APCRA2019 MEA Acute TCPL Level 0 Data Prep Running Log

Date: 2020-07-27

Level 0 - Gather and Check Files:

Reading from APCRA2019\_neural\_stats\_files\_log\_2020-05-21.txt...

Got 94 files.

The following files appear to be named incorrectly:

filenames run.type.tags

1: TC\_20190417\_MW67-3707\_13\_00(000).csv 00

2: TC\_20190417\_MW67-3707\_15\_01(000).csv 01

APCRA2019\_check\_summary\_2020-07-27.txt is ready.

Level 1 - Extract All Data:

Reading from APCRA2019\_neural\_stats\_files\_log\_2020-05-21.txt...

Got 94 files.

Reading data from files...

..............................................................................................

APCRA2019\_dat1\_2020-07-27.RData is ready.

Summary of dates/plates with wllq=0 at Level 1:

experiment.date plate.id wllq\_set\_to\_zero

1: 20190326 MW1236-16 C3,C4,C5,C6,D2,D3,D4,D5,D6,D7,E8

2: 20190326 MW1236-17 C3,C4,C6,C7,D3,D4,D5,D6,D7

3: 20190326 MW1236-18 C3,C4,C5,C6,C7,D2,D3,D4,D5,D6,D7,F6

4: 20190328 MW1236-19 A1,B3,B5,B7,C5,C6,C7,D3,D4,D5,D6,D7,E3,E4,E5,E8,F2,F7,F8

5: 20190328 MW1236-20 A4,A8,B4,C4,C5,C6,C7,D1,D2,D3,D4,D5,D6,D7,E4,E6,E7,F1,F4,F5,F7,F8

6: 20190328 MW1236-21 A1,A3,B3,E4,F4,F8

7: 20190402 MW1236-22 B2,B4,B5,C3,C5,D1,D2,D3,D4,D5,D6,D7,E3,F1,F2,F3,F4,F8

8: 20190402 MW1236-23 A1,A3,A4,B3,C7,C8,D2,D5,D6,D7,F1,F2,F8

9: 20190404 MW1237-10 A1,A8,B2,B3,D3,D5,D8,F2,F8

10: 20190404 MW1237-12 B6,C5,D4,D5

11: 20190404 MWNo Barcode D3,D4,D5,D7,F7

12: 20190409 MW1237-13 C4,C5,C6,C7,D2,D3,D4,D5,D6,D7,F1

13: 20190409 MW1237-14 C2,C5,C6,C7,D2,D3,D5,D6,D7

14: 20190409 MW1237-15 C4,C6,C7,D2,D3,D4,D5,F8

15: 20190411 MW1237-16 A2,B3,B4,B6,B7,C3,C4,C5,C7,D2,D3,D4,D6,E3,E5,E8,F5,F6,F7

16: 20190411 MW1237-17 C2,C3,C4,C5,C6,D2,D3,D4,D5,D6,D7,E6

17: 20190411 MW1237-18 A2,B4,B5,C2,C3,C4,C7,D2,D3,D4,D5,D6,E2,E5,F1,F3,F8

18: 20190416 MW1237-19 A1,C3,D1,D2,D3,D4,D6,D7

19: 20190416 MW66-9604 A5,B4,C2,C3,C5,C6,C7,C8,D2,D3,D4,D5,D6,D7,D8,E8,F2

20: 20190416 MW66-9613 C5,D2,D4,D5,D6,D7

21: 20190418 MW66-9801 B7,B8,C2,C3,C4,C5,C6,C7,D2,D3,D4,D5,D6,D7,E4,F6,F8

22: 20190418 MW66-9803 A1,A4,C3,C4,C6,C7,D2,D3,D4,D6,D7,F1

23: 20190418 MW66-9804 C3,C4,C5,C6,C7,D3,D4,D6,D7,E4,E5

24: 20190423 MW66-9805 A5,B1,C2,C6,C7,D2,D3,D4,D5,D7,F1,F2,F8

25: 20190423 MW66-9810 C3,C4,C5,C7,D2,D3,D4,D6,F1

26: 20190423 MW66-9811 A2,A6,A8,B1,C2,C6,D7,F1,F5,F7

27: 20190425 MW66-9812 A4,A6,C3,C4,C5,C6,D2,D3,D4,D5,D7,F1,F4

28: 20190425 MW66-9817 A1,A3,A6,B2,B4,B5,C5,C7,D2,D3,D4,D5,D6,D7,E1,E6,F1,F2,F3,F7

29: 20190425 MW66-9818 A4,A6,A7,A8,B2,B3,B5,B6,B7,C5,D6,F3,F5,F7

30: 20190430 MW67-3701 A2,A3,A4,B1,F3

31: 20190430 MW67-3702 B5,D4

32: 20190430 MW67-3706 A2,A4,A6,B4

33: 20190502 MW67-3707 A4,C3

34: 20190502 MW67-3708 A2,B2,C8,D1,E1

35: 20190502 MW67-3709 C2,D4,F2,F4

36: 20190507 MW67-3710 C3,C4,C5,C6,C7,D3,D4,D5,D6,D7

37: 20190507 MW67-3711 C4,C5,C6,C7,D3,D4,D5,D7,F8

38: 20190507 MW67-3712 B4,C3,C4,C5,C6,C7,D3,D4,D6,D7,F1,F2

39: 20190509 MW67-3714 B3,C3,C4,C6,D6,D8,F1,F8

40: 20190509 MW67-3715 C3,C5,C6,D4,D5,E1,F1,F7

41: 20190509 MW67-3716 A2,A3,A4,A7,B2,D2,D3,D5,D6,D7,E1,E2,E4,F1,F2,F3

42: 20190514 MW67-3718 A6,D3,D4,F4

43: 20190514 MW67-3719 A1,A7,C2,D4

44: 20190514 MW68-0701 A3,C4,D3,D4,D5,D6,D7

45: 20190516 MW68-0703 C3,C4,C5,C7,D4,D7

46: 20190516 MW68-0704 A4,D5,D7

47: 20190516 MW68-0719 A1,A2,A5,A6,A7,C1,C2,C8,D1,D5,D7,E1,E3,E6,F2,F4,F5,F7,F8

APCRA2019\_dat1\_2020-07-27.RData

wllq\_notes V1

1: 4030

2: Baseline MFR < 0.6377603 Hz; 311

3: Baseline MFR > 3.4036511 Hz; 109

4: Baseline # of AE < 10; 22

5: Baseline # of AE < 10; Baseline MFR < 0.6377603 Hz; 40

I noticed that there is a plate with 'No Barcode'. Will rename that now, then resave dat1.

