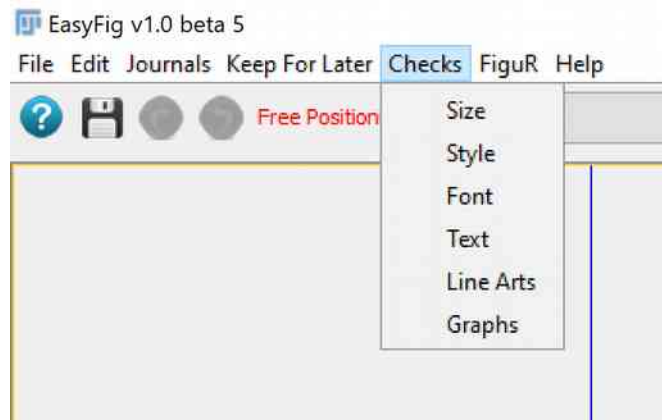


If you accept the solution the image is resized (in that case the image has been resized to two journal columns as indicated by the alignment with the green rectangle on the drawing panel).

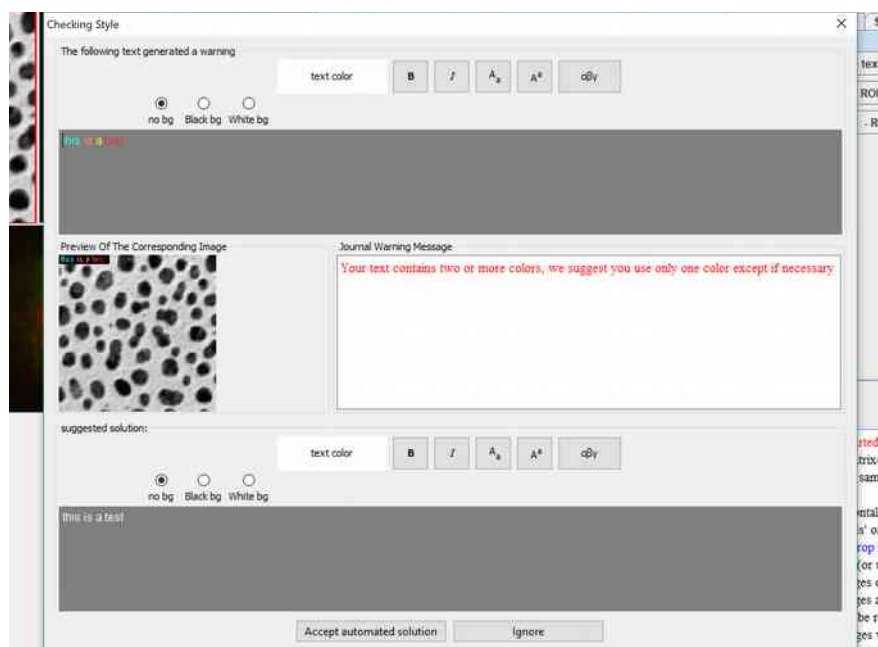
16.2) Check style

Most journal stylistic guidelines, for example the text should not be colored. To check your figure for style :

Select a journal style



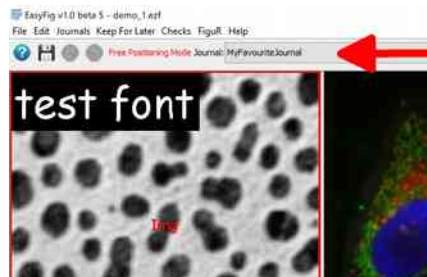
Press « Checks > Style ».



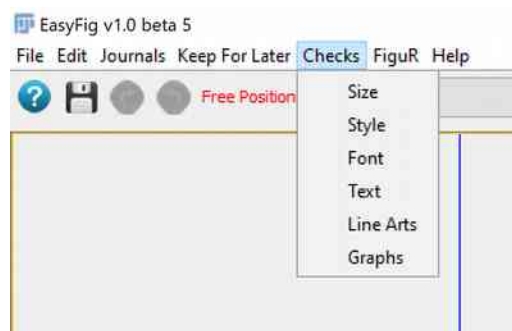
The dialog shows you the problematic image styles and offers a solution. Here, it offers to replace multicolor text by white text. Please feel free to accept or reject this suggestion.

