



APR 15, 2024

🌐 Creating Plate Layout in FIVTools

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ABSTRACT

Plate layout creator in FIVtools

OPEN  ACCESS



DOI:

dx.doi.org/10.17504/protocols.io.261ged62yv47/v1

Protocol Citation: Jason Waligorski 2024. Creating Plate Layout in FIVTools. **protocols.io** <https://dx.doi.org/10.17504/protocols.io.261ged62yv47/v1>

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Protocol status: Working
We use this protocol and it's working

Created: Jun 21, 2023

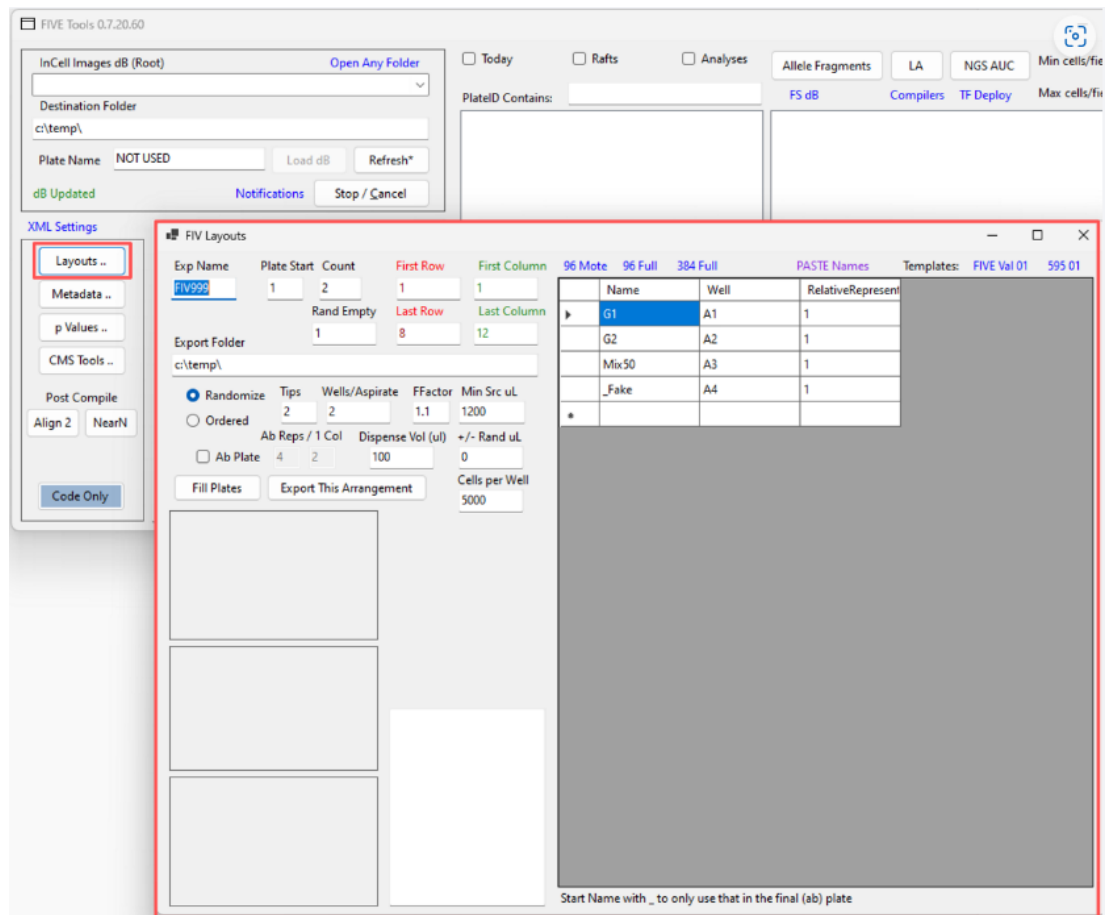
Last Modified: Apr 15, 2024

PROTOCOL integer ID: 83830

Creating Plate Layout in FIVTools

1 Open FIVTools

2 Click *Layouts*



- 3 Update *Exp Name* field (highlighted in blue above) to the corresponding FIV experiment Number (make sure to keep "FIV" in the name)
- 4 Click once on the *Export Folder* field so it updates the folder location based on the corresponding FIV experiment number
- 5 Choose the desired number of 96-well plates by typing 1, 2, 3, or 4 in Count

FIV Layouts

Exp Name: FIV816 Plate Start: 1 Count: 2 First Row: 1 First Column: 1
 Last Row: 8 Last Column: 12
 Export Folder: R:\FIVE\Exp\FIV816\4 Mapping\51\

☒ Randomize ☐ Ordered
 Tips: 2 Wells/Aspirate: 2 FFactor: 1.1 Min Src uL: 1200
 Ab Reps / 1 Col: 4 Dispense Vol (uL): 100 +/- Rand uL: 0
☐ Ab Plate