Level 2 - Collapse Data by Plate ID:

Loading...

APCRA2019\_dat1\_2020-07-27.RData

Collapsing treated and baseline data...

20190326\_MW1236-16

20190326\_MW1236-17

20190326\_MW1236-18

20190328\_MW1236-19

20190328\_MW1236-20

20190328\_MW1236-21

20190402\_MW1236-22

20190402\_MW1236-23

20190404\_MW1237-10

20190404\_MW1237-11

20190404\_MW1237-12

20190409\_MW1237-13

20190409\_MW1237-14

20190409\_MW1237-15

20190411\_MW1237-16

20190411\_MW1237-17

20190411\_MW1237-18

20190416\_MW66-9604

20190416\_MW66-9613

20190418\_MW66-9801

20190418\_MW66-9803

20190418\_MW66-9804

20190416\_MW1237-19

20190423\_MW66-9805

20190423\_MW66-9810

20190423\_MW66-9811

20190425\_MW66-9812

20190425\_MW66-9817

20190425\_MW66-9818

20190430\_MW67-3701

20190430\_MW67-3702

20190430\_MW67-3706

20190502\_MW67-3707

20190502\_MW67-3708

20190502\_MW67-3709

20190507\_MW67-3710

20190507\_MW67-3711

20190507\_MW67-3712

20190509\_MW67-3714

20190509\_MW67-3715

20190509\_MW67-3716

20190514\_MW67-3718

20190514\_MW67-3719

20190514\_MW68-0701

20190516\_MW68-0703

20190516\_MW68-0704

20190516\_MW68-0719

APCRA2019\_dat2\_2020-07-27.RData is ready.

APCRA2019\_dat2\_2020-07-27.RData

Load Cytotoxicity Data:

Reading from APCRA2019\_calculations\_files\_log\_2020-05-21.txt...

Got 16 files.

Reading data from files...

20190313\_Calculations\_Group\_1\_checked.xlsx

AB

MW1236-16 MW1236-17 MW1236-18

some values are negative. These will be set to 0

LDH

MW1236-16 MW1236-17 MW1236-18

20190313\_Calculations\_Group\_2\_checked.xlsx

AB

MW1236-19 MW1236-20 MW1236-21

LDH

MW1236-19 MW1236-20 MW1236-21

20190320\_Calculations\_Group\_1\_checked.xlsx

AB

MW1236-22 MW1236-23 MW1236-24

LDH

MW1236-22 MW1236-23 MW1236-24

some values are negative. These will be set to 0

20190320\_Calculations\_Group\_2\_checked.xlsx

AB

MW1237-10 MW1237-11 MW1237-12

LDH

MW1237-10 MW1237-11 MW1237-12

some values are negative. These will be set to 0

20190327\_Calculations\_Group\_1\_checked.xlsx

AB

MW1237-13 MW1237-14 MW1237-15

LDH

MW1237-13 MW1237-14 MW1237-15

some values are negative. These will be set to 0

20190327\_Calculations\_Group\_2\_checked.xlsx

AB

MW1237-16 MW1237-17 MW1237-18

LDH

MW1237-16 MW1237-17 MW1237-18

some values are negative. These will be set to 0

20190403\_Calculations\_Group\_1\_missingData(LDH).xlsx

AB

MW1237-19 MW66-9604 MW66-9613

some values are negative. These will be set to 0

LDH

Some LDH rval on 66-9604 are NA:

Row 1 2 3 4 5 6 7 8

1: A <NA> <NA> <NA> <NA> <NA> <NA> <NA> <NA>

2: B <NA> <NA> <NA> <NA> <NA> <NA> <NA> <NA>

3: C <NA> <NA> <NA> <NA> <NA> <NA> <NA> <NA>

4: D <NA> <NA> <NA> <NA> <NA> <NA> <NA> <NA>

5: E <NA> <NA> <NA> <NA> <NA> <NA> <NA> <NA>

6: F <NA> <NA> <NA> <NA> <NA> <NA> <NA> <NA>

7: G <NA> <NA> <NA> <NA> <NA> <NA> <NA> <NA>

8: H <NA> <NA> <NA> <NA> <NA> <NA> <NA> <NA>

Do you wish to continue anyways? (y/n): y

MW1237-19 MW66-9604 MW66-9613

some values are negative. These will be set to 0

20190403\_Calculations\_Group\_2\_checked.xlsx

AB

MW66-9801 MW66-9803 MW66-9804

LDH

MW66-9801 MW66-9803 MW66-9804

some values are negative. These will be set to 0

20190410\_Calculations\_Group\_1\_checked.xlsx

AB

MW66-9805 MW66-9810 MW66-9811

LDH

MW66-9805 MW66-9810 MW66-9811

some values are negative. These will be set to 0

20190410\_Calculations\_Group\_2\_checked.xlsx

AB

MW66-9812 MW66-9817 MW66-9818

some values are negative. These will be set to 0

LDH

MW66-9812 MW66-9817 MW66-9818

some values are negative. These will be set to 0

20190417\_Calculations\_Group\_1\_checked.xlsx

AB

MW67-3701 MW67-3702 MW67-3706

some values are negative. These will be set to 0

LDH

MW67-3701 MW67-3702 MW67-3706

some values are negative. These will be set to 0

20190417\_Calculations\_Group\_2\_checked.xlsx

AB

MW67-3707 MW67-3708 MW67-3709

LDH

MW67-3707 MW67-3708 MW67-3709

some values are negative. These will be set to 0

20190424\_Calculations\_Group\_1\_checked.xlsx

AB

MW67-3710 MW67-3711 MW67-3712

LDH

MW67-3710 MW67-3711 MW67-3712

some values are negative. These will be set to 0

20190424\_Calculations\_Group\_2\_checked.xlsx

AB

MW67-3714 MW67-3715 MW67-3716

some values are negative. These will be set to 0

LDH

MW67-3714 MW67-3715 MW67-3716

some values are negative. These will be set to 0

20190501\_Calculations\_Group\_1\_checked.xlsx

AB

MW67-3718 MW67-3719 MW68-0701

LDH

MW67-3718 MW67-3719 MW68-0701

some values are negative. These will be set to 0

20190501\_Calculations\_Group\_2\_checked.xlsx

AB

MW68-0703 MW68-0704 MW68-0719

LDH

MW68-0703 MW68-0704 MW68-0719

some values are negative. These will be set to 0

There are some NA values in cytodat:

treatment apid experiment.date plate.id rowi coli conc rval srcf acnm

1: DMSOa\_Control 20190416 20190416 MW66-9604 1 1 Control <NA> 20190403\_Calculations\_Group\_1\_missingData(LDH).xlsx CCTE\_Shafer\_MEA\_acute\_LDH