16.3) Check Fonts

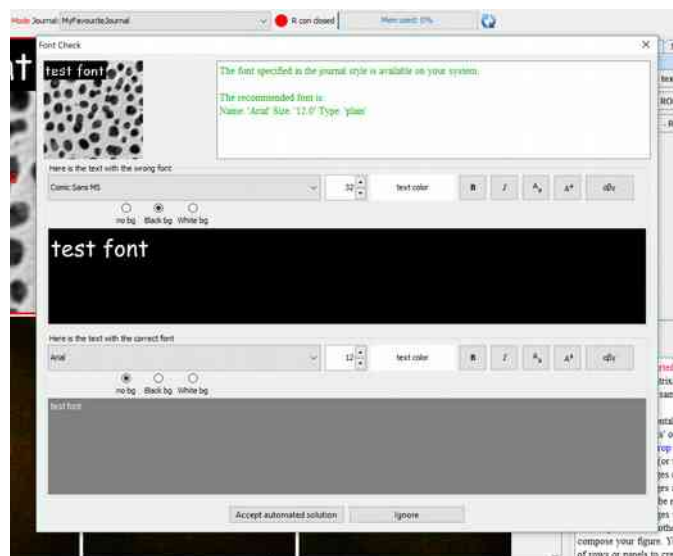
Most journals ask you to use a specific font and font size for the text lettering and annotation of your figures. To check your figure for Fonts :



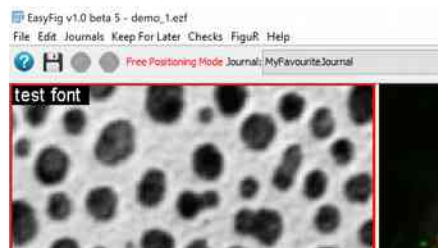
Select a journal style



Select « Fonts » in the Checks menu



if the fonts do not respect journal styles, you will be offered to replace fonts. Feel free to accept or reject the offer.



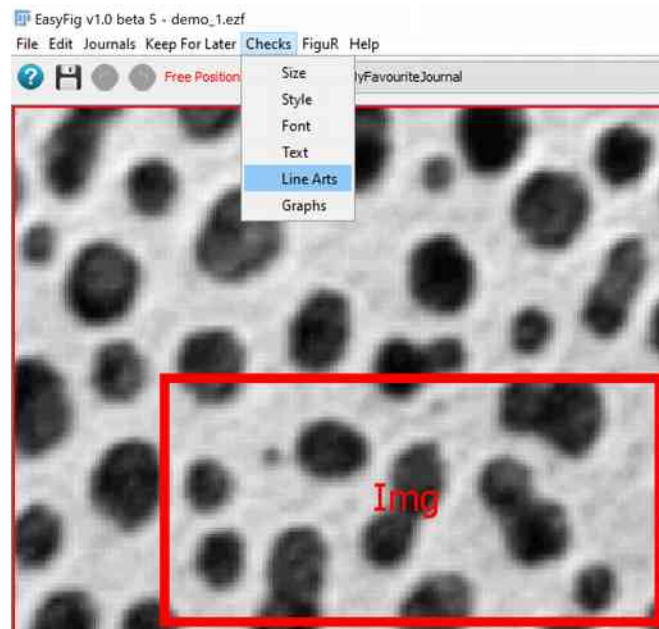
If you accept the font will be changed and easyfig will take care of the layout for you.

