M2D7: Data Analysis

Announcements:

A. Mod2 Research Article due Wednesday, 4/23 at 5pm

B. **Bonus!** If you visit the BE Writing lab before Monday, 4/21 you get an extra 24 hours to work on your Mod2 report

C. *NOTE: Writing lab visits are by appointment (http://bewritinglab.mit.edu/)*

How will we know that the inhibitor works?

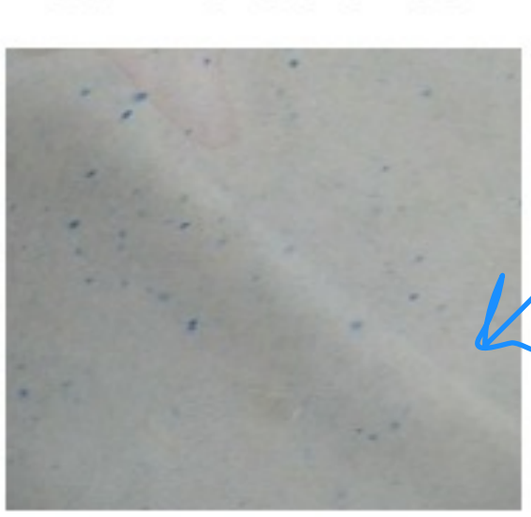
4Gy → Colony formation assay

Day 6

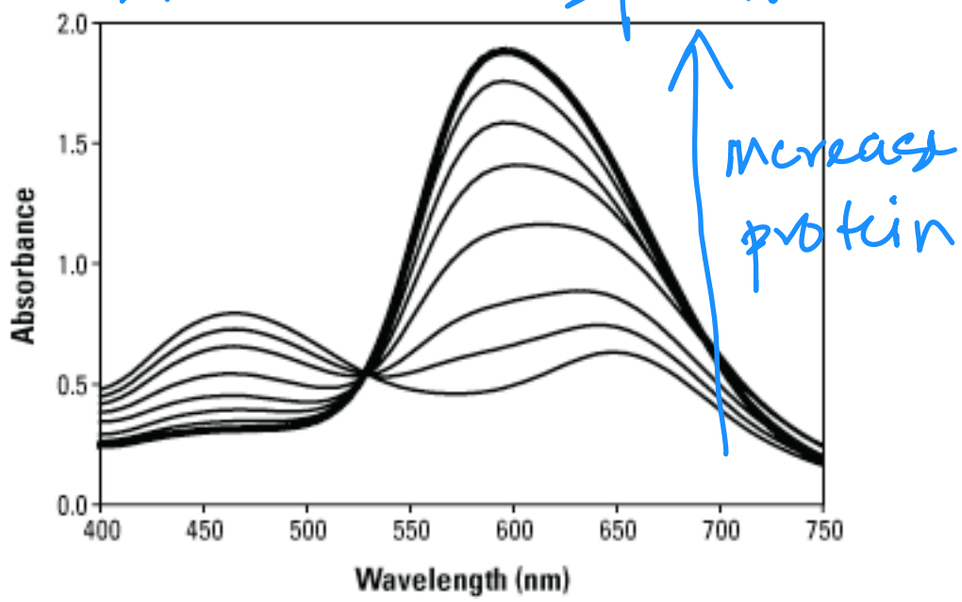
Plate irradiated K1 with varying [C401]