2: D04\_0.03 20190416 20190416 MW66-9604 1 2 0.03 <NA> 20190403\_Calculations\_Group\_1\_missingData(LDH).xlsx CCTE\_Shafer\_MEA\_acute\_LDH

3: D04\_0.1 20190416 20190416 MW66-9604 1 3 0.1 <NA> 20190403\_Calculations\_Group\_1\_missingData(LDH).xlsx CCTE\_Shafer\_MEA\_acute\_LDH

4: D04\_0.3 20190416 20190416 MW66-9604 1 4 0.3 <NA> 20190403\_Calculations\_Group\_1\_missingData(LDH).xlsx CCTE\_Shafer\_MEA\_acute\_LDH

5: D04\_1 20190416 20190416 MW66-9604 1 5 1 <NA> 20190403\_Calculations\_Group\_1\_missingData(LDH).xlsx CCTE\_Shafer\_MEA\_acute\_LDH

6: D04\_3 20190416 20190416 MW66-9604 1 6 3 <NA> 20190403\_Calculations\_Group\_1\_missingData(LDH).xlsx CCTE\_Shafer\_MEA\_acute\_LDH

7: D04\_10 20190416 20190416 MW66-9604 1 7 10 <NA> 20190403\_Calculations\_Group\_1\_missingData(LDH).xlsx CCTE\_Shafer\_MEA\_acute\_LDH

8: D04\_30 20190416 20190416 MW66-9604 1 8 30 <NA> 20190403\_Calculations\_Group\_1\_missingData(LDH).xlsx CCTE\_Shafer\_MEA\_acute\_LDH

9: DMSOb\_Control 20190416 20190416 MW66-9604 2 1 Control <NA> 20190403\_Calculations\_Group\_1\_missingData(LDH).xlsx CCTE\_Shafer\_MEA\_acute\_LDH

10: D05\_0.03 20190416 20190416 MW66-9604 2 2 0.03 <NA> 20190403\_Calculations\_Group\_1\_missingData(LDH).xlsx CCTE\_Shafer\_MEA\_acute\_LDH

11: D05\_0.1 20190416 20190416 MW66-9604 2 3 0.1 <NA> 20190403\_Calculations\_Group\_1\_missingData(LDH).xlsx CCTE\_Shafer\_MEA\_acute\_LDH

12: D05\_0.3 20190416 20190416 MW66-9604 2 4 0.3 <NA> 20190403\_Calculations\_Group\_1\_missingData(LDH).xlsx CCTE\_Shafer\_MEA\_acute\_LDH

13: D05\_1 20190416 20190416 MW66-9604 2 5 1 <NA> 20190403\_Calculations\_Group\_1\_missingData(LDH).xlsx CCTE\_Shafer\_MEA\_acute\_LDH

14: D05\_3 20190416 20190416 MW66-9604 2 6 3 <NA> 20190403\_Calculations\_Group\_1\_missingData(LDH).xlsx CCTE\_Shafer\_MEA\_acute\_LDH

15: D05\_10 20190416 20190416 MW66-9604 2 7 10 <NA> 20190403\_Calculations\_Group\_1\_missingData(LDH).xlsx CCTE\_Shafer\_MEA\_acute\_LDH

16: D05\_30 20190416 20190416 MW66-9604 2 8 30 <NA> 20190403\_Calculations\_Group\_1\_missingData(LDH).xlsx CCTE\_Shafer\_MEA\_acute\_LDH

17: DMSOc\_Control 20190416 20190416 MW66-9604 3 1 Control <NA> 20190403\_Calculations\_Group\_1\_missingData(LDH).xlsx CCTE\_Shafer\_MEA\_acute\_LDH

18: D06\_0.03 20190416 20190416 MW66-9604 3 2 0.03 <NA> 20190403\_Calculations\_Group\_1\_missingData(LDH).xlsx CCTE\_Shafer\_MEA\_acute\_LDH

19: D06\_0.1 20190416 20190416 MW66-9604 3 3 0.1 <NA> 20190403\_Calculations\_Group\_1\_missingData(LDH).xlsx CCTE\_Shafer\_MEA\_acute\_LDH

20: D06\_0.3 20190416 20190416 MW66-9604 3 4 0.3 <NA> 20190403\_Calculations\_Group\_1\_missingData(LDH).xlsx CCTE\_Shafer\_MEA\_acute\_LDH

21: D06\_1 20190416 20190416 MW66-9604 3 5 1 <NA> 20190403\_Calculations\_Group\_1\_missingData(LDH).xlsx CCTE\_Shafer\_MEA\_acute\_LDH

22: D06\_3 20190416 20190416 MW66-9604 3 6 3 <NA> 20190403\_Calculations\_Group\_1\_missingData(LDH).xlsx CCTE\_Shafer\_MEA\_acute\_LDH

23: D06\_10 20190416 20190416 MW66-9604 3 7 10 <NA> 20190403\_Calculations\_Group\_1\_missingData(LDH).xlsx CCTE\_Shafer\_MEA\_acute\_LDH

24: D06\_30 20190416 20190416 MW66-9604 3 8 30 <NA> 20190403\_Calculations\_Group\_1\_missingData(LDH).xlsx CCTE\_Shafer\_MEA\_acute\_LDH