16.4) Check line arts

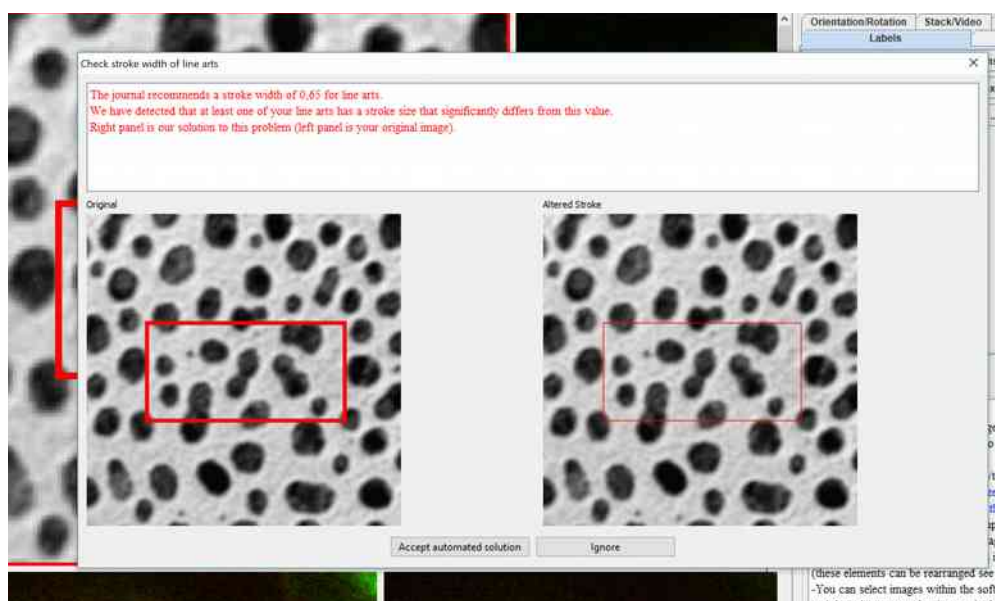
Most journals ask to have specific line width for your ROIs, to check your figure line arts :



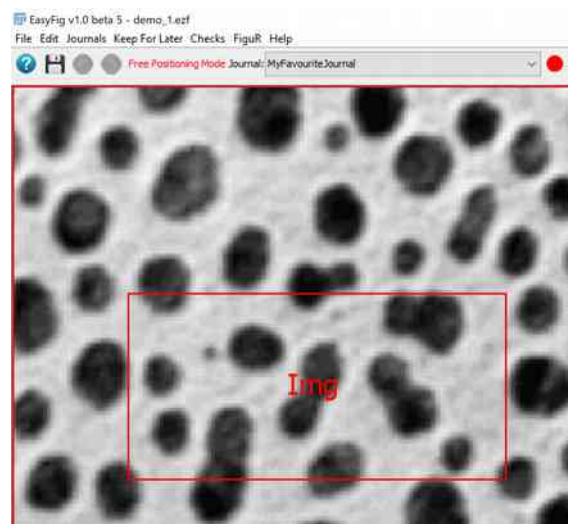
Select a journal style



Select «Line arts» in the Checks menu.



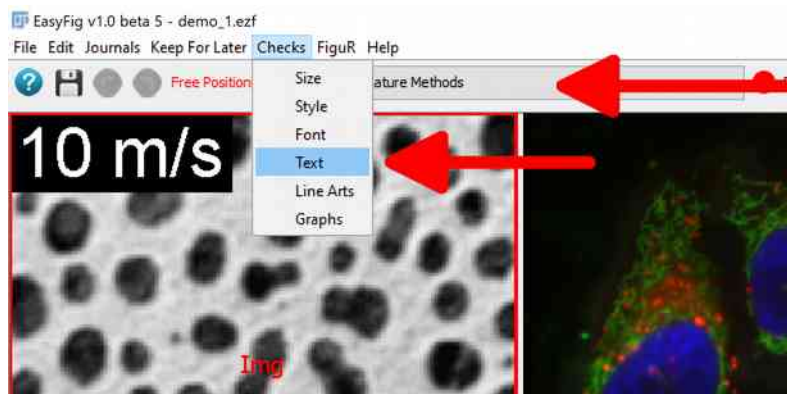
If your line arts are not in conformity with the guidelines you will be offered a replacement solution. Feel free to accept it or not.



