

LAB 1, Section 001

GROUP 1: D42-Gal4 X UAS-Chr2-XXL ; 1. Larval locomotion (BWC) 2. Adults negative geotaxis +ATR and -ATR

Group 1
Amanda Spence
Lina Ghazala

TRIAL	Dim light	Low intensity	Dim light	High intensity	P1M Light
+ATR					
1	7	0	0	1	3
2	0	0	0	0	0
3	0	0	0	0	0
4	0	0	0	0	0
5	0	0	0	0	0

employee's cost
common rate of entry into the body
labels of chem

-ATR	Dim light	Low intensity	Dim light	High intensity	Dim Light
1	21	2	21	4	21
2	0	0	0	0	0
3	23	0	26	7	23
4					
5					

Group 1
Amanda Spence
Lina Ghazala

Before Light	Female	
	ATR-	ATR+
1	2/2	2/2
2	5/2	13/15
3	1/2	15/15
4	1/10	15/15

After blue light

After blue light	Female	
	ATR-	ATR+
1	10/10	15/15
2	10/10	15/15
3	1/10	15/15
4	1/10	15/15

Ado H

ATR(-): Began to climb walls in trial 1 after light. Became active in trial 2 and 3 but never crossed the line.

ATR(+): Became completely immobile after light exposure. Waited 2 minutes between trial 1 and trial 2. Never crawled up in trial 3.

GROUP 2: Gad1-Gal4 X UAS-Chr2-XXL; 1. Larval locomotion (BWC) 2. Adult negative geotaxis +ATR and -ATR

Regular Light -ATR
46, 52, 54, 55
30 movements

Blue Light 1/4 side can
movements
48, 51, 53, 57, 59

Focused focal blue light
60, 62, 64, 65, 66
movements

+ATR
Regular light
3, retard No movement, 1, no mov, No mov

Blue Light 1/4 side can
2, 2, 1, 2, 2

Blue Light focused focal
4, 3, 2, 3, 2

UAS-Chr2-XXL Group 2
X Gad1-Gal4
(GABAergic neurons)

Param Pate
Kavi Dayaram
Ser. 001

Negative geotaxis assay

-ATR Female
regular light
5, 8, 8

Blue Light
12, 10, 10

+ATR Female
Regular light
5, 6, 5

Blue Light
1, 2, 1

Group-2
Param Pate
Kavi Dayaram

GROUP 3: ppk-Gal4 XUAS-Chr2-XXL; 1. rolling behavior in larvae 2. Negative geotaxis + ATR and - ATR

Rolling Behavior

-ATR	+ATR
1: 0,0	1. 8,5
2 0,0	2. 1,0
3 1,0	3. 2,3
4 0,0	4. 0,4
5 0,0	5. 0,0

Group 3
X-ppk-Gal4
Tyler Bayes
Lee Sanders

-ATR (male)	-ATR (female)	+ATR (male)	+ATR (female)
1 14/15	1 15/15	1 9/15	1 15/15
2 11/15	2 11/15	2 14/15	2 12/15
3 8/15	3 4/15	3 11/15	3 6/15
1 13/15	1 12/15	1 12/15	1 4/15
2 10/15	2 10/15	2 10/15	2 5/15
3 10/15	3 14/15	3 3/15	3 1/15
4 7/15	4	4	4
5 7/15	5	5	5
6 8/15	6	6	6

GROUP 4: Trh-Gal4 X UAS-Chr2-XXL; 1. Larval locomotion +ATR -ATR 2. Adult negative geotaxis +/-ATR

XXL * Trh-Gal4

ATR		
dark light	white light	no light
16	26	30
37	24	14
46	45	43
41	24	35
29	36	38

Group 4
Caleb Dawson
+ Hannah Davis

+ATR		
dark light	white light	no light
8	7	22
0	0	8
0	0	4

XXL * Trh-Gal4

Females	Trial w/o light	w/ light
①	8	0
②	9	0

Males	Trial w/o light	w/ light
①	11	0
②		

group 4
Caleb Dawson
+ Hannah Davis

GROUP 5: OK371-Gal4 X UAS-Chr2H134R mcherry 1. Larval locomotion +/- ATR 2. Negative geotaxis

GROUP 5

Trial	Reg	Light	Speed	ATR	Speed
1)	-ATR	Dim Light	14 mm/min	Normal Dim light	27 mm/min
2)	-ATR	Dim light	11 mm/min	Blue Dim	27 mm/min
3)	-ATR	Dim light	15 mm/min	Blue Intense	0 mm/min

Blue light side cam

Trial	Reg	Light	Speed	ATR	Speed
1)	-ATR	Dim Blue light	14 mm/min	2) + ATA Normal Dim	19 mm/min
	-ATR	Blue Intense light	10 mm/min	Blue Dim	15 mm/min
				Blue Intense	0 mm/min
2)	-ATR	Blue Dim light	17 mm/min		
		Blue Intense light	29 mm/min		
3)	-ATR	Blue Dim light	17 mm/min		
		Blue Intense light	16 mm/min		
4)	-ATR	Blue Dim light			
		Blue Intense light			

GROUP 5
JENNIFER HARP
Will Akin
Sam Mwanfogwe (washed section 12:00)

Phototaxis Assay

Group 5

Trial	Reg	Light	Time	ATR	Speed
1)	TATA	8 above line	15 sec	Normal light	
	Males	14 above line	15 sec		
		6 above line	15 sec	Blue dim light	
		3 above line	15 sec	Blue dim light	

Will
Sam
Jennifer

GROUP 6: Trh-Gal4 X UAS-Chr2H134R-mcherry 1. Larval locomotion +/- ATR 2. Adult negative geotaxis +/- ATR