25: TTX\_1 20190416 20190416 MW66-9604 4 1 1 <NA> 20190403\_Calculations\_Group\_1\_missingData(LDH).xlsx CCTE\_Shafer\_MEA\_acute\_LDH

26: D07\_0.03 20190416 20190416 MW66-9604 4 2 0.03 <NA> 20190403\_Calculations\_Group\_1\_missingData(LDH).xlsx CCTE\_Shafer\_MEA\_acute\_LDH

27: D07\_0.1 20190416 20190416 MW66-9604 4 3 0.1 <NA> 20190403\_Calculations\_Group\_1\_missingData(LDH).xlsx CCTE\_Shafer\_MEA\_acute\_LDH

28: D07\_0.3 20190416 20190416 MW66-9604 4 4 0.3 <NA> 20190403\_Calculations\_Group\_1\_missingData(LDH).xlsx CCTE\_Shafer\_MEA\_acute\_LDH

29: D07\_1 20190416 20190416 MW66-9604 4 5 1 <NA> 20190403\_Calculations\_Group\_1\_missingData(LDH).xlsx CCTE\_Shafer\_MEA\_acute\_LDH

30: D07\_3 20190416 20190416 MW66-9604 4 6 3 <NA> 20190403\_Calculations\_Group\_1\_missingData(LDH).xlsx CCTE\_Shafer\_MEA\_acute\_LDH

31: D07\_10 20190416 20190416 MW66-9604 4 7 10 <NA> 20190403\_Calculations\_Group\_1\_missingData(LDH).xlsx CCTE\_Shafer\_MEA\_acute\_LDH

32: D07\_30 20190416 20190416 MW66-9604 4 8 30 <NA> 20190403\_Calculations\_Group\_1\_missingData(LDH).xlsx CCTE\_Shafer\_MEA\_acute\_LDH

33: PICRO\_25 20190416 20190416 MW66-9604 5 1 25 <NA> 20190403\_Calculations\_Group\_1\_missingData(LDH).xlsx CCTE\_Shafer\_MEA\_acute\_LDH

34: D08\_0.03 20190416 20190416 MW66-9604 5 2 0.03 <NA> 20190403\_Calculations\_Group\_1\_missingData(LDH).xlsx CCTE\_Shafer\_MEA\_acute\_LDH

35: D08\_0.1 20190416 20190416 MW66-9604 5 3 0.1 <NA> 20190403\_Calculations\_Group\_1\_missingData(LDH).xlsx CCTE\_Shafer\_MEA\_acute\_LDH

36: D08\_0.3 20190416 20190416 MW66-9604 5 4 0.3 <NA> 20190403\_Calculations\_Group\_1\_missingData(LDH).xlsx CCTE\_Shafer\_MEA\_acute\_LDH

37: D08\_1 20190416 20190416 MW66-9604 5 5 1 <NA> 20190403\_Calculations\_Group\_1\_missingData(LDH).xlsx CCTE\_Shafer\_MEA\_acute\_LDH

38: D08\_3 20190416 20190416 MW66-9604 5 6 3 <NA> 20190403\_Calculations\_Group\_1\_missingData(LDH).xlsx CCTE\_Shafer\_MEA\_acute\_LDH

39: D08\_10 20190416 20190416 MW66-9604 5 7 10 <NA> 20190403\_Calculations\_Group\_1\_missingData(LDH).xlsx CCTE\_Shafer\_MEA\_acute\_LDH

40: D08\_30 20190416 20190416 MW66-9604 5 8 30 <NA> 20190403\_Calculations\_Group\_1\_missingData(LDH).xlsx CCTE\_Shafer\_MEA\_acute\_LDH

41: LYSIS\_1 20190416 20190416 MW66-9604 6 1 1 <NA> 20190403\_Calculations\_Group\_1\_missingData(LDH).xlsx CCTE\_Shafer\_MEA\_acute\_LDH

42: D09\_0.03 20190416 20190416 MW66-9604 6 2 0.03 <NA> 20190403\_Calculations\_Group\_1\_missingData(LDH).xlsx CCTE\_Shafer\_MEA\_acute\_LDH

43: D09\_0.1 20190416 20190416 MW66-9604 6 3 0.1 <NA> 20190403\_Calculations\_Group\_1\_missingData(LDH).xlsx CCTE\_Shafer\_MEA\_acute\_LDH

44: D09\_0.3 20190416 20190416 MW66-9604 6 4 0.3 <NA> 20190403\_Calculations\_Group\_1\_missingData(LDH).xlsx CCTE\_Shafer\_MEA\_acute\_LDH

45: D09\_1 20190416 20190416 MW66-9604 6 5 1 <NA> 20190403\_Calculations\_Group\_1\_missingData(LDH).xlsx CCTE\_Shafer\_MEA\_acute\_LDH

46: D09\_3 20190416 20190416 MW66-9604 6 6 3 <NA> 20190403\_Calculations\_Group\_1\_missingData(LDH).xlsx CCTE\_Shafer\_MEA\_acute\_LDH

47: D09\_10 20190416 20190416 MW66-9604 6 7 10 <NA> 20190403\_Calculations\_Group\_1\_missingData(LDH).xlsx CCTE\_Shafer\_MEA\_acute\_LDH

48: D09\_30 20190416 20190416 MW66-9604 6 8 30 <NA> 20190403\_Calculations\_Group\_1\_missingData(LDH).xlsx CCTE\_Shafer\_MEA\_acute\_LDH

cytodat is ready

Level 3 - Combine Cyto and Neural Stats Data; Initialize treatment, conc, and wllq

Loading...

APCRA2019\_dat2\_2020-07-27.RData

APCRA2019\_dat3\_2020-07-27.RData is ready.

Level 4 - Finalize well ID information:

APCRA2019\_dat3\_2020-07-27.RData

Finalize Wllq:

NA rval's: 4088

Inf rval's (baseline==0): 30

Well quality set to 0 for these rval's.

Experiment date: 20190416 MW66-9613 D6 Contamination Summary:

rval acnm

1: NA active\_electrodes\_number

2: NA burst\_number

3: NA firing\_rate\_mean

4: NA network\_burst\_number

5: 2.233200e+04 AB

6: 2.646667e-02 LDH

Well quality set to zero for 45 rows.