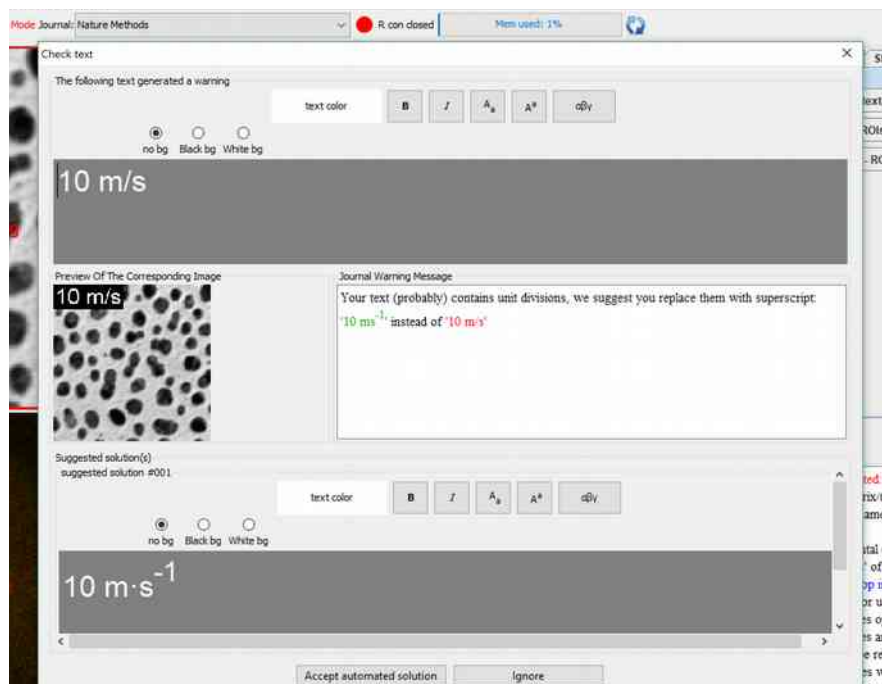
If you accept, the line arts will be changed in the original figure.

16.5) Check Text

Journals have rules regarding text, for example how to write formulas, how to write speed units, ...
To check the figure text :



Select a journal style then press « Checks > Text »



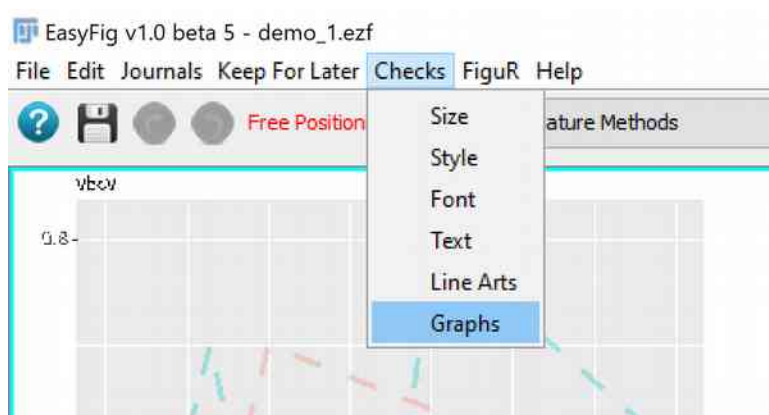
If your text did not pass the test, a solution will be offered. Feel free to accept it or reject it. Please pay attention to the offered solution as text check are programmatically hard to implement and require human inspection and are irreversible.

16.6) Check Graphs

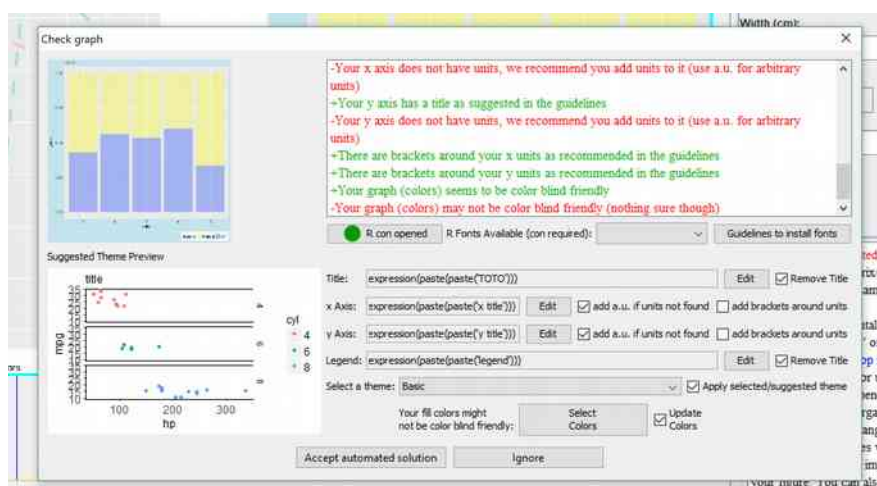
Most journals have guideline regarding graphs (for example regarding units, graphs must not have backgrouds, ...). Here is how you can check your graphs (please note that EasyFig can only check graphs generated with FiguR, a tool included in the EasyFig package):



