

## Quick Guide to TCID Macro

Below is the screenshot of the TCID - Cutoff Macro which is based on the TCID50 macro.

Microsoft Excel - TCID - cutoff1

File Edit View Insert Format Tools Data Window Help

TCID ASSAY

Expt. ID: XXXX-XX Virus Name: XXX Assay Day: 2  
 Expt. Date: ##### Virus Date: Assay Cells: TZM-bl  
 Performer: Wenhong

Open File

# pos	4	4	4	4	4	2	0	0	0	0	c ctrl.	bkg.
Mean	659742	483191	158725	39218	11131	3860	2212	1321	1185	882	816	732
A	678102	426440	138527	32240	10508	3530	1667	1113	1052	929	763	760
B	673914	533502	180407	44456	11290	3886	1705	1045	986	876	721	720
C	682959	505226	165318	42916	11361	4423	2287	1341	1151	681	676	732
D	603991	467597	150646	37261	11363	3600	3188	1785	1551	1041	1102	714
E	505109	265767	72036	15947	4429	2065	1066	803	721	799	649	749
F	478866	213843	46004	10748	3402	1666	924	931	699	675	702	686
G	478864	240426	52818	11515	3843	2158	1771	1189	841	1056	743	679
H	492717	211563	53044	14174	4671	2225	1694	1517	1159	950	830	645
Mean	488889	232900	55976	13096	4086	2029	1364	1110	855	870	731	690
# pos	4	4	4	4	4	3	0	0	0	0	0	0

Pos. Cutoff: 1829 Number of Replicates: 4 Start Dilution: 10  
 Cutoff Factor: 2.50 Dilution Per ml: 5 Dilution Factor: 5

Dilution	# pos	# neg	pos & neg totals	% neg	Dilution	TCID50/Well
1	4	0	26	0	10	15625
2	4	0	22	0	50	3125.0
3	4	0	18	0	250	625.0
4	4	0	14	0	1250	125.000
5	4	0	10	0	6250	25.000
6	4	0	6	0	31250	5.000
7	2	2	2	2	156250	1.000
8	0	4	0	6	781250	0.2000
9	0	4	0	10	3906250	0.0400
10	0	4	0	14	19531250	0.0080
11	0	4	0	18	97656250	0.00160

(totals) 26 18 Cutoff RLU: 150000  
 Dilution at 50% is: 156250  
 TCID/ml: 781,250 Dilution at 150,000 RLU: 65

TCID50

1. Click the “Open File” button to import the raw data file to the macro file.
2. If the text font color is orange, it means that this information can be changed by the user.
3. If the text font color is blue, it means that this information needs to be entered by the user.
4. The TCID value will be shown in the red box in red font.
5. Drop down list allows you to choose which virus to analyze. Virus 1 or Virus 2. (See figure below)
6. If Virus 1 is selected, the top half of raw data box will be highlighted (see green box below) and Virus 1 will be shown next to the box.

Select which virus to analyze!

TCID ASSAY

Open File

Expt. ID: XXXX-XX Virus Name: XXX

Expt. Date: ##### Virus Date:

Assay Day: 2 Assay Cells: TZM-bl

Performer: Wenhong

# pos	4	4	4	4	4	2	0	0	0	0	c ctrl.	bkgr.
Mean	659742	483191	158725	39218	11131	3860	2212	1321	1185	882	816	732
A	678102	426440	138527	32240	10508	3530	1667	1113	1052	929	763	760
B	673914	533502	180407	44456	11290	3886	1705	1045	986	876	721	720
C	682959	505226	165318	42916	11361	4423	2287	1341	1151	681	676	732
D	603991	467597	150646	37261	11363	3600	3188	1785	1551	1041	1102	714
E	505109	265767	72036	15947	4429	2065	1066	803	721	799	649	749
F	478866	213843	46004	10748	3402	1666	924	931	699	675	702	686
G	478864	240426	52818	11515	3843	2158	1771	1189	841	1056	743	679
H	492717	211563	53044	14174	4671	2225	1694	1517	1159	950	830	645
Mean	488889	232900	55976	13096	4086	2029	1364	1110	855	870	731	690
# pos	4	4	4	4	4	3	0	0	0	0	0	bkgr.

