

TF Condition Viewer 3.0

User Manual

CytoPathfinder

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Requirements

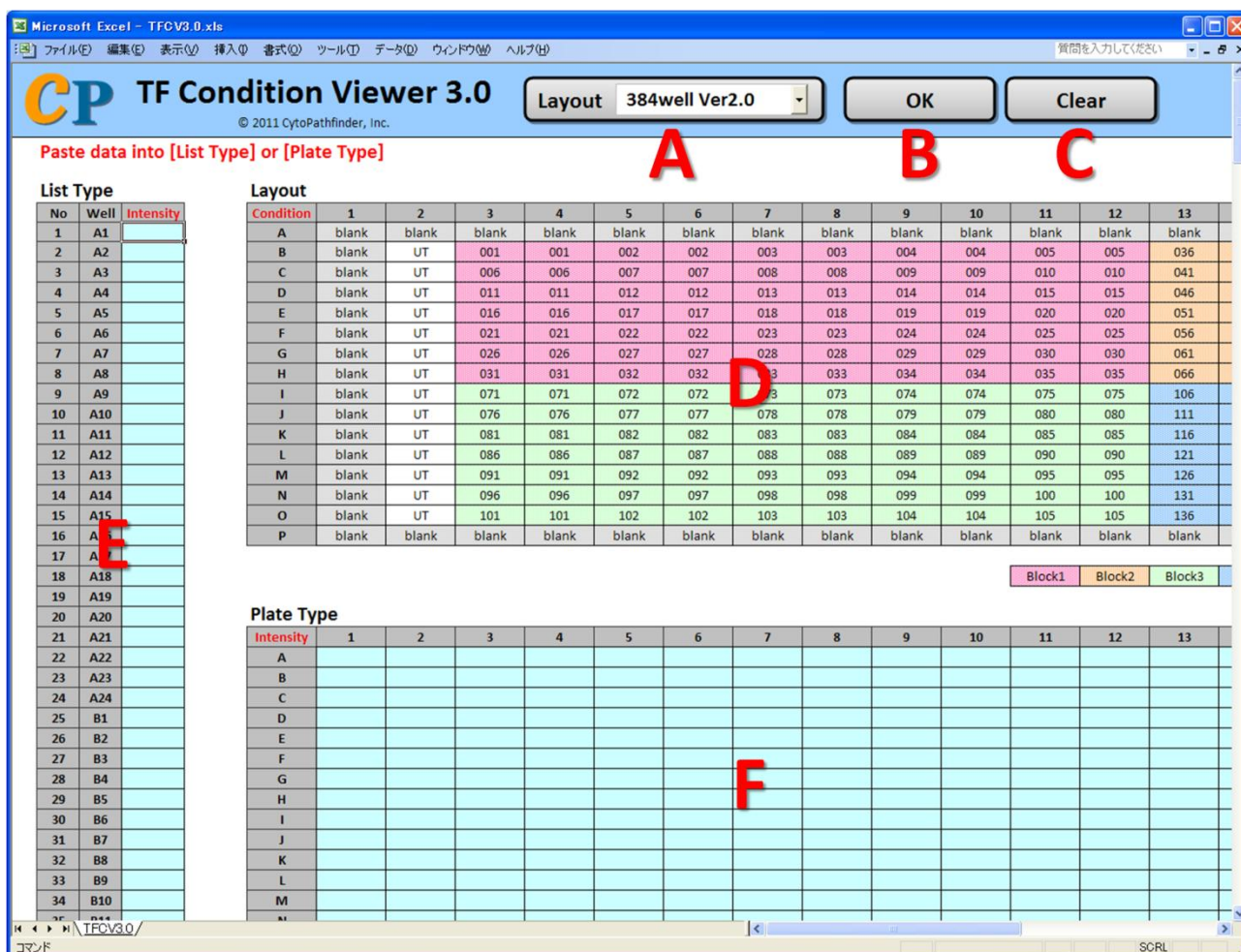
- Software: Excel2003 or later version.
- Hardware: Compliant with Excel2003

Installation

As the TF Condition Viewer (TFCV) is based on Excel VBA, please change the macro security settings in Microsoft Excel to run the application as necessary. If you need help to change the macro security settings, please go to the Microsoft Office website.

- [Excel2003](#)
- [Excel2007](#)
- [Excel2010](#)