Group 6 Savannah Schlueter, Trey Cardwell

Larval locomotion behavior (-ATR n=5, +ATR n=5)

ATR	Dim or regular light/min	Low intensity blue light/min	Dim or regular light/min	High intensity blue light/min	Dim or regular light/min
1	29	12	31	6	25
2	30	15	23	4	22
3	30	15	20	3	32
4	29	5	24	5	29
5	31	12	28	7	26

ATR	Dim or regular light/min	Low intensity blue light/min	Dim or regular light/min	High intensity blue light/min	Dim or regular light/min
1	28	16	15	7	13
2	16	14	15	25	30
3	15	19	17	30	25
4	22	17	25	26	8

ATR takes time to recover at first under blue light, and then start to move - longer recovery under more intense light

Group 6 UAS-Chr2H134R-mcherry x Trh-Gal4

negative geotaxis assay - Females + and - ATR

ATR one dead one so only 14

Before	T1	T2	T3
	12	10	10
After	12	13	13

Before	T1	T2	T3
	13	13	14
After	10	12	11

Out of 15

Savannah Schlueter
Trey Cardwell

GROUP 7: ple-Gal4 X UAS-ChR2-XXL 1. Larval locomotion (BWC) +/- ATR 2. Adult negative geotaxis

UAS - ChR2 - XXL Xple - Gal4 + ATR

Bio 350 Lab 1 (Group 7)

BWC = /min	blue	can	Reg	Focus	Reg
Trial	Reg	Can	Reg	Focus	Reg
1	9	25	17	28	19
2	11	19	13	25	10
3	12	22	15	24	13
4	12	25	14	24	13
5	11	23	14	26	13

Matt Roman
Alex Lange

Touch	head	body	tail
normal	left turn	C	no response
blue	C	stop	no response
normal	left turn	C	Tail flip
blue	backwards	stop	no response
normal	left turn	stop	stop
blue	stop	C	stop
Normal	right turn	C	no response
blue	stop	no response	tail flip
normal	left turn	C	no response
blue	right turn	stop	tail flip

GROUP 8: ple-Gal4 X UAS-ChR2-XXL plus ATR; 1. Adult negative geotaxis +/- ATR

Control	Group 8 (sexes)	Complete stop even after light was removed (+ ATR) n=15
<p>• males (-ATR) n=15</p> <ul style="list-style-type: none"> 13 } Normal 13 } Normal 13 } Normal 12 } After blue light 12 } After blue light 	<p>After blue light</p> <ul style="list-style-type: none"> 12 } After blue light 13 } After blue light 11 } After blue light 	<p>Complete stop even after light was removed (+ ATR) n=15</p> <ul style="list-style-type: none"> 14 } may not stay 14 } may not stay 13 } may not stay
<p>• Females (-ATR) n=15</p> <ul style="list-style-type: none"> 14 } After blue light 14 } After blue light 14 } After blue light 12 } hyperactive 14 } hyperactive 14 } hyperactive 	<p>After blue light</p> <ul style="list-style-type: none"> 13 } After blue light 13 } After blue light 12 } After blue light 	<p>(+ ATR) n=15</p> <ul style="list-style-type: none"> 13 } After blue light 14 } After blue light 13 } After blue light 13 } After blue light 11 } After blue light 11 } After blue light <p>- paralyzed when blue light shines - go very slow after</p>

GROUP 9: Trh-Gal4 X UAS-Chr2-XXL 1. Larval locomotion (BWC) 2. Touch Assay

Katie Barnes Group 9
Daniel Campbell

light	Body Wall Contractions				
	Minute 1	Minute 2	Minute 3	Minute 4	Minute 5
dark +ATR	4	22	27	28	30
dark +ATR	0	20	30	29	41
dark -ATR	8	22	23	20	24
dark -ATR	7	16	23	23	25

	Head	Abdomen	Tail
+ATR	Crawl	pause	crawled away
+ATR	Crawl	pause	crawl faster
-ATR	Crawl	pause/crawl	crawl faster
-ATR	Crawl	pause	crawled away

GROUP 10: D42-Gal4 X UAS-Chr2-XXL and UAS-Chr2-XXL (control) +/- ATR

1. Adult phototaxis

Group 10 ♀ & control
Erich Sinclair
Rikin Imanishi

Trial #	Trial Type	Time	Behavior
1	LED	10cm - 5s 20cm - 9s	Fast
	Blue	10cm - 6s 20cm - 13s	Slower
2	LED	10cm - 5s 20cm - 9s	Fast
	Blue	10cm - 14s 20cm - 21s	Confused (back & forth)
3	LED	10cm - 5.5s 20cm - 9s	Fast
	Blue	10cm - 7s 20cm - 14s	Slower, straight for most part
4	LED	10cm - 6.25s 20cm - 19s	Slow
	Blue	10cm - 14s 20cm - 22s	Started very slowly
5	LED	10cm - 5s 20cm - 8.75s	
	Blue	10cm - 5s 20cm - 13s	started strong, ended weak
6	LED	10cm - 3s 20cm - 7s	So fast
	Blue	10cm - 4.5s 20cm - 11s	Not bad
7	LED	10cm - 5s 20cm - 11.5s	
	Blue	10cm - 8s 20cm - 14.5s	
8	LED	10cm - 8s 20cm - 17s	Slow reaction time
	Blue	10cm - 7s 20cm - 15s	

9	LED	10cm - 5s 20cm - 9s	Average
	Blue	10cm - 6s 20cm - 14s	
10	LED	10cm - 4s 20cm - 12s	Good start, back end
	Blue	10cm - 8.5s 20cm - 10s	

Erich Sinclair
Group 10