Select a journal style (left arrow) and ensure that EasyFig is connected to R (green button/right arrow)



Press « Checks > Graphs »

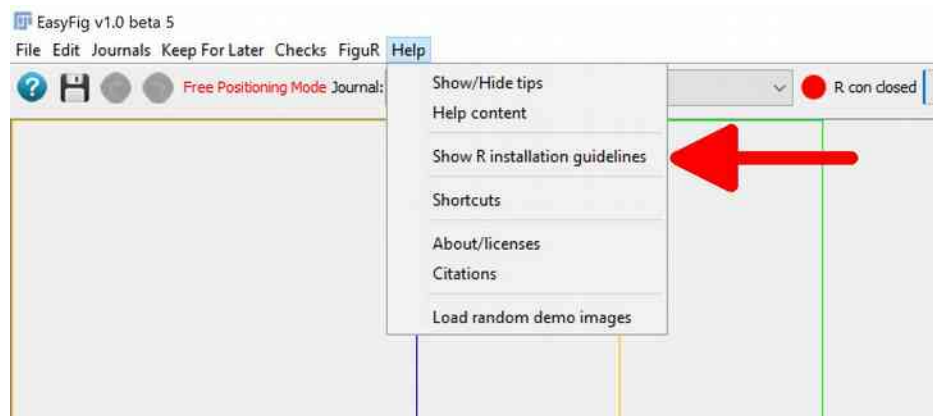


Read the comments reagrding your graph, perfrom changes or ignore suggestions if you think they are not appropriate. If you accept the solution your graphs will be changed.

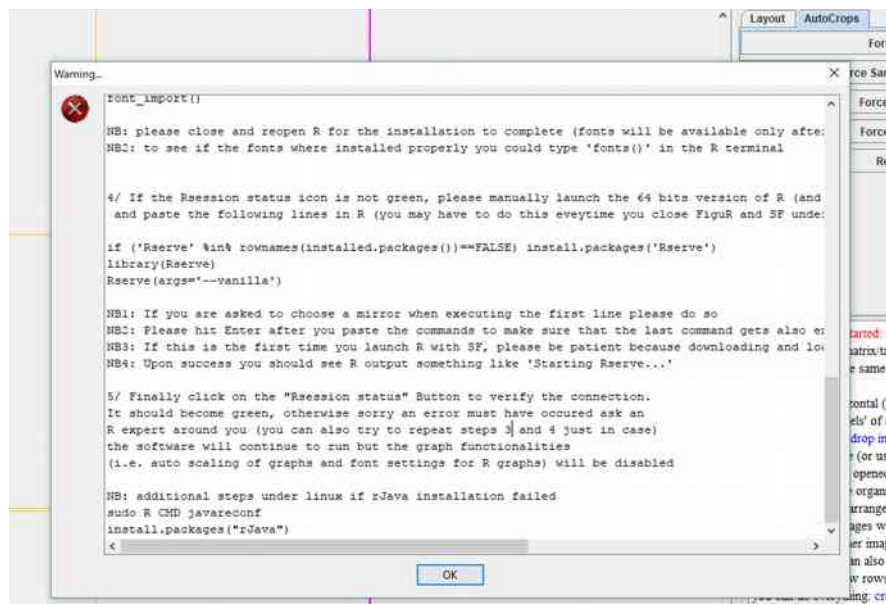
17) FiguR

Often figures contain graphs and FiguR is a tool to create graphs that can be directly edited by EasyFig. FiguR uses R and ggplot2 to draw graphs. The use of ggplot2 is motivated by the fact that this is the only R library (as far as I know) where fonts can be set. Proper font is mandatory for most scientific publications.