Experiment date: 20190425 MW66-9817 D6 Contamination Summary:

rval acnm

1: NA active\_electrodes\_number

2: NA burst\_number

3: NA firing\_rate\_mean

4: NA network\_burst\_number

5: 384.6667 AB

6: 0.0000 LDH

Well quality set to zero for 45 rows.

Experiment date: 20190425 MW66-9818 F3 Contamination Summary:

rval acnm

1: NA active\_electrodes\_number

2: NA burst\_number

3: NA firing\_rate\_mean

4: NA network\_burst\_number

5: 814.3333 AB

6: 0.0000 LDH

Well quality set to zero for 45 rows.

Experiment date: 20190502 MW67-3707 B8 Excessive foaming Summary:

rval acnm

1: 46145 AB

Well quality set to zero for 1 rows.

Experiment date: 20190502 MW67-3708 B8 Excessive foaming Summary:

rval acnm

1: 49121 AB

Well quality set to zero for 1 rows.

Experiment date: 20190509 MW67-3714 B3 Contamination Summary:

rval acnm

1: NaN active\_electrodes\_number

2: NaN burst\_number

3: -97.37374 firing\_rate\_mean

4: NaN network\_burst\_number

5: 5947.33333 AB

6: 0.24010 LDH

Well quality set to zero for 45 rows.

Experiment date: 20190516 MW68-0719 A7 Contamination Summary:

rval acnm

1: NA active\_electrodes\_number

2: NA burst\_number

3: NA firing\_rate\_mean

4: NA network\_burst\_number

5: 1412.667 AB

6: 0.000 LDH

Well quality set to zero for 45 rows.

Verifying control compound labels:

Confirm that the rest of these treatments look normal (nothing NA, 0, etc):