Fill Plates **Export This Arrangement** Cells per Well: 4000

96 Mote 96 Full 384 Full PASTE Names

Name	Well	RelativeRepresent
AIP	A1	1
FAM195A	A2	1
AIFM1	A3	1
TIMM8A	A4	1
ASAH2	B1	1
SLC25A51	B2	1
BRI3BP	B3	1
STARD3	B4	1
NONTARGET	C1	1
MFN2	C2	1
ATP5G3	C3	1
R94Q	C4	1
**		

94 Total
 AIP: 6 (plt,row,col)
 (0.43, 4.1, 4.4)
 FAM195A: 8 (plt,row,col)
 (0.57, 5.0, 7.8)
 AIFM1: 8 (plt,row,col)
 (0.50, 4.0, 5.8)
 TIMM8A: 8 (plt,row,col)
 (0.50, 4.3, 4.3)
 ASAH2: 8 (plt,row,col)
 (0.50, 4.8, 8.3)
 SLC25A51: 8 (plt,row,col)
 (0.50, 4.9, 6.8)

Start Name with _ to only use that in the final (ab) plate

6 Select 96 Mote to exclude plating from the outermost wells

FIV Layouts

Exp Name: FIV816 Plate Start: 1 Count: 2 First Row: 1 First Column: 1 96 Mote 96 Full 384 Full PASTE Names

Export Folder: R:\FIVE\Exp\FIV816\4 Mapping\S1\

Randomize: ☒ Tips: 2 Wells/Aspirate: 2 FFactor: 1.1 Min Src uL: 1200

Ordered: ☐ Ab Plate: ☐ Ab Reps / 1 Col: 4 2 Dispense Vol (uL): 100 +/- Rand uL: 0

Fill Plates: Export This Arrangement Cells per Well: 4000

Well Map:

94 Total

AIP: 6 (plt,row,col)
(0.43, 4.1, 4.4)

FAM195A: 8 (plt,row,col)
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ASAH2	B1	1
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BRI3BP	B3	1
STARD3	B4	1
NONTARGET	C1	1
MFN2	C2	1
ATP5G3	C3	1
R94Q	C4	1

Start Name with _ to only use that in the final (ab) plate

7 Select "384 Full" for a 384 well plate

8 If the layout is not standard (does not fall within 96 mote, 96 full, or 384 full), adjust the First Row, First Column, Last Row, and Last Column fields to fit your custom plate format.

FIV Layouts

Exp Name: FIV816 Plate Start: 1 Count: 2

First Row: 1 First Column: 1

Last Row: 8 Last Column: 12

Export Folder: R:\FIVE\Exp\FIV816\4 Mapping\S1\

☒ Randomize ☐ Ordered

Tips: 2 Wells/Aspirate: 2 FFactor: 1.1 Min Src uL: 1200

Ab Reps / 1 Col: 4 Dispense Vol (uL): 100 +/- Rand uL: 0

☐ Ab Plate

☒ Fill Plates ☐ Export This Arrangement

Cells per Well: 4000

96 Mote 96 Full 384 Full PASTE Names

Name	Well	RelativeRepresent
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94 Total

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SLC25A51: 8 (plt,row,col)
(0.50, 4.9, 6.8)

Start Name with _ to only use that in the final (ab) plate

- 9 If doing an antibody plate, check the “Ab Plate” box and:
Make “Count” = 0 for one antibody plate
Make “Count” = 2 for two 96-well plates and an antibody plate

- 10 Change “Cells per Well” to desired plating density

FIV Layouts

Exp Name: FIV816 Plate Start: 1 Count: 2 First Row: 1 First Column: 1
 Last Row: 8 Last Column: 12
 Export Folder: R:\FIVE\Exp\FIV816\4 Mapping\S1\

Randomize ☒ Tips: 2 Wells/Aspirate: 2 FFactor: 1.1 Min Src uL: 1200
 Ordered ☐ Ab Reps / 1 Col: 4 Dispense Vol (uL): 100 +/- Rand uL: 0
☐ Ab Plate

Fill Plates Export This Arrangement Cells per Well: 4000

AIP
 FAM195A
 AIFM1
 TIMM8A
 ASAH2
 SLC25A51
 BRI3BP
 STARD3
 NONTARGET
 MFN2
 ATP5G3
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BRI3BP	B3	1
STARD3	B4	1
NONTARGET	C1	1
MFN2	C2	1
ATP5G3	C3	1
R94Q	C4	1
Start Name with _ to only use that in the final (ab) plate		

- Copy experimental condition names (often genotypes, dosages, G1/G2, etc.) and click "PASTE Names" to auto-fill the 12-well source plate.