17.1) Install and configure R (required for FiguR to work)



Press Help > Show R installation guidelines



This dialog opens. Please follow the instructions within.


```

RGui (64-bit)
Fichier  Edition  Voir  Misc  Packages  Fenêtres  Aide

R Console

R version 3.4.3 (2017-11-30) -- "Kite-Eating Tree"
Copyright (C) 2017 The R Foundation for Statistical Computing
Platform: x86_64-w64-mingw32/x64 (64-bit)

R est un logiciel libre livré sans AUCUNE GARANTIE.
Vous pouvez le redistribuer sous certaines conditions.
Tapez 'license()' ou 'licence()' pour plus de détails.

R est un projet collaboratif avec de nombreux contributeurs.
Tapez 'contributors()' pour plus d'information et
'citation()' pour la façon de le citer dans les publications.

Tapez 'demo()' pour des démonstrations, 'help()' pour l'aide
en ligne ou 'help.start()' pour obtenir l'aide au format HTML.
Tapez 'q()' pour quitter R.

> if ('Rserve' %in% rownames(installed.packages()))==FALSE) install.packages('Rserve')
> library(Rserve)
> Rserve(args='--vanilla')
Starting Rserve...
"C:\Users\baigo\DOCUMENTS\1\R\WIN-LI-1\3.4\Rserve\libs\x64\Rserve.exe" --vanilla
>

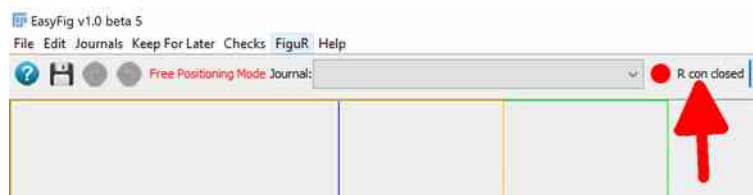
```

Finally launch R and type in (or copy paste) the following lines :

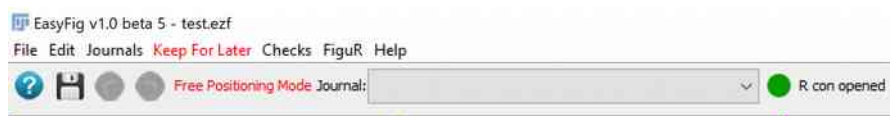
```

if ('Rserve' %in% rownames(installed.packages()))==FALSE) install.packages('Rserve')
library(Rserve)
Rserve(args='--vanilla')

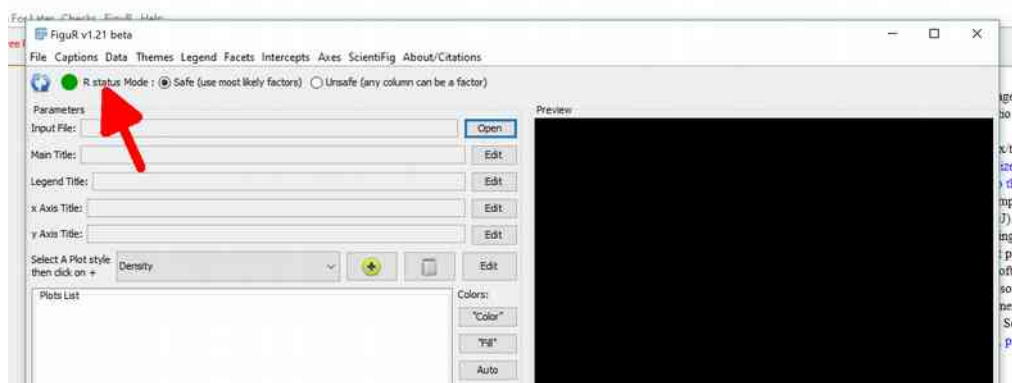
```



To connect EasyFig to R, press the red « R con » button in EasyFig.

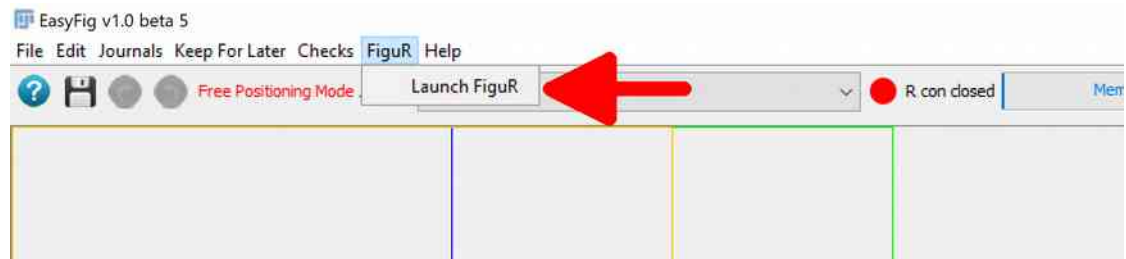


If connection to R is succesful, the « R con » button should turn green.