Media, A01\_0.03, A01\_0.1, A01\_0.3, A01\_1, A01\_3, A01\_10, A01\_30, A02\_0.03, A02\_0.1, A02\_0.3, A02\_1, A02\_3, A02\_10, A02\_30, DMSO, A03\_0.03, A03\_0.1, A03\_0.3, A03\_1, A03\_3, A03\_10, A03\_30, A04\_0.03, A04\_0.1, A04\_0.3, A04\_1, A04\_3, A04\_10, A04\_30, A05\_0.03, A05\_0.1, A05\_0.3, A05\_1, A05\_3, A05\_10, A05\_30, A06\_0.03, A06\_0.1, A06\_0.3, A06\_1, A06\_3, A06\_10, A06\_30, A07\_0.03, A07\_0.1, A07\_0.3, A07\_1, A07\_3, A07\_10, A07\_30, A08\_0.03, A08\_0.1, A08\_0.3, A08\_1, A08\_3, A08\_10, A08\_30, A09\_0.03, A09\_0.1, A09\_0.3, A09\_1, A09\_3, A09\_10, A09\_30, A10\_0.03, A10\_0.1, A10\_0.3, A10\_1, A10\_3, A10\_10, A10\_30, A11\_0.03, A11\_0.1, A11\_0.3, A11\_1, A11\_3, A11\_10, A11\_30, B01\_0.03, B01\_0.1, B01\_0.3, B01\_1, B01\_3, B01\_10, B01\_30, B02\_0.03, B02\_0.1, B02\_0.3, B02\_1, B02\_3, B02\_10, B02\_30, B03\_0.03, B03\_0.1, B03\_0.3, B03\_1, B03\_3, B03\_10, B03\_30, B04\_0.03, B04\_0.1, B04\_0.3, B04\_1, B04\_3, B04\_10, B04\_30, TTX, B05\_0.03, B05\_0.1, B05\_0.3, B05\_1, B05\_3, B05\_10, B05\_30, PICRO, B06\_0.03, B06\_0.1, B06\_0.3, B06\_1, B06\_3, B06\_10, B06\_30, LYSIS\_1, B07\_0.03, B07\_0.1, B07\_0.3, B07\_1, B07\_3, B07\_10, B07\_30, B08\_0.03, B08\_0.1, B08\_0.3, B08\_1, B08\_3, B08\_10, B08\_30, B09\_0.03, B09\_0.1, B09\_0.3, B09\_1, B09\_3, B09\_10, B09\_30, B10\_0.03, B10\_0.1, B10\_0.3, B10\_1, B10\_3, B10\_10, B10\_30, B11\_0.03, B11\_0.1, B11\_0.3, B11\_1, B11\_3, B11\_10, B11\_30, C01\_0.03, C01\_0.1, C01\_0.3, C01\_1, C01\_3, C01\_10, C01\_30, C02\_0.03, C02\_0.1, C02\_0.3, C02\_1, C02\_3, C02\_10, C02\_30, C03\_0.03, C03\_0.1, C03\_0.3, C03\_1, C03\_3, C03\_10, C03\_30, C04\_0.03, C04\_0.1, C04\_0.3, C04\_1, C04\_3, C04\_10, C04\_30, C05\_0.03, C05\_0.1, C05\_0.3, C05\_1, C05\_3, C05\_10, C05\_30, C06\_0.03, C06\_0.1, C06\_0.3, C06\_1, C06\_3, C06\_10, C06\_30, C07\_0.03, C07\_0.1, C07\_0.3, C07\_1, C07\_3, C07\_10, C07\_30, C08\_0.03, C08\_0.1, C08\_0.3, C08\_1, C08\_3, C08\_10, C08\_30, C09\_0.03, C09\_0.1, C09\_0.3, C09\_1, C09\_3, C09\_10, C09\_30, C10\_0.03, C10\_0.1, C10\_0.3, C10\_1, C10\_3, C10\_10, C10\_30, C11\_0.03, C11\_0.1, C11\_0.3, C11\_1, C11\_3, C11\_10, C11\_30, D01\_0.03, D01\_0.1, D01\_0.3, D01\_1, D01\_3, D01\_10, D01\_30, D02\_0.03, D02\_0.1, D02\_0.3, D02\_1, D02\_3, D02\_10, D02\_30, D03\_0.03, D03\_0.1, D03\_0.3, D03\_1, D03\_3, D03\_10, D03\_30, D04\_0.03, D04\_0.1, D04\_0.3, D04\_1, D04\_3, D04\_10, D04\_30, D05\_0.03, D05\_0.1, D05\_0.3, D05\_1, D05\_3, D05\_10, D05\_30, D06\_0.03, D06\_0.1, D06\_0.3, D06\_1, D06\_3, D06\_10, D06\_30, D07\_0.03, D07\_0.1, D07\_0.3, D07\_1, D07\_3, D07\_10, D07\_30, D08\_0.03, D08\_0.1, D08\_0.3, D08\_1, D08\_3, D08\_10, D08\_30, D09\_0.03, D09\_0.1, D09\_0.3, D09\_1, D09\_3, D09\_10, D09\_30, D10\_0.03, D10\_0.1, D10\_0.3, D10\_1, D10\_3, D10\_10, D10\_30, D11\_0.03, D11\_0.1, D11\_0.3, D11\_1, D11\_3, D11\_10, D11\_30, E01\_0.03, E01\_0.1, E01\_0.3, E01\_1, E01\_3, E01\_10, E01\_30, E02\_0.03, E02\_0.1, E02\_0.3, E02\_1, E02\_3, E02\_10, E02\_30, E03\_0.03, E03\_0.1, E03\_0.3, E03\_1, E03\_3, E03\_10, E03\_30, E04\_0.03, E04\_0.1, E04\_0.3, E04\_1, E04\_3, E04\_10, E04\_30, E05\_0.03, E05\_0.1, E05\_0.3, E05\_1, E05\_3, E05\_10, E05\_30, E06\_0.03, E06\_0.1, E06\_0.3, E06\_1, E06\_3, E06\_10, E06\_30, E07\_0.03, E07\_0.1, E07\_0.3, E07\_1, E07\_3, E07\_10, E07\_30, E08\_0.03, E08\_0.1, E08\_0.3, E08\_1, E08\_3, E08\_10, E08\_30, E09\_0.03, E09\_0.1, E09\_0.3, E09\_1, E09\_3, E09\_10, E09\_30, E10\_0.03, E10\_0.1, E10\_0.3, E10\_1, E10\_3, E10\_10, E10\_30, F01\_0.03, F01\_0.1, F01\_0.3, F01\_1, F01\_3, F01\_10, F01\_30, F02\_0.03, F02\_0.1, F02\_0.3, F02\_1, F02\_3, F02\_10, F02\_30, F03\_0.03, F03\_0.1, F03\_0.3, F03\_1, F03\_3, F03\_10, F03\_30, F04\_0.03, F04\_0.1, F04\_0.3, F04\_1, F04\_3, F04\_10, F04\_30, F05\_0.03, F05\_0.1, F05\_0.3, F05\_1, F05\_3, F05\_10, F05\_30, F06\_0.03, F06\_0.1, F06\_0.3, F06\_1, F06\_3, F06\_10, F06\_30, F07\_0.03, F07\_0.1, F07\_0.3, F07\_1, F07\_3, F07\_10, F07\_30, F08\_0.03, F08\_0.1, F08\_0.3, F08\_1, F08\_3, F08\_10, F08\_30, F09\_0.03, F09\_0.1, F09\_0.3, F09\_1, F09\_3, F09\_10, F09\_30, F10\_0.03, F10\_0.1, F10\_0.3, F10\_1, F10\_3, F10\_10, F10\_30, G01\_0.03, G01\_0.1, G01\_0.3, G01\_1, G01\_3, G01\_10, G01\_30, G02\_0.03, G02\_0.1, G02\_0.3, G02\_1, G02\_3, G02\_10, G02\_30, G03\_0.03, G03\_0.1, G03\_0.3, G03\_1, G03\_3, G03\_10, G03\_30, G04\_0.03, G04\_0.1, G04\_0.3, G04\_1, G04\_3, G04\_10, G04\_30, G05\_0.03, G05\_0.1, G05\_0.3, G05\_1, G05\_3, G05\_10, G05\_30, G06\_0.03, G06\_0.1, G06\_0.3, G06\_1, G06\_3, G06\_10, G06\_30, G07\_0.03, G07\_0.1, G07\_0.3, G07\_1, G07\_3, G07\_10, G07\_30, G08\_0.03, G08\_0.1, G08\_0.3, G08\_1, G08\_3, G08\_10, G08\_30, G09\_0.03, G09\_0.1, G09\_0.3, G09\_1, G09\_3, G09\_10, G09\_30, G10\_0.03, G10\_0.1, G10\_0.3, G10\_1, G10\_3, G10\_10, G10\_30, H01\_0.03, H01\_0.1, H01\_0.3, H01\_1, H01\_3, H01\_10, H01\_30, H02\_0.03, H02\_0.1, H02\_0.3, H02\_1, H02\_3, H02\_10, H02\_30, H03\_0.03, H03\_0.1, H03\_0.3, H03\_1, H03\_3, H03\_10, H03\_30, H04\_0.03, H04\_0.1, H04\_0.3, H04\_1, H04\_3, H04\_10, H04\_30, H05\_0.03, H05\_0.1, H05\_0.3, H05\_1, H05\_3, H05\_10, H05\_30, H06\_0.03, H06\_0.1, H06\_0.3, H06\_1, H06\_3, H06\_10, H06\_30, H07\_0.03, H07\_0.1, H07\_0.3, H07\_1, H07\_3, H07\_10, H07\_30, H08\_0.03, H08\_0.1, H08\_0.3, H08\_1, H08\_3, H08\_10, H08\_30, H09\_0.03, H09\_0.1, H09\_0.3, H09\_1, H09\_3, H09\_10, H09\_30, H10\_0.03, H10\_0.1, H10\_0.3, H10\_1, H10\_3, H10\_10, H10\_30, LYSIS\_Control, 1:250 LDH, 1:2500 LDH, Lysis, ½ Lysis

Assign spid's:

Using spidmap file: L:/Lab/NHEERL\_MEA/Project TSCA\_APCRA/EPA\_18235\_EPA-Shafer\_84\_20181129.xlsx

Number of unique spids: 90

Prepare LDH 'p' wells (using Lysis or Half Lysis wells):