DAY 7

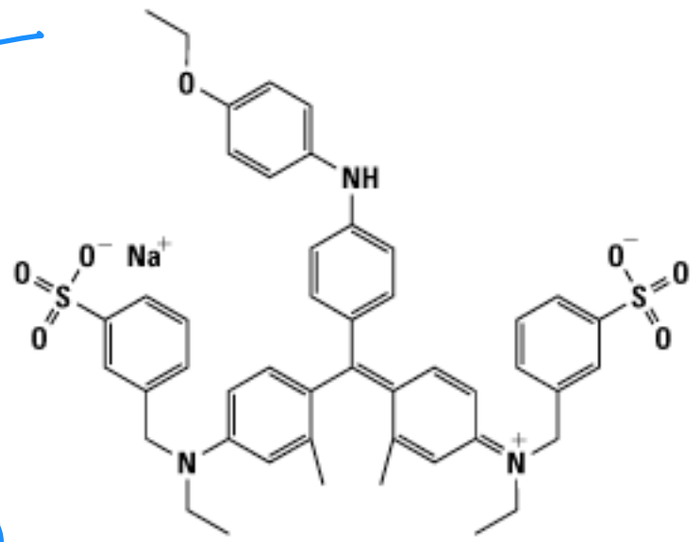
Stain for colonies



Absorbance spectra

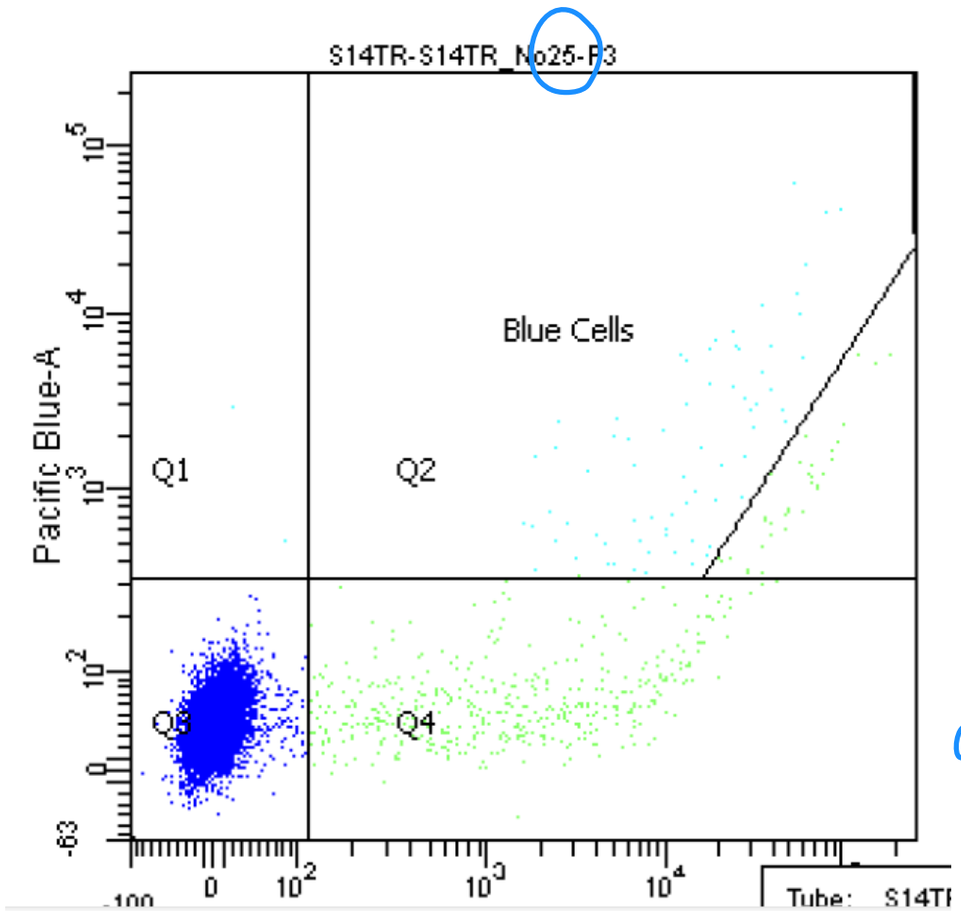


Coomassie binds mainly to basic & aromatic A.A



Coomassie Brilliant Blue G-250 Dye
$C_{47}H_{48}N_3NaO_7S_2$
MW 854.02

Your flow cytometry data:



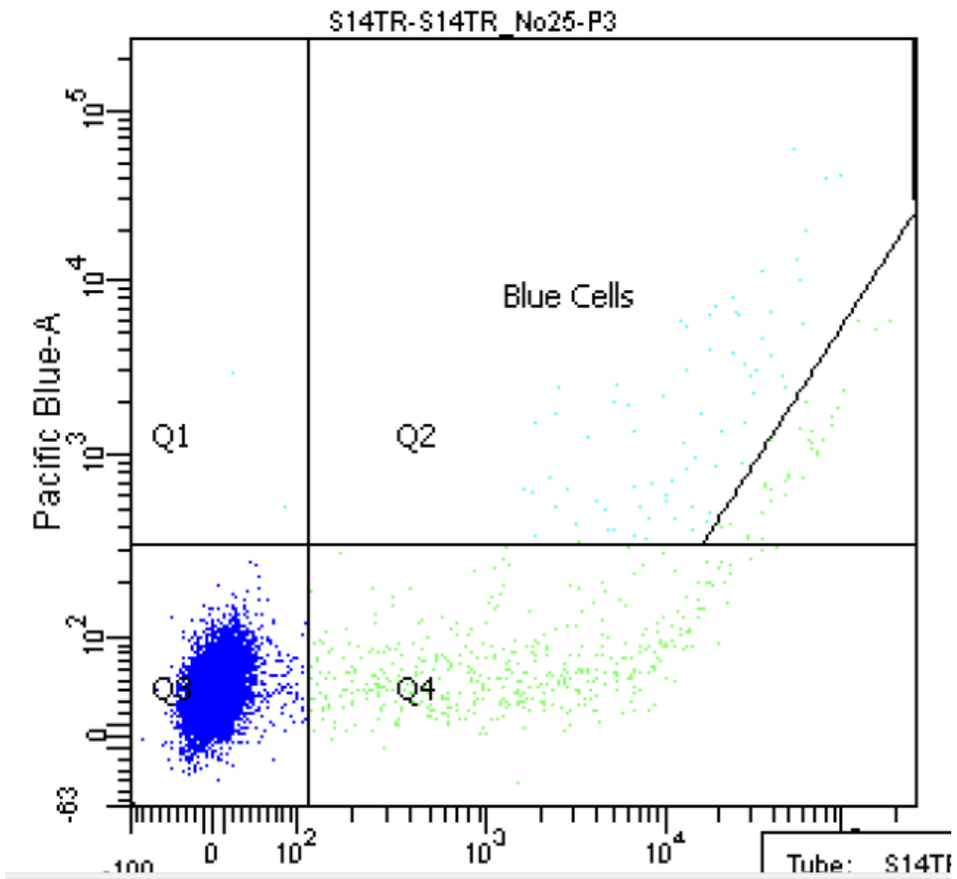
$$Raw_{\substack{BFP \\ GFP}} \equiv \begin{matrix}(\%\,Blue)*(MFI) \\ (\%\,GFP)*(MFI_{GFP})\end{matrix}$$

$$Norm_{conditionX} = \left(\frac{Raw_{BLUE}}{Raw_{Green}}\right)_{conditionX}$$

$$\%\,Repair_{(NHEJ)} = \frac{Norm_{(damaged)}}{Norm_{(intact)}}$$

Population	#Events	%Parent	FITC-A Mean	FITC-A Median	Pacific Blue-A Mean	Pacific Blue-A Median
All Events	15,713	####	825	5	109	39
P3	7,742	85.1	666	4	87	38
Green Cells	557	7.2	9,207	1,799	710	64
Blue Cells	72	0.9	20,297	13,182	4,492	1,444

Your flow cytometry data:



Biological replicates = 2 = days

Technical reps = 2 = wells

*Ideally > 3 bio reps, but we will use what we have!