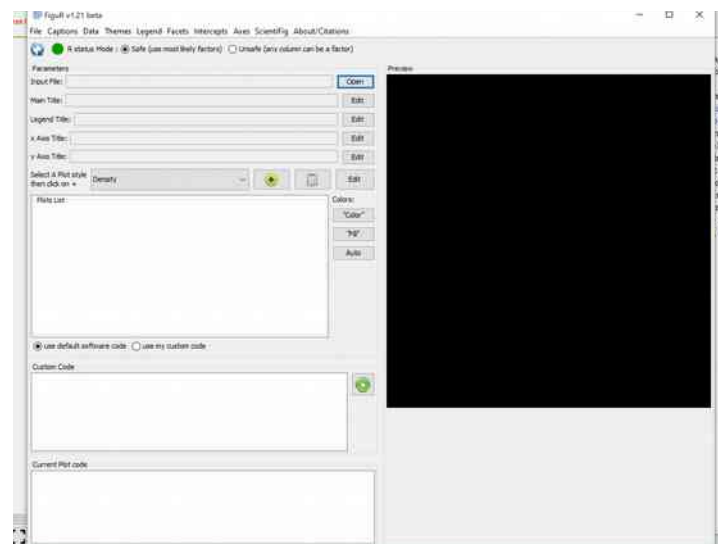


Similarly, to connect FiguR to R press the « R status » button (arrow) in FiguR.

17.2) Launch FiguR

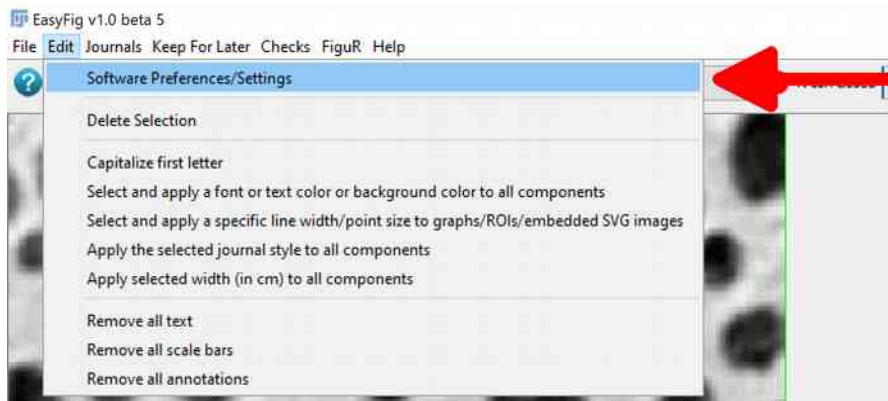


To Launch FiguR from EasyFig press « FiguR > Launch FiguR »

