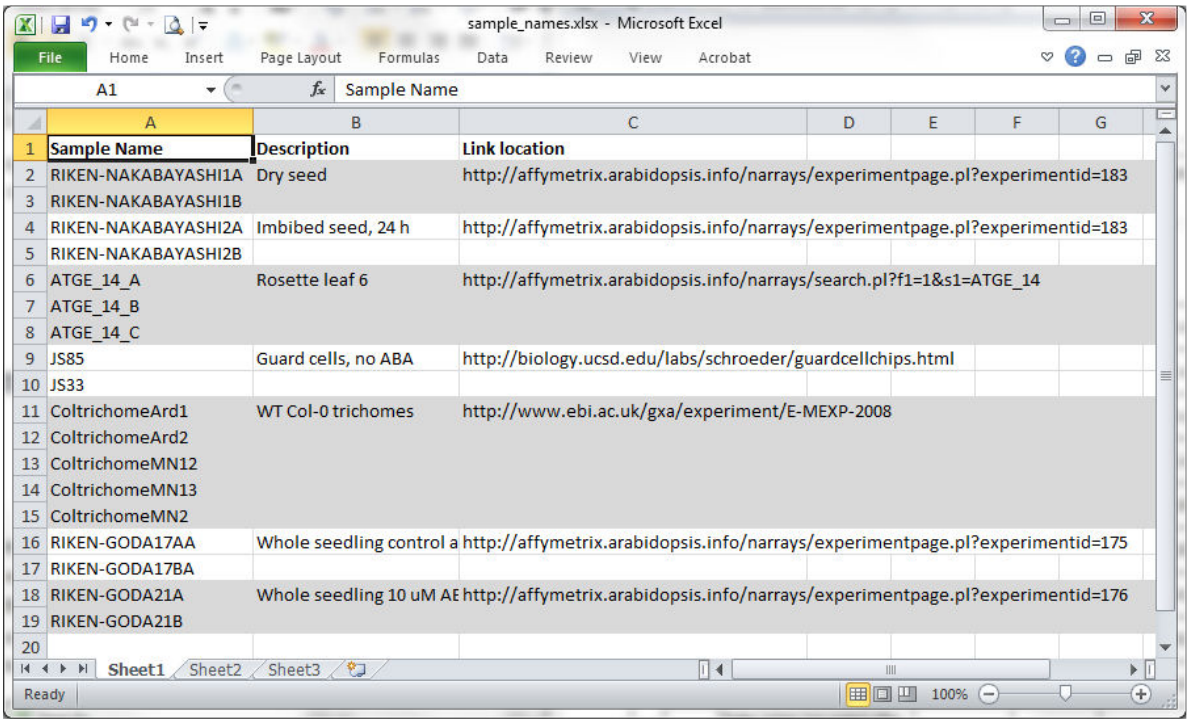
eFP Configurator Instructions

12 June 2022, Nicholas Provart

To create your own eFP Browser, you'll need two things: one, an **image** that depicts how you set up your experiment to obtain RNA, and second, **gene expression measurements** for all of the samples depicted in your image. Instructions on creating an appropriate image are available in a separate document.

"Configurating" an eFP Image

Once you have provided expression data to us and have created an image, it will be fairly easy to create your own eFP view. One final "nice-to-have" for making your eFP Browser is a list of the sample names, the corresponding sample information, and if desired, a linkout to a location on the internet (e.g., GEO or SRA record URL – copy this from the address bar of your browser).



	A	B	C
1	**Sample Name**	**Description**	**Link location**
2	RIKEN-NAKABAYASHI1A	Dry seed	http://affymetrix.arabidopsis.info/narrays/experimentpage.pl?experimentid=183
3	RIKEN-NAKABAYASHI1B		
4	RIKEN-NAKABAYASHI2A	Imbibed seed, 24 h	http://affymetrix.arabidopsis.info/narrays/experimentpage.pl?experimentid=183
5	RIKEN-NAKABAYASHI2B		
6	ATGE_14_A	Rosette leaf 6	http://affymetrix.arabidopsis.info/narrays/search.pl?f1=1&s1=ATGE_14
7	ATGE_14_B		
8	ATGE_14_C		
9	JS85	Guard cells, no ABA	http://biology.ucsd.edu/labs/schroeder/guardcellchips.html
10	JS33		
11	ColtrichomeArd1	WT Col-0 trichomes	http://www.ebi.ac.uk/gxa/experiment/E-MEXP-2008
12	ColtrichomeArd2		
13	ColtrichomeMN12		
14	ColtrichomeMN13		
15	ColtrichomeMN2		
16	RIKEN-GODA17AA	Whole seedling control a	http://affymetrix.arabidopsis.info/narrays/experimentpage.pl?experimentid=175
17	RIKEN-GODA17BA		
18	RIKEN-GODA21A	Whole seedling 10 uM AE	http://affymetrix.arabidopsis.info/narrays/experimentpage.pl?experimentid=176
19	RIKEN-GODA21B		
20			

Figure 1: Sample descriptions table.