Pos. Cutoff: 1829 Number of Replicates: 4 Start Dilution: 10 # Pos Changed

Cutoff Factor: 2.50 Dilution Per ml: 5 Dilution Factor: 5

Dilution # pos # neg pos & neg totals % neg Dilution TCID50/Well

It will be the same for Virus 2. If Virus 2 is selected, the bottom half of the data box will be highlighted and Virus 2 will be shown next to the box.

Select virus 2

The screenshot shows a Microsoft Excel spreadsheet titled "TCID - cutoff1". The spreadsheet contains a table for TCID assay data. At the top, there are fields for "Expt. ID", "Expt. Date", "Performer", "Virus Name", "Virus Date", "Assay Day", and "Assay Cells". A "Virus 2" dropdown menu is visible in cell B1. The main data table has columns for "# pos", "Mean", and "c ctrl." for various assays (A-H). The "Mean" column values are: 659742, 483191, 158725, 39218, 11131, 3860, 2212, 1321, 1185, 882, 816, 732. The "c ctrl." column values are: 732, 760, 720, 732, 714, 749, 686, 679, 645, 690. There are double-line orange boxes around the "Mean" and "c ctrl." values for rows 9 and 20. A green arrow points to the "Virus 2" label in row 17. The status bar at the bottom shows "Sum=187600" and "NUM".

# pos	Mean	c ctrl.	bkgr.
4	659742	732	
4	483191	760	
4	158725	720	
4	39218	732	
4	11131	714	
4	3860	749	
2	2212	686	
0	1321	679	
0	1185	645	
0	882	690	
0	816		
0	732		

- Cells where the user may need to input different information, such as the cutoff factor, start dilution, dilution factor, etc are indicated by the double line orange box. Please enter the values directly into these double line orange boxes.

Microsoft Excel - TCID - cutoff1

File Edit View Insert Format Tools Data Window Help

KB TZM-bl

Expt. ID: XXXX-XX Virus Name: XXX  
 Expt. Date: ##### Virus Date:  
 Performer: Wenhong Assay Day: 2  
 Assay Cells: TZM-bl

# pos 4 4 4 4 4 4 2 0 0  
 Mean 659742 483191 158725 39218 11131 3860 2212 1321 1185

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
11 A	678102	426440	138527	32240	10508	3530	1667	1113	1052	929	763	760		
12 B	673914	533502	180407	44456	11290	3886	1705	1045	986	876	721	720		
13 C	682959	505226	165318	42916	11361	4423	2287	1341	1151	681	676	732		
14 D	603991	467597	150646	37261	11363	3600	3188	1785	1551	1041	1102	714		
15 E	505109	265767	72036	15947	4429	2065	1066	803	721	799	649	749		
16 F	478866	213843	46004	10748	3402	1666	924	931	699	675	702	686		
17 G	478864	240426	52818	11515	3843	2158	1771	1189	841	1056	743	679		
18 H	492717	211563	53044	14174	4671	2225	1694	1517	1159	950	830	645		