FIV Layouts

Exp Name: FIV816 Plate Start: 1 Count: 2 First Row: 1 First Column: 1
 Last Row: 8 Last Column: 12
 Export Folder: R:\FIVE\Exp\FIV816\4 Mapping\S1\

☒ Randomize Tips: 2 Wells/Aspirate: 2 FFactor: 1.1 Min Src uL: 1200
☐ Ordered
☐ Ab Plate 4 2 100 +/- Rand uL: 0

Fill Plates **Export This Arrangement** **Cells per Well: 4000**

96 Mote 96 Full 384 Full PASTE Names

Name	Well	RelativeRepresent
AIP	A1	1
FAM195A	A2	1
AlFM1	A3	1
TIMM8A	A4	1
ASAH2	B1	1
SLC25A51	B2	1
BRI3BP	B3	1
STARD3	B4	1
NONTARGET	C1	1
MFN2	C2	1
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 (0.50, 4.9, 6.8)

Start Name with _ to only use that in the final (ab) plate

- 12 Name can also be manually filled
- 13 The *Well* column can only have row/column combinations of a 12-well plate (A-C, 1-4). Please note which names (experimental conditions) correspond to which wells.
- 14 *Relative Representation* allows you to assign different weights for representation in the 96-well plates

15 Use the underscore symbol to have a cell type only show up in the antibody plate layout (for example: “_cell type”)

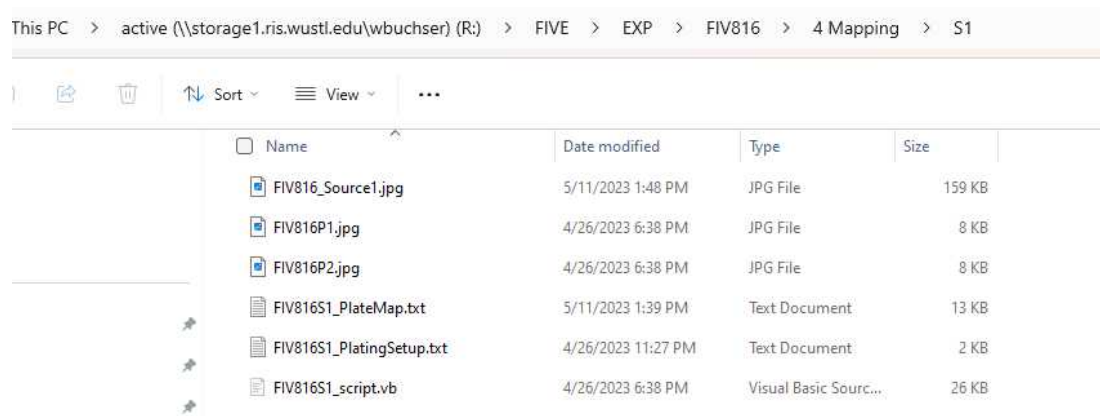
16 Click *Fill Plates* (in red)

The screenshot shows the FIV Layouts software interface. On the left, there are input fields for 'Exp Name' (FIV816), 'Plate Start' (1), 'Count' (2), 'First Row' (1), 'First Column' (1), 'Last Row' (8), and 'Last Column' (12). Below these are fields for 'Export Folder' (R:\FIVE\Exp\FIV816\4 Mapping\S1\), 'Randomize' (selected), 'Tips' (2), 'Wells/Aspirate' (2), 'FFactor' (1.1), 'Min Src uL' (1200), 'Ab Reps / 1 Col' (4), 'Dispense Vol (ul)' (100), and 'Cells per Well' (4000). A red box highlights the 'Fill Plates' button, and a blue box highlights the 'Export This Arrangement' button. The main area displays a randomized plate layout with colored circles representing different conditions. To the right of the plate layout is a list of conditions: AIP, FAM195A, AIFM1, TIMM8A, ASAH2, SLC25A51, BRI3BP, STARD3, NONTARGET, MFN2, ATP5G3, and R94Q. Below this list is a summary of the total number of wells and the distribution of conditions across the plate. A table on the right side of the interface shows the 'Name', 'Well', and 'RelativeRepresent' for each condition.

Name	Well	RelativeRepresent
AIP	A1	1
FAM195A	A2	1
AIFM1	A3	1
TIMM8A	A4	1
ASAH2	B1	1
SLC25A51	B2	1
BRI3BP	B3	1
STARD3	B4	1
NONTARGET	C1	1
MFN2	C2	1
ATP5G3	C3	1
R94Q	C4	1

17 A randomized plate layout will be populated based on your input criteria. Each condition will have a unique color in the layout window. Try to make sure the empty wells (positions with white space/no circles) are not on any edges. Also if doing multiple plates, make sure the empty wells are oriented differently across plates.

- 18 Go into the “4 Mapping” folder of the respective FIV experiment folder and make sure there is a PlateMap, PlatingSetup, and script.



- 19 After source and destination plates are physically created, excute Biomek plating in accordance with

[Biomek 96-well plating - Google Docs](#)