Treatments assigned to wllt 'p' for each apid:

apid LDH\_trts\_in\_p\_wells N

1: 20190326 2 \* ½ Lysis 9

2: 20190328 2 \* ½ Lysis 9

3: 20190402 2 \* ½ Lysis 9

4: 20190404 2 \* ½ Lysis 9

5: 20190409 2 \* ½ Lysis 9

6: 20190411 2 \* ½ Lysis 9

7: 20190416 2 \* ½ Lysis 6

8: 20190418 2 \* ½ Lysis 9

9: 20190423 2 \* ½ Lysis 9

10: 20190425 2 \* ½ Lysis 9

11: 20190430 2 \* ½ Lysis 9

12: 20190502 2 \* ½ Lysis 9

13: 20190507 2 \* ½ Lysis 9

14: 20190509 2 \* ½ Lysis 9

15: 20190514 2 \* ½ Lysis 9

16: 20190516 2 \* ½ Lysis 9

Summary of median p wells by apid:

apid pval

1: 20190326 0.9082000

2: 20190328 1.6267333

3: 20190402 0.4246667

4: 20190404 0.7342000

5: 20190409 1.8176667

6: 20190411 2.1584000

7: 20190416 1.5708000

8: 20190418 1.4964667

9: 20190423 1.4870667

10: 20190425 1.4691333

11: 20190430 1.6973333

12: 20190502 2.2252000

13: 20190507 0.9256000

14: 20190509 1.4798000

15: 20190514 2.0930000

16: 20190516 1.8764000

Assign Wllt:

wllt will be set to 't' for the MEA components for the following spid's:

EPAPLT0154A01, EPAPLT0154A02, EPAPLT0154A03, EPAPLT0154A04, EPAPLT0154A05, EPAPLT0154A06, EPAPLT0154A07, EPAPLT0154A08, EPAPLT0154A09, EPAPLT0154A10, EPAPLT0154A11, EPAPLT0154B01, EPAPLT0154B02, EPAPLT0154B03, EPAPLT0154B04, EPAPLT0154B05, EPAPLT0154B06, EPAPLT0154B07, EPAPLT0154B08, EPAPLT0154B09, EPAPLT0154B10, EPAPLT0154B11, EPAPLT0154C01, EPAPLT0154C02, EPAPLT0154C03, EPAPLT0154C04, EPAPLT0154C05, EPAPLT0154C06, EPAPLT0154C07, EPAPLT0154C08, EPAPLT0154C09, EPAPLT0154C10, EPAPLT0154C11, EPAPLT0154D01, EPAPLT0154D02, EPAPLT0154D03, EPAPLT0154D04, EPAPLT0154D05, EPAPLT0154D06, EPAPLT0154D07, EPAPLT0154D08, EPAPLT0154D09, EPAPLT0154D10, EPAPLT0154D11, EPAPLT0154E01, EPAPLT0154E02, EPAPLT0154E03, EPAPLT0154E04, EPAPLT0154E05, EPAPLT0154E06, EPAPLT0154E07, EPAPLT0154E08, EPAPLT0154E09, EPAPLT0154E10, EPAPLT0154F01, EPAPLT0154F02, EPAPLT0154F03, EPAPLT0154F04, EPAPLT0154F05, EPAPLT0154F06, EPAPLT0154F07, EPAPLT0154F08, EPAPLT0154F09, EPAPLT0154F10, EPAPLT0154G01, EPAPLT0154G02, EPAPLT0154G03, EPAPLT0154G04, EPAPLT0154G05, EPAPLT0154G06, EPAPLT0154G07, EPAPLT0154G08, EPAPLT0154G09, EPAPLT0154G10, EPAPLT0154H01, EPAPLT0154H02, EPAPLT0154H03, EPAPLT0154H04, EPAPLT0154H05, EPAPLT0154H06, EPAPLT0154H07, EPAPLT0154H08, EPAPLT0154H09, EPAPLT0154H10

wllt will be set to 't' for the cytotoxicity components for the following spid's:

EPAPLT0154A01, EPAPLT0154A02, EPAPLT0154A03, EPAPLT0154A04, EPAPLT0154A05, EPAPLT0154A06, EPAPLT0154A07, EPAPLT0154A08, EPAPLT0154A09, EPAPLT0154A10, EPAPLT0154A11, EPAPLT0154B01, EPAPLT0154B02, EPAPLT0154B03, EPAPLT0154B04, EPAPLT0154B05, EPAPLT0154B06, EPAPLT0154B07, EPAPLT0154B08, EPAPLT0154B09, EPAPLT0154B10, EPAPLT0154B11, EPAPLT0154C01, EPAPLT0154C02, EPAPLT0154C03, EPAPLT0154C04, EPAPLT0154C05, EPAPLT0154C06, EPAPLT0154C07, EPAPLT0154C08, EPAPLT0154C09, EPAPLT0154C10, EPAPLT0154C11, EPAPLT0154D01, EPAPLT0154D02, EPAPLT0154D03, EPAPLT0154D04, EPAPLT0154D05, EPAPLT0154D06, EPAPLT0154D07, EPAPLT0154D08, EPAPLT0154D09, EPAPLT0154D10, EPAPLT0154D11, EPAPLT0154E01, EPAPLT0154E02, EPAPLT0154E03, EPAPLT0154E04, EPAPLT0154E05, EPAPLT0154E06, EPAPLT0154E07, EPAPLT0154E08, EPAPLT0154E09, EPAPLT0154E10, EPAPLT0154F01, EPAPLT0154F02, EPAPLT0154F03, EPAPLT0154F04, EPAPLT0154F05, EPAPLT0154F06, EPAPLT0154F07, EPAPLT0154F08, EPAPLT0154F09, EPAPLT0154F10, EPAPLT0154G01, EPAPLT0154G02, EPAPLT0154G03, EPAPLT0154G04, EPAPLT0154G05, EPAPLT0154G06, EPAPLT0154G07, EPAPLT0154G08, EPAPLT0154G09, EPAPLT0154G10, EPAPLT0154H01, EPAPLT0154H02, EPAPLT0154H03, EPAPLT0154H04, EPAPLT0154H05, EPAPLT0154H06, EPAPLT0154H07, EPAPLT0154H08, EPAPLT0154H09, EPAPLT0154H10

Well Type Assignments for Control Compounds by assay component:

treatment spid CellTiter Blue LDH MEA components

1: DMSO DMSO n n n

2: Media Media - - b

3: PICRO Picrotoxin z z p

4: TTX Tetrodotoxin x x p

5: 2 \* ½ Lysis Tritonx100 - p -

6: Lysis Tritonx100 p x v

Unique of wllt:

[1] "t" "n" "v" "p" "b" "z" "x"

Finalize Concentrations:

Concentration Corrections:

The following treatment have char conc. Will be set to NA:

spid treatment conc N

1: Tritonx100 Lysis Control 12

2: Media Media Control 1290

3: Tritonx100 Lysis Lysis 141

4: Tritonx100 2 \* ½ Lysis ½ Lysis 141

conc's corrected for all samples using the file samples\_stkc\_invitrodb\_2020-06-12.RData

All conc's as numeric:

NA, 0.0015, 0.015, 0.0235, 0.0292, 0.0298, 0.03, 0.05, 0.0783, 0.0975, 0.0995, 0.0999, 0.1, 0.15, 0.235, 0.292, 0.298, 0.3, 0.5, 0.783, 0.975, 0.995, 0.999, 1, 1.5, 2.35, 2.92, 2.98, 3, 5, 7.83, 9.75, 9.95, 9.99, 10, 15, 23.5, 25, 29.2, 29.8, 30

Final Control Compound Conc Assignments by assay component:

treatment spid Conc Label in Source File CellTiter Blue LDH MEA components

1: DMSO DMSO Control 0.0015 0.0015 0.0015

2: Media Media Control - - NA

3: PICRO Picrotoxin 25,Control 25 25 25

4: TTX Tetrodotoxin 1,Control 1 1 1

5: 2 \* ½ Lysis Tritonx100 ½ Lysis - NA -

6: Lysis Tritonx100 1,Control,Lysis NA NA NA

Final Checks:

Number of unique acnm's present: 45

Wllq breakdown:

wllq N

1: 1 76306

2: 0 25592

Number of plates tested: 48

Number of experiment dates: 16

LDH plates are expected to have 54 points.

The following plates don't have the expected number of points (48 for MEA & AB 54 for LDH):

date\_plate AB LDH MEA\_pts

1: 20190402\_MW1236-24 48 54 0

date\_plate AB LDH MEA\_pts

1: 20190416\_MW66-9604 48 48 48

Summary of MEA rval's above 300% change by acnm (for wllt 't' or 'n'):

acnm wllts N

1: CCTE\_Shafer\_MEA\_acute\_interburst\_interval\_std n,t 442

2: CCTE\_Shafer\_MEA\_acute\_interburst\_interval\_mean n,t 306

3: CCTE\_Shafer\_MEA\_acute\_interburst\_interval\_CV\_std n,t 175

4: CCTE\_Shafer\_MEA\_acute\_burst\_frequency\_std n,t 125

5: CCTE\_Shafer\_MEA\_acute\_network\_burst\_frequency n,t 88

6: CCTE\_Shafer\_MEA\_acute\_network\_burst\_number n,t 88

7: CCTE\_Shafer\_MEA\_acute\_per\_network\_burst\_electrodes\_number\_std n,t 85

8: CCTE\_Shafer\_MEA\_acute\_inter-network\_burst\_interval\_CV n,t 84

9: CCTE\_Shafer\_MEA\_acute\_burst\_percentage\_std n,t 69

10: CCTE\_Shafer\_MEA\_acute\_network\_burst\_duration\_IQR n,t 57

11: CCTE\_Shafer\_MEA\_acute\_median\_interspike\_interval\_within\_burst\_std n,t 40

12: CCTE\_Shafer\_MEA\_acute\_per\_network\_burst\_spike\_number\_mean n,t 39

13: CCTE\_Shafer\_MEA\_acute\_burst\_duration\_IQR\_std n,t 37

14: CCTE\_Shafer\_MEA\_acute\_cross\_correlation\_HWHM n,t 27

15: CCTE\_Shafer\_MEA\_acute\_per\_network\_burst\_mean\_spikes\_per\_electrode\_mean n,t 20

16: CCTE\_Shafer\_MEA\_acute\_mean\_interspike\_interval\_within\_burst\_std n,t 19

17: CCTE\_Shafer\_MEA\_acute\_interburst\_interval\_CV\_mean n,t 14

18: CCTE\_Shafer\_MEA\_acute\_median\_interspike\_interval\_within\_burst\_mean t 14

19: CCTE\_Shafer\_MEA\_acute\_network\_burst\_duration\_std n,t 12

20: CCTE\_Shafer\_MEA\_acute\_cross\_correlation\_HWHM\_normalized t 12

21: CCTE\_Shafer\_MEA\_acute\_network\_burst\_duration\_mean n,t 8

22: CCTE\_Shafer\_MEA\_acute\_mean\_interspike\_interval\_within\_burst\_mean t 7

23: CCTE\_Shafer\_MEA\_acute\_interspike\_interval\_CV n,t 6

24: CCTE\_Shafer\_MEA\_acute\_per\_network\_burst\_mean\_spikes\_per\_electrode\_std n,t 4

25: CCTE\_Shafer\_MEA\_acute\_per\_network\_burst\_spike\_number\_std n,t 4

26: CCTE\_Shafer\_MEA\_acute\_burst\_frequency\_mean t 4

27: CCTE\_Shafer\_MEA\_acute\_burst\_number t 4

28: CCTE\_Shafer\_MEA\_acute\_burst\_duration\_std t 4

29: CCTE\_Shafer\_MEA\_acute\_burst\_duration\_IQR\_mean t 3

30: CCTE\_Shafer\_MEA\_acute\_cross\_correlation\_area t 2

31: CCTE\_Shafer\_MEA\_acute\_firing\_rate\_mean t 2

32: CCTE\_Shafer\_MEA\_acute\_spike\_number t 2

33: CCTE\_Shafer\_MEA\_acute\_firing\_rate\_mean\_weighted t 1

34: CCTE\_Shafer\_MEA\_acute\_per\_burst\_spike\_number\_std t 1

acnm wllts N

(note that the wllq is not quite final -

wllq will be updated for outlier DMSO wells will before creating lvl 0 snapshot)

dat4 saved on: 2020-07-27

Warning message:

In eval(ei, envir) :

The following treatments don't have a corresponding spid:1:250 LDH, 1:2500 LDH