We will provde you with a link to a customized instance of the eFP Configurator that will contain your image and dropdowns to your sample names.

Once you click on this link, the system will load your image file, the following should be visible on your screen (Figure 2).

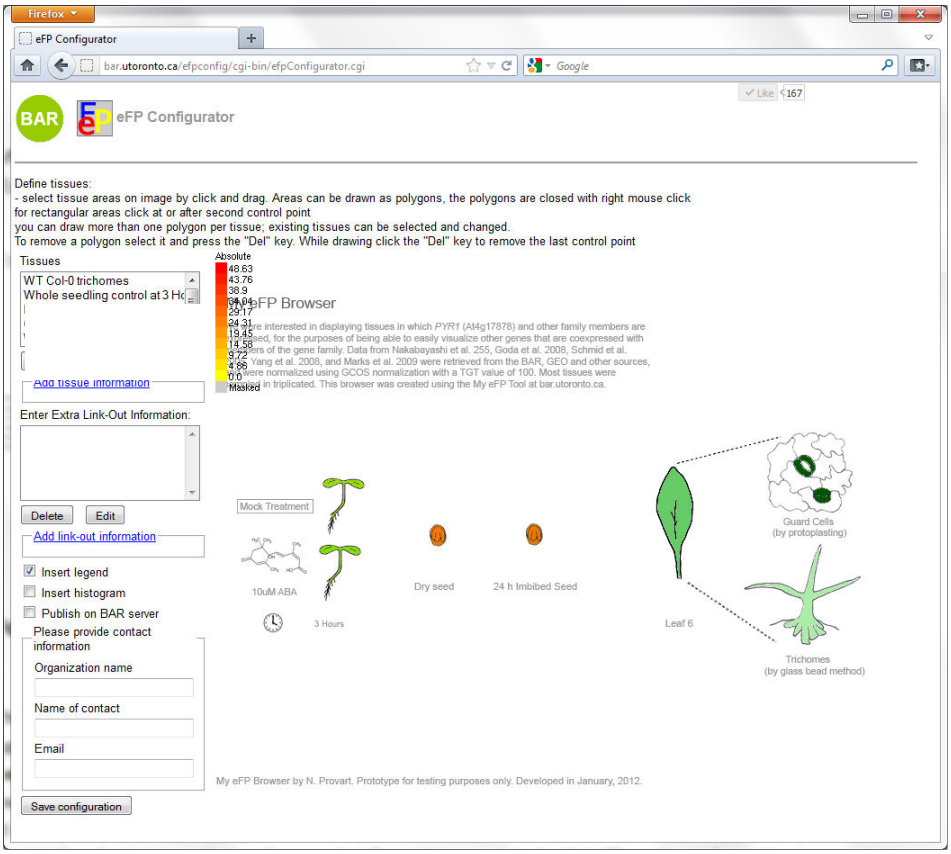
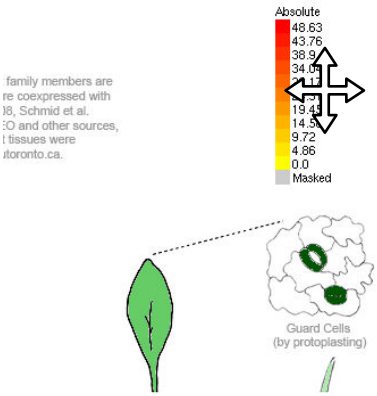


Figure 2: Initial eFP Configurator appearance after data and image have been uploaded.



It is now possible to move the colour scale to a desired position by mousing over it, holding the left mouse button and then dragging it to the position you want. A special 4-way arrow cursor will appear when your cursor is in the correct position to be able to move the legend, see Figure 3.

Figure 3: Positioning the legend.