Mean 488889 232900 55976 13096 4086 2029 1364 1110 855 870 731 690

# pos 4 4 4 4 4 3 1 0 0 0 0 0 c ctrl. bkgr.

Pos. Cutoff: 1829 Number of Replicates: 4 Start Dilution: 10 # Pos Changed

Cutoff Factor: 2.50 Dilution Per ml: 5 Dilution Factor: 5

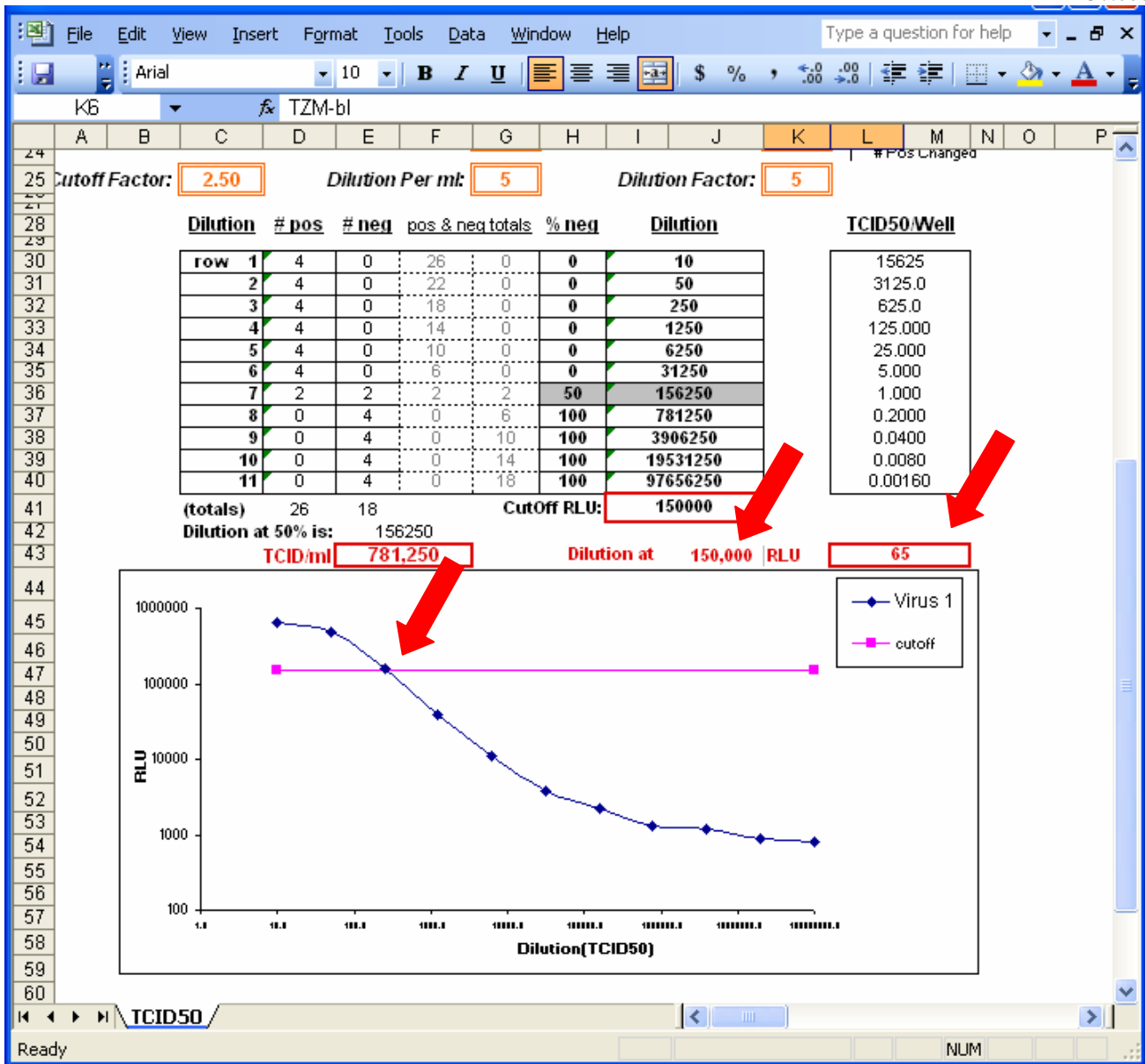
Dilution	# pos	# neg	pos & neg totals	% neg	Dilution	TCID50/Well
1	4	0	26	0	10	15625
2	4	0	22	0	50	3125.0
3	4	0	18	0	250	625.0
4	4	0	14	0	1250	125.000
5	4	0	10	0	6250	25.000
6	4	0	6	0	31250	5.000
7	2	2	2	2	156250	1.000
8	0	4	0	6	781250	0.2000
9	0	4	0	10	3906250	0.0400
10	0	4	0	14	19531250	0.0080
11	0	4	0	18	97656250	0.00160

(totals) 26 18 CutOff RLU: 150000

Dilution at 50% is: 156250

TCID/ml 781,250 Dilution at 150,000 RLU 65

8. The default cutoff RLU value is 150,000. Users can change this value if so desired.
9. The estimated Dilution value for the selected CutOff RLU will be automatically calculated by the macro. For example, below the estimated dilution value for 150,000 RLU is 65 (Indicated by the red arrow below).



For questions or comments regarding the macro, please contact Peter Gao ([juanfei.gao@duke.edu](mailto:juanfei.gao@duke.edu)), Duke Central Immunology Laboratory.