

Optogenetics Lab Data  
 Sec 002  
 TA: Nadera Dabbain

Group 1: (2 pages)

Group #1 → Justine Major, Alyssa D'Errio SEC 002 pg 1 of 2

Trial #1 (Body Wall contraction) -ATR

Dim/Regular	Low Intensity blue	Dim/Regular	High Intensity blue	Dim/Regular
12	10	21	5	25

Trial #2 (-ATR)

Dim/Regular	Low Intensity blue	Dim/Regular	High Intensity blue	Dim/Regular
13	1	10	0	6

Trial #3 (-ATR)

Dim/Regular	Low Intensity blue	Dim/Regular	High Intensity blue	Dim/Regular
26	0	16	0	17

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Trial #1 (Body Wall Contractions) +ATR

Dim/Regular	Low Intensity blue	Dim/Regular	High Intensity blue	Dim/Regular
3	0	5	0	6

Trial #2 (+ATR)

Dim/Regular	Low Intensity blue	Dim/Regular	High Intensity blue	Dim/Regular
8	1	4	0	5

Trial #3 (+ATR)

Dim/Regular	Low Intensity blue	Dim/Regular	High Intensity blue	Dim/Regular
5	0	4	1	7

+ATR (200 mu) UAS-CHR2-XXI x D42-Gal4 ♀

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Before light exposure

Total flies: 12

1) 12

2) 12

3) 12

After light exposure

1) 0

2) 0

3) 0

4) 0

5) 0

6) 0

- ATR (EtOH) UAS-CHRd-xxx (control) ♀

Total flies: 7

Before light exposure

1) 4

2) 6

3) 5

After light exposure

1) 0

2) 2

3) 3

## Group 2:

Dominick Adornato  
Samuel Fobid

### Bio 350 Group 2

-ATR Contractions: regular dim light: 32 wall contractions (3 larvae) for all

-ATR Blue light: 45 wall contractions (All Trials)

-ATR Blue light Focused: 50 wall contractions (All Trials)

+ATR regular/dim light: 0 wall contractions (mouth moved)

+ATR Blue light: 0 wall contractions (zero movement)

+ATR Blue light focused: 0 wall contractions (zero movement)

XXL Females +ATR: 15 Flies rose above 8cm mark (All Trials)

Light: 0 rose, 12 rose, 14 rose, 14 rose, 13 rose, 15 cross

XXL Males +ATR: 15 rose, 13 rose, 13 rose, 11

Light: 1 rose, 11 rose, 13 rose, 13 rose, 10 rose, 14 cross

XXL Females -ATR: 14 rose, 12, rose, 13 rose

Light: 13, 13, 13, 13, 11, 9

XXL Males -ATR: 12 rose, 11 rose, 14 rose

Light: 14, 14, 11, 12, 11, 11



Group 3: (2 pages)

Sara Humphrey  
Samantha Mullins

Group 3 section 2 pg 1 of 2

### Rolling Behaviors

-ATR	+ATR UAS-ChR2-XXL X ppk-GAL4	
#1 no rolling	<del>no rolling</del> 8 times	} Dim Blue Light
#2 no rolling	11 times	
#3 no rolling	3 times	
#1 no rolling	5 times	} Focused Blue Light
#2 no rolling	6 times	
#3 no rolling	2 times	
#1 no rolling	no rolling	} Dim Light
#2 no rolling	no rolling	
#3 no rolling	no rolling	

More intense light might desensitize the channels.

-ATR UAS-ChR2-XXL X ppk-GAL4 ♀ -ATR ♂ 14 total

<p><del>1: 9</del> <del>2: 13</del> <del>3: 13</del> 13 total</p> <p>Trial 1: 9 2: 10 3: 10 4: 11 5: 6 6: 8 7: 9 8: 8 9: 9</p> <p style="margin-left: 20px;">} No Dim Light</p>	<p>1: 9 2: 13 3: 13 4: 10 5: 10 6: 11 7: 3 8: 4 9: 8</p> <p style="margin-left: 20px;">} Dim Light</p>
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<p>+ATR ♀ 13 total</p> <p>Trial 1: 12 2: 12 3: 11 4: 1 5: 5 6: 7 7: 8 8: 5 9: 6</p> <p style="margin-left: 20px;">} Dim Light</p>	<p>+ATR ♂ 14 total</p> <p>Trial 1: 14 2: 14 3: 13 4: 10 5: 7 6: 8 7: 8 8: 7 9: 3</p> <p style="margin-left: 20px;">} Dim Light</p>
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Group 4:

Karem Abdallah

8/31/15

Ryan Quinton

Group 4

Lined #2

Trail #1  
BC/min  
Dim Light  
Blue light

-ATR

Trail	+ATR	Dim	Blue
1		3	
2			
3			
4			
5			

BC/min

not body wall

foraging neurons activated in low intensity → becomes convulsed (not moving)

→ eating is not affected (different neuro for eating)

Blue High intensity

moving over above band (pre-blue light)

+ATR	Dim or regular	Low intensity blue light	Dim or regular light	Blue High intensity	Dim or Regular
1	3	0	2	0	5
-ATR	53	17	26	6	8