The next step is to associate a given region on the image with particular samples in the data table you uploaded. The interface allows polygons of any shape to be defined on the image, and these will become clickable regions in the live version of your eFP Browser view. Further, when a user mouses over that region, information on the expression level (or fold-change) will appear in a tool-tip message. It is not required to define a region in this way, one can simple choose the colour in a particular sample depicted on the image and enter the sample information associated with it. The colour information is

used to actually key a sample name from the database you uploaded to a particular region on the image. Click on the *Add tissue information* tab to enter info to be associated with a region (Figures 4, 5).

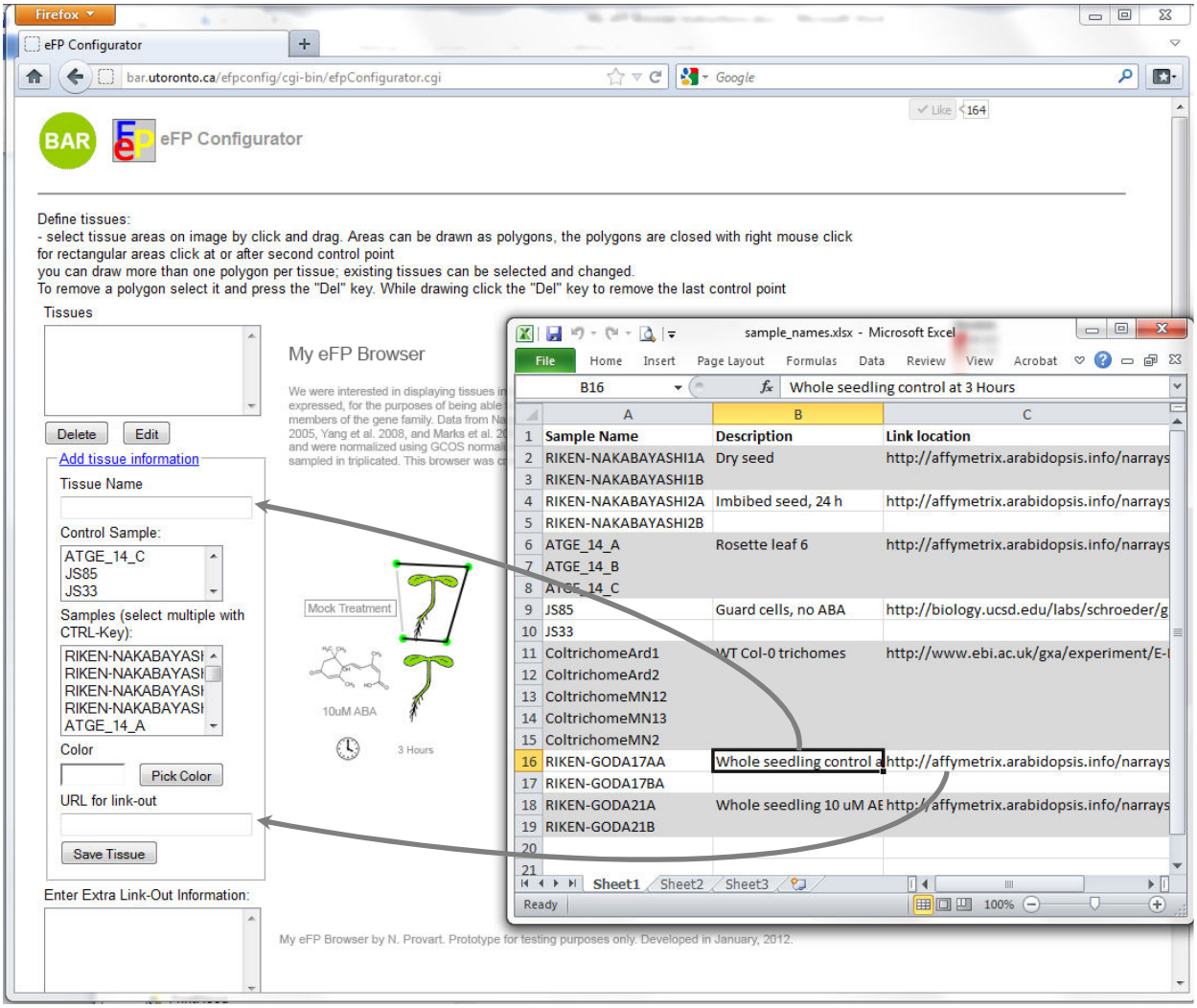


Figure 4: Defining a polygon – use the left mouse key to define the corners of the polygon and close it by right clicking. Misplaced polygons may be deleted by selecting them by clicking on them and then hitting the delete key. Sample information can be copy-pasted from the working table, and the colour that is associated with particular sample is chosen by clicking the *Pick Color* button and clicking on the appropriate colour in the image. Finally appropriate *Control Samples* and *Samples* are chosen – the names correspond to those in the uploaded data file. If a particular sample is itself a control, choose the same samples for both *Control Samples* and *Samples*. Hold down the Ctrl key to select multiple samples. Click the *Save Tissue* button to save the information.

