

Notes for the experiment:	Operator:	Species:	Date start:	Date end:				
	ZT	Raphidocelis	4/2/2015	4/5/2015				
SAMPI atrazine [ug/L] concentrations ug/L	3.91	7.81	15.63	31.25	62.50	125.00	250.00	500.00

Plate scheme+Raw data

atrazine [ug/L]								0
	3.91	7.81	15.63	31.25	62.5	0	125	

0h

Plate Title	1	2	3	4	5	6	7	8
A	0.0370	0.0380	0.0370	0.0370	0.0380	0.0380	0.0370	0.0370
B	0.0380	0.0440	0.0430	0.0430	0.0430	0.0430	0.0430	0.0430
C	0.0380	0.0430	0.0430	0.0430	0.0430	0.0430	0.0430	0.0430
D	0.0370	0.0430	0.0430	0.0430	0.0440	0.0430	0.0430	0.0420
E	0.0370	0.0420	0.0430	0.0420	0.0430	0.0430	0.0420	0.0420
F	0.0380	0.0430	0.0440	0.0420	0.0430	0.0430	0.0430	0.0420
G	0.0370	0.0420	0.0430	0.0430	0.0430	0.0470	0.0420	0.0420
H	0.0380	0.0370	0.0380	0.0370	0.0380	0.0370	0.0380	0.0360
AVG	0.0375	0.0375	0.0375	0.0370	0.0380	0.0375	0.0375	0.0365

24h

A	0.0370	0.0380	0.0370	0.0370	0.0380	0.0380	0.0370	0.0370
B	0.0390	0.0580	0.0560	0.0570	0.0580	0.0550	0.0580	0.0510
C	0.0380	0.0570	0.0560	0.0560	0.0550	0.0550	0.0570	0.0510
D	0.0380	0.0550	0.0550	0.0550	0.0560	0.0540	0.0560	0.0510
E	0.0400	0.0540	0.0540	0.0530	0.0520	0.0520	0.0540	0.0530
F	0.0380	0.0550	0.0550	0.0530	0.0510	0.0510	0.0530	0.0500
G	0.0370	0.0560	0.0560	0.0550	0.0520	0.0520	0.0520	0.0500
H	0.0380	0.0370	0.0380	0.0380	0.0380	0.0370	0.0380	0.0360
AVG	0.0381	0.0375	0.0375	0.0375	0.0380	0.0375	0.0375	0.0365

48h

A	0.0390	0.0390	0.0390	0.0390	0.0400	0.0440	0.0390	0.0390
B	0.0400	0.0970	0.1260	0.0900	0.0940	0.0850	0.0920	0.0750
C	0.0390	0.0980	0.1230	0.0810	0.0810	0.0700	0.0840	0.0670
D	0.0390	0.0750	0.0740	0.0790	0.0750	0.0710	0.0740	0.0650
E	0.0410	0.0930	0.1130	0.0800	0.0760	0.0690	0.0740	0.0730
F	0.0400	0.0860	0.1160	0.0870	0.0830	0.0770	0.0820	0.0650
G	0.0390	0.0900	0.1170	0.0900	0.0890	0.0790	0.0870	0.0670
H	0.0390	0.0370	0.0380	0.0380	0.0390	0.0380	0.0380	0.0370
AVG	0.0395	0.0380	0.0385	0.0385	0.0395	0.0410	0.0385	0.0380

72h

A	0.0400	0.0390	0.0390	0.0410	0.0400	0.0460	0.0390	0.0430
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B	0.0400	0.1810	0.1630	0.1710	0.1740	0.1540	0.1720	0.1250
C	0.0400	0.1750	0.1380	0.1370	0.1320	0.1140	0.1360	0.1060
D	0.0390	0.1600	0.1300	0.1280	0.1170	0.1040	0.1100	0.0920
E	0.0410	0.1650	0.1390	0.1360	0.1250	0.1130	0.1170	0.1150
F	0.0400	0.1700	0.1480	0.1540	0.1400	0.1330	0.1340	0.1120
G	0.0380	0.2110	0.1840	0.1870	0.1620	0.1550	0.1560	0.1230
H	0.0390	0.0370	0.0380	0.0380	0.0390	0.0380	0.0380	0.0370
AVG	0.0396	0.0380	0.0385	0.0395	0.0395	0.0420	0.0385	0.0400