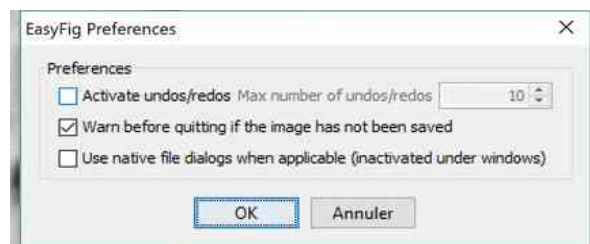


The FiguR interface opens

18) Settings



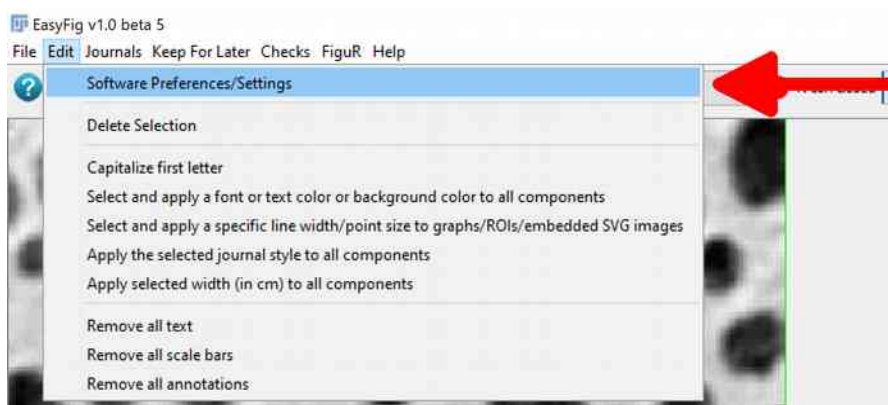
Press « Edit » Software Preferences »



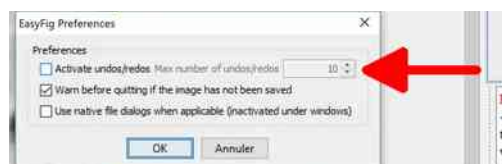
A dialog opens.

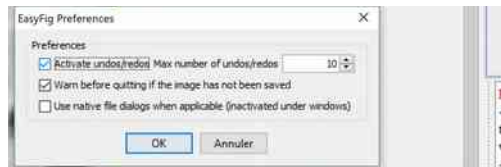
18.1) Undos/Redos

Undos/Redos are not active by default in SF.

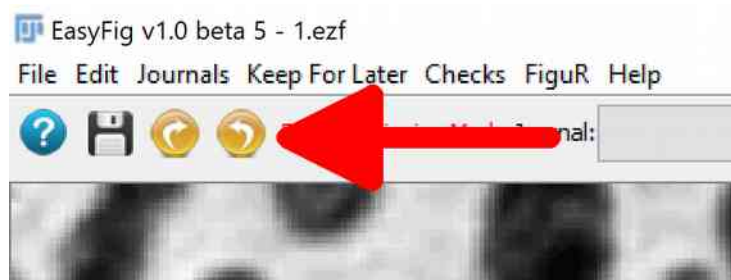


Press « Edit » Software Preferences »



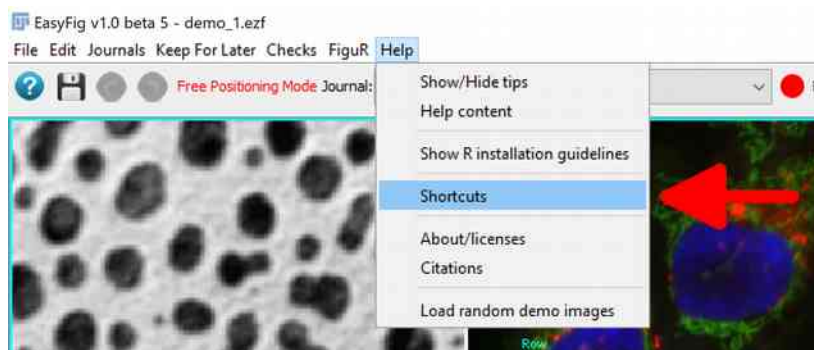


Tick the checkbox to activate undos/redos

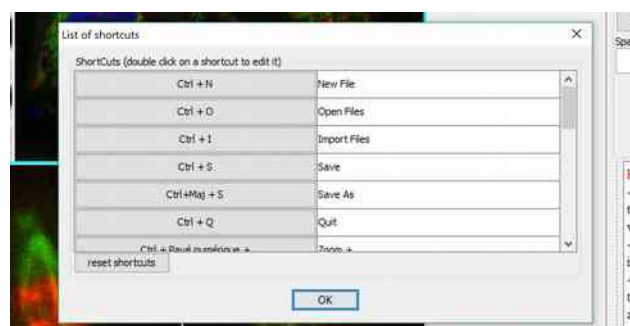


New buttons will become visible and clickable when changes are applied to the figure

18.2) Shortcuts



To edit EasyFig shortcuts select « Help > Shortcuts »



A dialog opens, click any shortcut to edit it. Press ok when done. Nb : you can also reset shortcuts to default from this dialog.