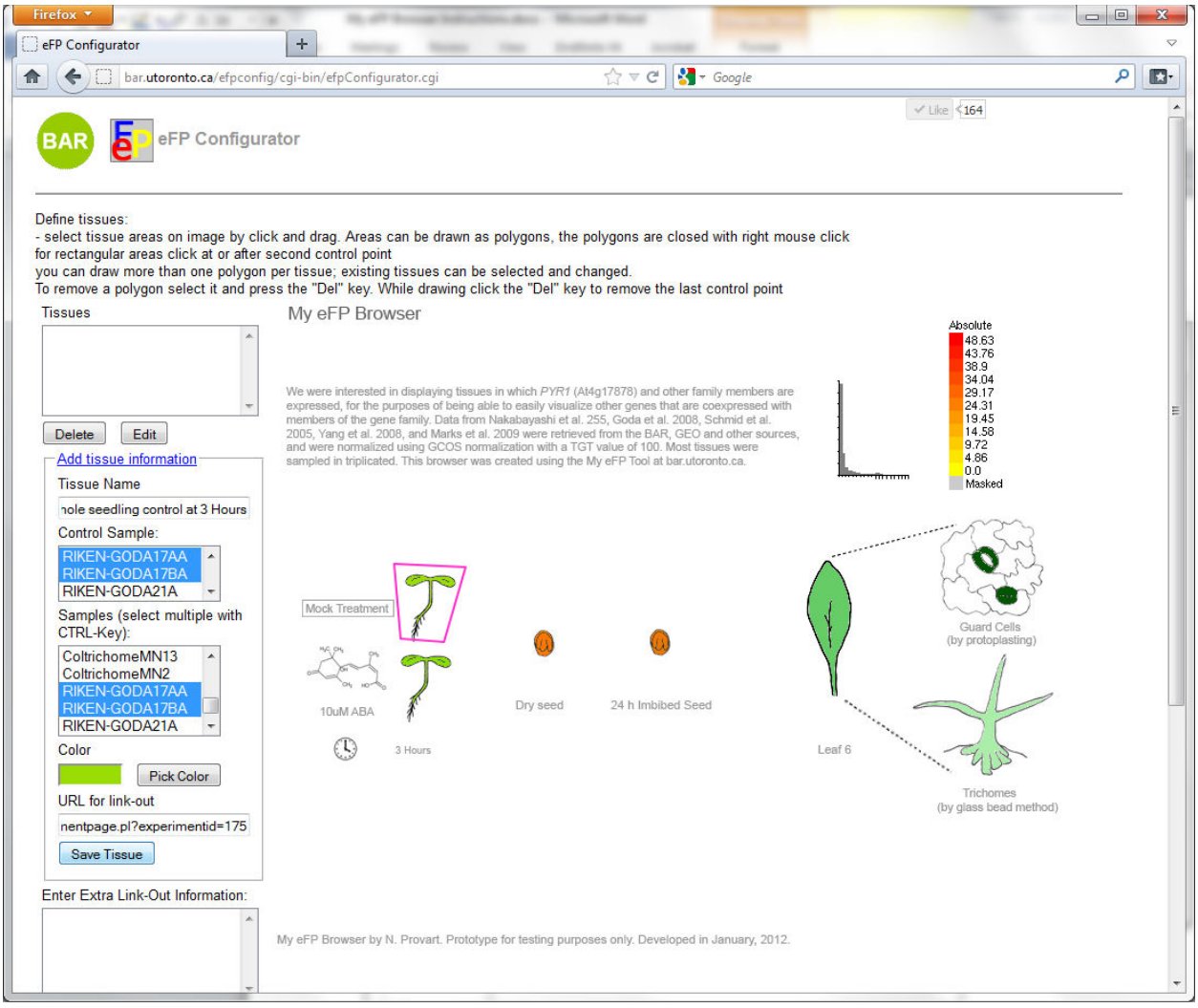


Figure 5: Adding sample information, picking a colour associated with a sample, and adding a URL.