H11

H12

SAMPLE 1	Stock conc. SAMLE 1	Solvent	Total exposition duration (h):	Temperature (°C):	Photoperiod (h):	Light intensity (lux):	Cultivation medium:	Standard substance
atr [ug/L]	800mg/L	DMSO	72	24	24	4000	50% ZBB	K ₂ Cr ₂ O ₇
1000.00								

250	500	1000	
9	10	11	12
0.0370	0.0380	0.0370	0.0380
0.0430	0.0440	0.0430	0.0420
0.0430	0.0430	0.0430	0.0420
0.0450	0.0420	0.0430	0.0380
0.0440	0.0420	0.0430	0.0380
0.0430	0.0420	0.0430	0.0380
0.0430	0.0430	0.0430	0.0380
0.0370	0.0370	0.0370	0.0360
0.0370	0.0375	0.0370	0.0381

9	10	11	12
0.0380	0.0390	0.0370	0.0380
0.0480	0.0480	0.0440	0.0420
0.0480	0.0450	0.0440	0.0430
0.0480	0.0440	0.0470	0.0380
0.0550	0.0530	0.0440	0.0380
0.0480	0.0440	0.0440	0.0380
0.0480	0.0460	0.0440	0.0380
0.0380	0.0370	0.0370	0.0360
0.0380	0.0380	0.0370	0.0384

9	10	11	12
0.0390	0.0400	0.0410	0.0400
0.0640	0.0520	0.0470	0.0430
0.0620	0.0510	0.0470	0.0430
0.0590	0.0490	0.0470	0.0390
0.0770	0.0790	0.0460	0.0390
0.0590	0.0500	0.0470	0.0390
0.0600	0.0510	0.0460	0.0390
0.0380	0.0380	0.0380	0.0370
0.0385	0.0390	0.0395	0.0396

9	10	11	12
0.0390	0.0400	0.0400	0.0400

Blank subtractions

0h	atrazine [ug/l]
A	
B	
C	
D	
E	
F	
G	
H	
0.005	AVG
0.001	SD
14.368	CV %
24h	atrazine [ug/l]
A	
B	
C	
D	
E	
F	
G	
H	
0.016	AVG
0.002	SD
13.558	CV %
48h	atrazine [ug/l]
A	
B	
C	
D	
E	
F	
G	
H	
0.042	AVG
0.012	SD
27.391	CV %
72h	atrazine [ug/l]
A	

0.0950	0.0610	0.0490	0.0430
0.0900	0.0600	0.0490	0.0430
0.0790	0.0590	0.0490	0.0390
0.1220	0.1200	0.0490	0.0390
0.0870	0.0590	0.0480	0.0390
0.0890	0.0610	0.0490	0.0400
0.0380	0.0380	0.0390	0.0370
0.0385	0.0390	0.0395	0.0397

B	
C	
D	
E	
F	
G	
H	
0.092	AVG
0.020	SD
21.346	CV %

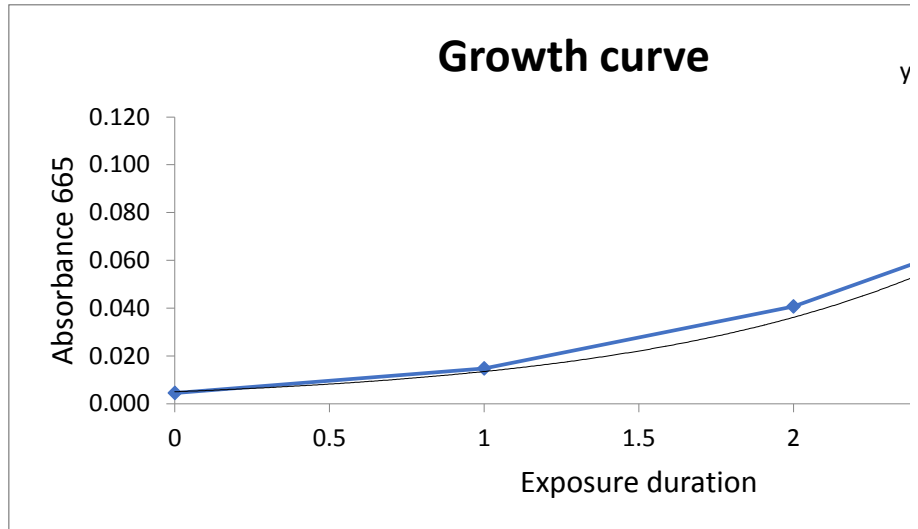
OD	0
	1
	2
	3

Stock solution of standrd substance (g/L):	Stock solution prepared on:	Stock solution prepared by:	Culture flask started on:	Culture flask started by:	Cells per mL in culture vessel	Cells per mL at start	Dillution factor
2	1/12/2015	ZT	1/9/2015	ZT		1000000	6