Operation

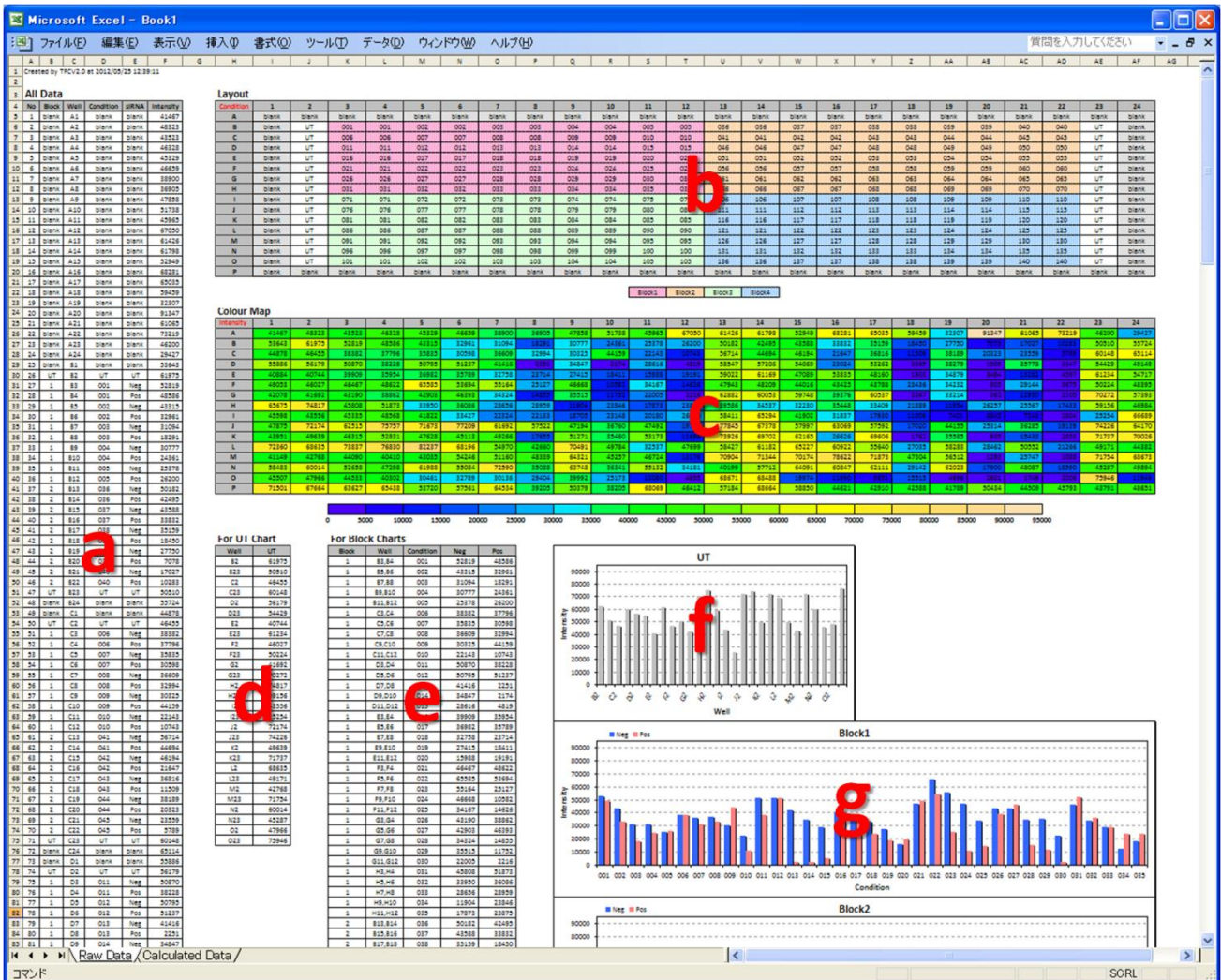


A: the layout drop-down list. **B:** the “OK” button to create the data summarized workbook.

C: the “Clear” button to clear all input areas (**E, F**). **D:** the selected layout. **E, F:** the data input area.

1. Choose the layout type of the transfection conditions plate which was used for the assay; the selected layout is shown at the “Layout” area (**D**). The layout drop-down list is common to human and mouse/rat (**A**). The appropriate version is marked on the product label. Please note that if you change the plate type (96-, 384- or 1536 well-plate), any numeric data which have already been added to the input areas (**E, F**) will be cleared.
2. Paste your data into the input area **E** or **F** according to the data format of your plate reader (list/plate type). (The input area which has not been entered directly will be filled automatically.)
3. Click the “OK” button (**B**) to analyse the data and to create the new data workbook which contains the 2 worksheets shown below.
4. Click the “Clear” button (**C**) to clear all input areas as necessary.

Result Workbook [Worksheet1: Raw Data]