It is also possible to add link-outs to other parts of the image. Define a polygon and then click on the *Add Link-Out Information* on the left panel and enter the title and URL, and click the *Save Link* button. At this point, you should also add your contact information in the Contact Information box. Choose whether you'd like the view to be public (*Publish on BAR Server* – note, we will communicate with you beforehand via email about when to do this, and a hidden link can be provided for review purposes…)

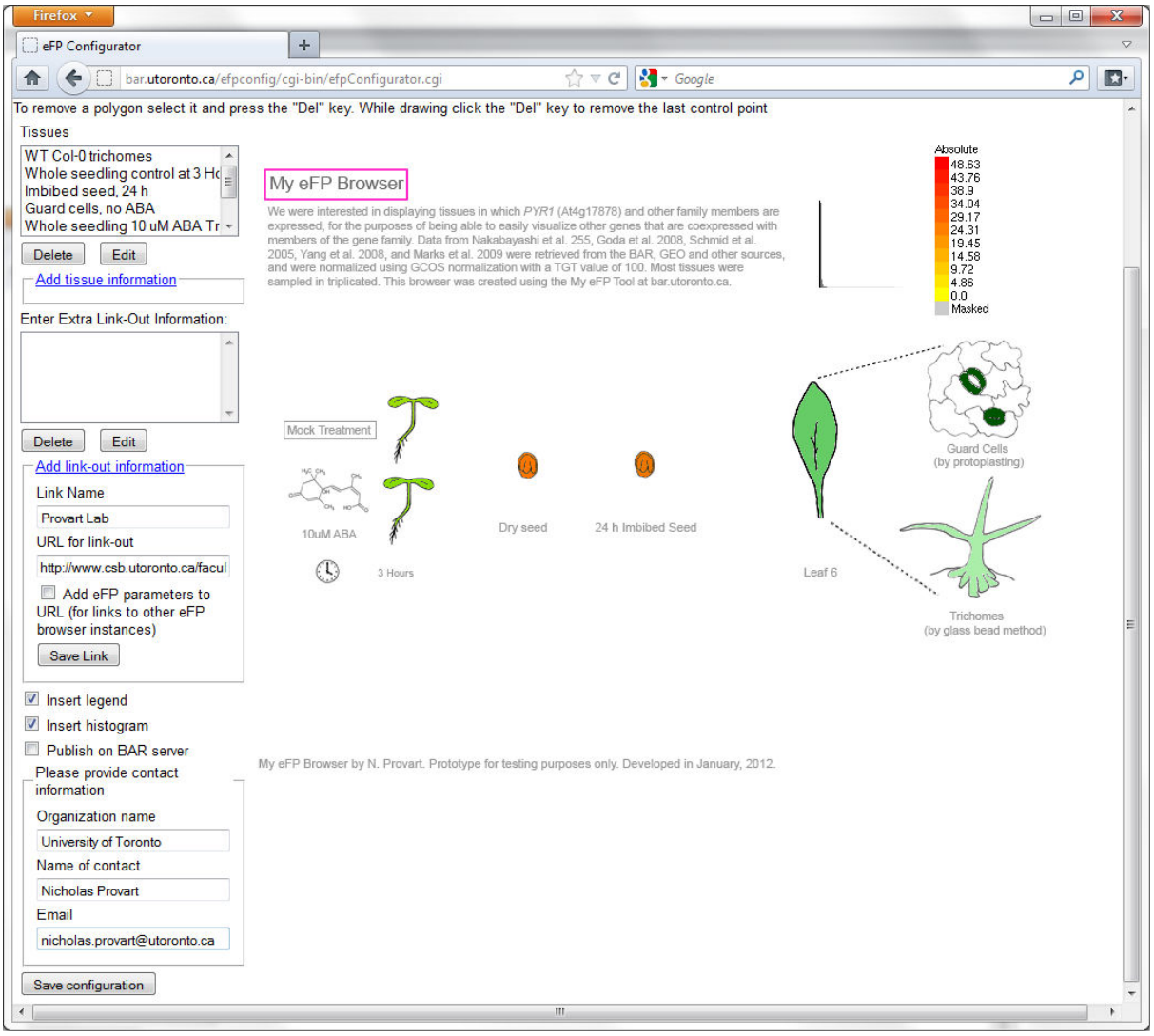


Figure 6: Adding a link-out to a non-sample part of the image, and entering your contact information.