+ATR	Tern-Galy 1 ♀		Soda on blue light		-ATR	Tern-Galy 1 ♀		Soda on blue light	
	Dark	Light	Dark	Light		Dark	Light	Dark	Light
1	7	1 0	1	0	1	8	1	0	
2	7	2 0	2	0	2	8	2	0	moving & happy @ same time
3	12	3 0	3	0	3	13	3	0	
		4 0	4	0			4	0	
		5 2	5	2			5	0	
		6 4	6	4			6	0	

started moving right after the 6th trial

Group 5:

LAB 1 GROUP 5 section: Delaney, Paige, Scott  
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-ATR

	larv.1	larv.2	larv.3	larv.4
dim req	31	34	34	47
sadacan blue	59	29	15*	55
focussed blue	53	14	10*	51

body wall contractions

[used less dorsal focused bl. light on -ATR]

\*stuck on the wall

+ATR

	larv.1	larv.2	larv.3
dim req	19	39	50
focussed blue	2*	2*	8*

body wall contractions

\*moved only when light pointed at tail

145-CLP2-11318-ml-a



Group 6:

Group 6

8/31  
Bio 350-02

Body Contractions

larvae	dim light	blue light (low)	blue light (high)
-ATR 1	38	39	49
-ATR 2	30	18	51
-ATR 3	18	22	45
-ATR 4	33	34	29
-ATR 5	26	41	15
+ATR 1	29	32	45
+ATR 2	30	46	43
+ATR 3	50	42	50
+ATR 4	36	51	52
+ATR 5	38	52	60

Brennan Pike  
Natascha Richardson  
Abel Tucker

-ATR

no light	Flies crossing line	
	dim light	blue light
1. 14	1. 8	1. 6
2. 13	2. 8	2. 8
3. 11	3. 9	3. 9

+ATR flies crossing low

no light	dim light	blue light
1. 8	1. 7	1. 5
2. 7	2. 6	2. 5
3. 8	3. 7	3. 5



Group 7: (2 pages)

	Control -ATR			Control +ATR			Pie -Gal4 +ATR		
regular/dim	30	43	45	23	29	20	26	35	31
soda can low intensity	43	44	26	23	44	26	16	15	24
high intensity leaser tube	46	37	43	39	30	26	27	15	19

Group 7  
Daria Vondra / Erickson Haire  
/ Cole Williams

HEAD	Control -ATR		Control +ATR	Pie-Gal4 +ATR	
DIM	Pause	Slight backward movement.		backwards recoil	backwards recoil
low blue	recoil	Left turn		turn	recoil ↳ slight turn
<u>ABDOMAN</u>					
DIM	C movement	C sharp bend.		Pause	no response
low BLUE	no response	Backwards movement / Pause.		Pause	Pause
<u>TAIL</u>					
DIM	Speeds up / contracts.	Speeds up / contracts		no response	Backwards recoil
low blue	no response	no response		no response	no response

Group 8:

	before light			15 sec. blue light	after light			
	T1	T2	T3		T1	T2	T3	T4
plus ATR males (15) <small>UAS-CAD2-RXN control</small>	14	11	11		13	14	14	13
minus ATR males (16) <small>UAS-CAD2-RXN control</small>	16	16	16		10	7	9	10
plus ATR females (15) <small>UAS-CAD2-RXN PIS-Gal4</small>	9	9	9		7	8	6	9
minus ATR females (13) <small>UAS-CAD2-RXN control</small>	11	7	10		6	5	5	4

during rest period, flies stayed at red line

Group 8

Jordan Wolfe  
 Darrington Richardson  
 Rachael Lowney

emails:  
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Group 9:

Group 9 8-31-19 sec. 002

Austen Shrewsbury

BLO-350

Lei Son

DAS-CHR2-2x2

xPrh-GAM4

Body Contribution

	Dim	Shunters	FOLLYR
0 APR	1-94 2-70	1-29 2-25	1-58 2-86
- APR	1-30	1-20	1-90
	2-94	2-139	2-76
	3-53	3-70	3-63

Docu Assay

	Meal	Abd.	Patl
0 APR	C-benz	No resp.	Purse
- APR	C-benz	No resp.	Forward movement

### Group 10:

With ATR

Males

	100cm	20cm	2	3	4	5	6	7	8	9	10	11			
1	5.95	16.50	4.88	7.8	12.6	26.90	27.32	5.7	10.9	22.27	45.58	3.4	17.3	6.15	8.12
2	17	30.28	42.58	7.25	21.27	9.22	6.13	5.12	10.16	8.14	15.28	9.28			
3	8.29	8.68	55.77	15.60	19.65	12.29	11.46	8.19	15.30	12.55	15.28				

\* may be over stimulated

\* took a long time to recover from blue light

\* vertically

Without ATR

	100cm	20cm	2	3	4	5	6	7	8	9	10	11
1	5.13	3.7	4.8	9.13	3.8	4.5	8.37	8.5	5.9	4.7	3.9	6.11
2	5.11	4.12	4.9	4.8	5.9	4.9	4.10	4.7	6.9	6.9	4.10	
3	11.95	15.22	4.11	4.10	4.10	6.11	5.11	3.5	9.4	10.13	19.38	9.9

Damon Wallace  
Taylor Duplessis

Group # 10