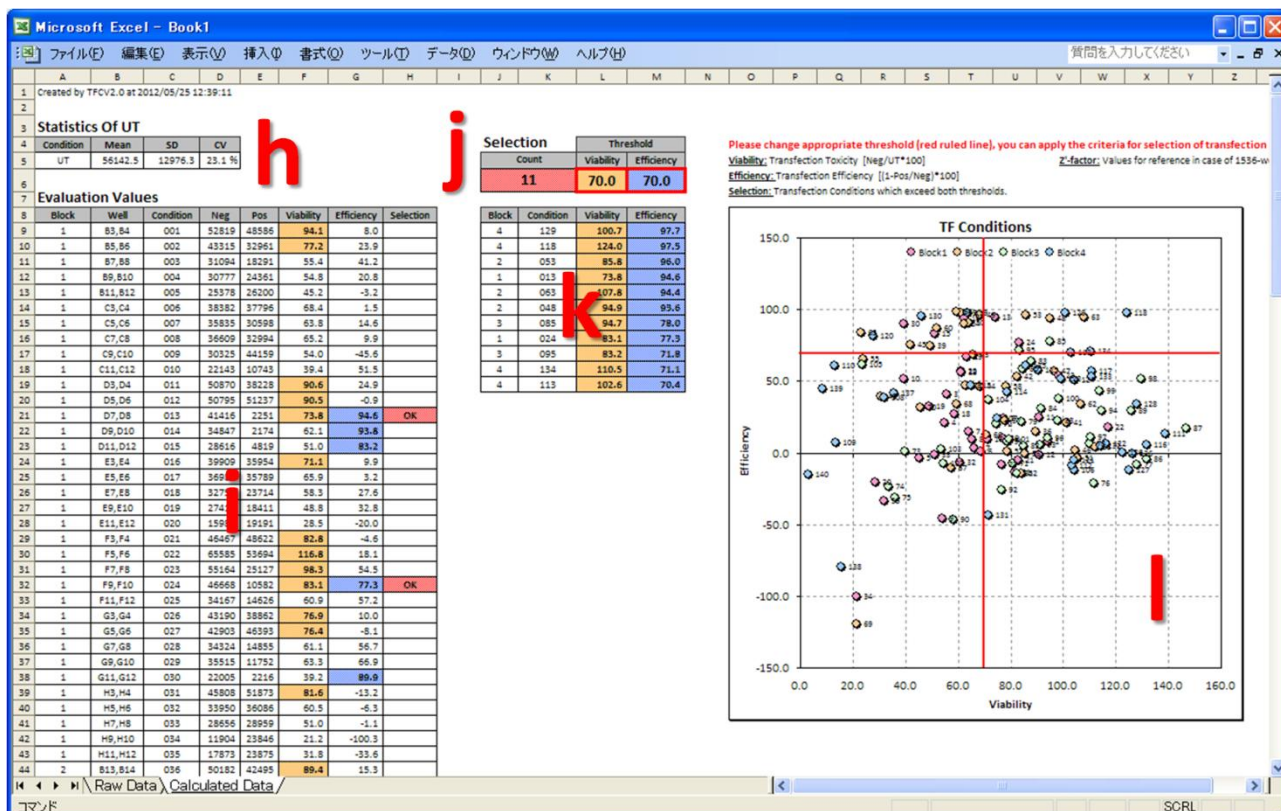
a. The data list consists of the layout information (the plate/block number, the well address, the conditions number, siRNA names) and the intensity data.

- Plate: the plate number. In case of 96-well plates, the layout consists of four plates.
- Block: the group number. Each layout consists of four blocks and each block contains different concentrations of buffer and siRNA.
- Well: the address of the well location.
- Condition: the serial number of condition. Each condition consists of a set of “Neg” and “Pos” siRNAs.
- siRNA: the type of siRNA.
 - ✓ blank: “blank” means the well does not contain any reagents, to reduce edge effects.
 - ✓ UT: “un-transfected” does not contain any reagents, used as the control against “Neg” when the evaluation of the transfection toxicity.
 - ✓ Neg: the negative control siRNA which does not target any gene product.
 - ✓ Pos: the positive control siRNA which leads to cytotoxicity.

b. The table of the blocks and the conditions.

- c.** The table of the intensity data and a colour map. In case of Excel2003, the colour map and its legend are made from AutoShapes which are the drawing objects of Excel. In case of Excel2007 or later versions, the colour map is represented by Excel conditional formatting excepting the colour legend.
- d.** The collected data for “UT” chart (**f**).
- e.** The collected data for each block chart (**g**).
- f.** The bar chart of “UT”s.
- g.** The bar charts of each condition of each block.

Result Workbook [Worksheet2: Calculated Data]



- h.** The basic statistical data (mean, sd and cv) of “UT”
- i.** The list of the evaluation of data for each condition such as “Viability” and “Efficiency”.
 - **Viability:** the transfection cytotoxicity index expressed as POC (percent of control) of “Neg” against “UT”.

$$Viability_i = \frac{\bar{x}_{Neg_i}}{\bar{x}_{UT}} \times 100 \quad (i: \text{conditions})$$

- **Efficiency:** the transfection efficiency expressed as 100-POC of “Pos” against “Neg”.

$$Efficiency_i = \left(1 - \frac{\bar{x}_{Pos_i}}{\bar{x}_{Neg_i}}\right) \times 100 \quad (i: \text{conditions})$$

- **Selection:** the flags transfection conditions which exceed both of the above criteria.

- j.** The threshold values for both criteria together with the number of the conditions selected using those criteria. The threshold values can be changed using these boxes.
- k.** The list of the selected conditions. As each threshold value is changed, this list will be updated automatically.
- l.** The scatter plot for all conditions. The red horizontal/vertical lines represent the threshold values and will be adjusted when the threshold value is changed. The selected conditions shown in the table **k** are located at the top-right of the scatter plot.