When you have saved your configuration, you will be taken to a page that looks like that in Figure 7. On this page you can save the link to return to it later, and **it is highly recommend to also download the XML configuration file for safe-keeping (right click, Save As… on Windows, or Ctrl and click, Save As… on a Mac)**. You're done! Let us know that you've completed the configuration and we'll follow up with a testing link – send us the XML file too just in case.

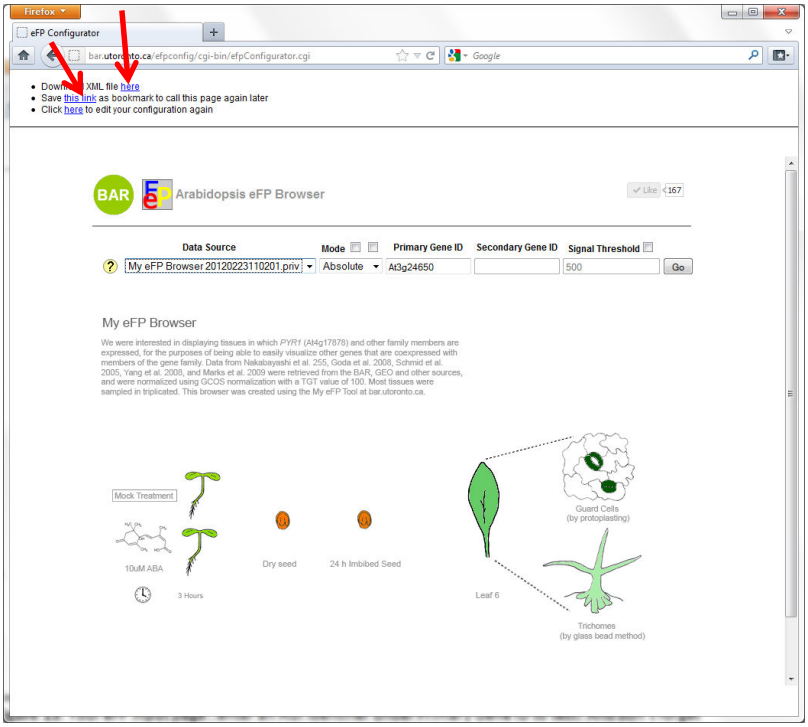


Figure 7: Your "My eFP Browser" input page…enter an AGI identifier under Primary Gene ID to test it! And don't forget to bookmark the link at the top of the page to return to your view later on. It is also advisable to save the XML configuration file.

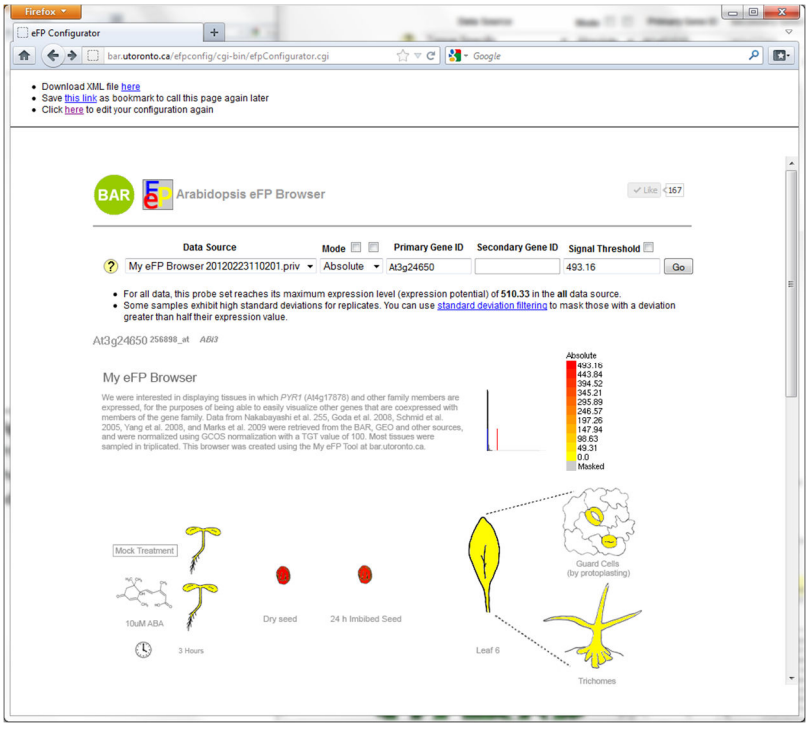


Figure 8: My eFP Browser output for the *ABI3* gene, At3g24650. Note this might not work for non-Arabidopsis eFP views!