Population	#Events	%Parent	FITC-A Mean	FITC-A Median	Pacific Blue-A Mean	Pacific Blue-A Median
All Events	15,713	####	825	5	109	39
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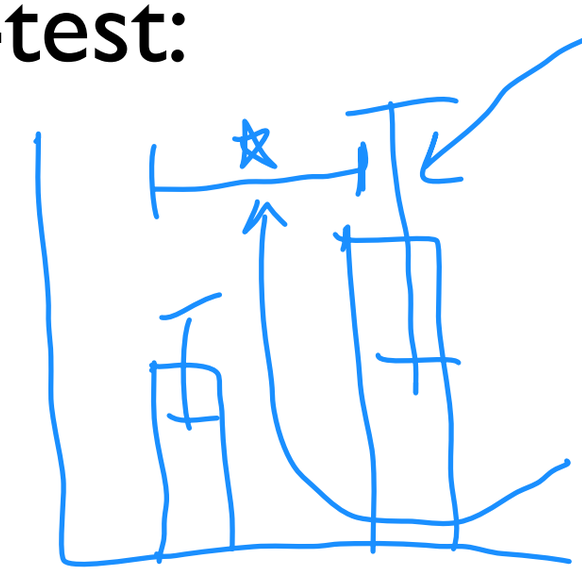
A few more statements about statistics:

Assumption with stats you learned today:

* "Normal" data → follows a guassian distribution

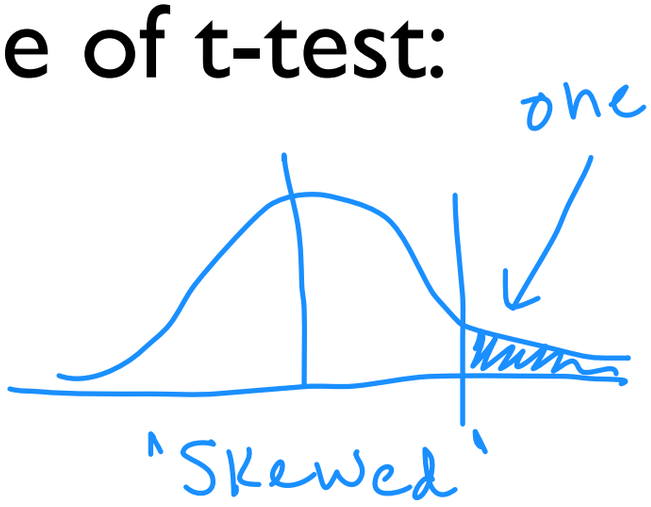
95% CI vs. t-test:

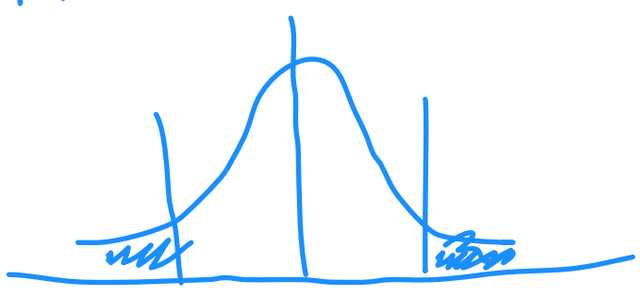


95% CI ⇒ one dataset (condition)

t-test ⇒ between datasets 'Is there a difference bw the means?')

Type of t-test:





→ 2-tail t-test

Table from Day 6 to help orient you:

Condition	Red	Orange	Yellow	Green	Blue	Pink
K1 Intact	16	28	40	52	64	76
K1 Intact	17	29	41	53	65	77
C401 Intact	18	30	42	54	66	78
C401 Intact	19	31	43	55	67	79
xrs6 Intact	20	32	44	56	68	80
xrs6 Intact	21	33	45	57	69	81
K1 damaged	22	34	46	58	70	82
K1 damaged	23	35	47	59	71	83
C401 damaged	24	36	48	60	72	84
C401 damaged	25	37	49	61	73	85
xrs6 damaged	26	38	50	62	74	86
xrs6 damaged	27	39	51	63	75	87

Today in the lab:

1. Decide if you will stain for colonies today or Thursday — get that started if you want to do it today.
2. Analyze your flow data — you MUST finish before you leave and send me the resulting Excel spreadsheet.
3. Classwide data will be finished by end of day tomorrow (Thurs AM latest).

FNT: Methods section revisited.