trazine [ug/L]					0				
3.91	7.81	15.63	31.25	62.5	0	125	250	500	
3.91	7.81	15.63	31.25	62.5	0	125	250	500	
0.0065	0.0055	0.0060	0.0050	0.0055	0.0055	0.0065	0.0060	0.0065	
0.0055	0.0055	0.0060	0.0050	0.0055	0.0055	0.0065	0.0060	0.0055	
0.0055	0.0055	0.0060	0.0060	0.0055	0.0055	0.0055	0.0080	0.0045	
0.0039	0.0049	0.0039	0.0049	0.0049	0.0049	0.0039	0.0039	0.0059	
0.0055	0.0065	0.0050	0.0050	0.0055	0.0055	0.0055	0.0060	0.0045	
0.0045	0.0055	0.0060	0.0050	0.0095	0.0045	0.0055	0.0060	0.0055	
0.0055	0.0057	0.0058	0.0052	0.0063	0.0053	0.0059	0.0064	0.0053	
0.0007	0.0004	0.0004	0.0004	0.0018	0.0004	0.0005	0.0009	0.0008	
12.8565	7.8459	7.7106	8.6003	28.3945	8.4380	9.2834	13.9754	15.7860	
3.91	7.81	15.63	31.25	62.5	0	125	250	500	
0.0205	0.0185	0.0195	0.0200	0.0175	0.0205	0.0145	0.0100	0.0100	
0.0195	0.0185	0.0185	0.0170	0.0175	0.0195	0.0145	0.0100	0.0070	
0.0175	0.0175	0.0175	0.0180	0.0165	0.0185	0.0145	0.0100	0.0060	
0.0156	0.0156	0.0146	0.0136	0.0136	0.0136	0.0156	0.0146	0.0166	
0.0175	0.0175	0.0155	0.0130	0.0135	0.0155	0.0135	0.0100	0.0060	
0.0185	0.0185	0.0175	0.0140	0.0145	0.0145	0.0135	0.0100	0.0080	
0.0187	0.0181	0.0177	0.0164	0.0159	0.0177	0.0141	0.0100	0.0074	
0.0013	0.0005	0.0015	0.0029	0.0018	0.0026	0.0005	0.0000	0.0017	
6.9724	3.0261	8.3799	17.5669	11.4251	14.6239	3.8846	0.0000	22.6124	
3.91	7.81	15.63	31.25	62.5	0	125	250	500	
0.0590	0.0875	0.0515	0.0545	0.0440	0.0535	0.0370	0.0255	0.0130	
0.0600	0.0845	0.0425	0.0415	0.0290	0.0455	0.0290	0.0235	0.0120	
0.0370	0.0355	0.0405	0.0355	0.0300	0.0355	0.0270	0.0205	0.0100	
0.0534	0.0734	0.0404	0.0364	0.0294	0.0294	0.0344	0.0334	0.0374	
0.0480	0.0775	0.0485	0.0435	0.0360	0.0435	0.0270	0.0205	0.0110	
0.0520	0.0785	0.0515	0.0495	0.0380	0.0485	0.0290	0.0215	0.0120	
0.0512	0.0727	0.0469	0.0449	0.0354	0.0453	0.0298	0.0223	0.0116	
0.0094	0.0212	0.0051	0.0073	0.0061	0.0066	0.0041	0.0022	0.0011	
18.2907	29.1694	10.9347	16.3360	17.3677	14.6762	13.9171	9.7217	9.8291	
3.91	7.81	15.63	31.25	62.5	0	125	250	500	

0.1430	0.1245	0.1315	0.1345	0.1120	0.1335	0.0850	0.0565	0.0220
0.1370	0.0995	0.0975	0.0925	0.0720	0.0975	0.0660	0.0515	0.0210
0.1220	0.0915	0.0885	0.0775	0.0620	0.0715	0.0520	0.0405	0.0200
0.1253	0.0993	0.0963	0.0853	0.0733	0.0733	0.0773	0.0753	0.0823
0.1320	0.1095	0.1145	0.1005	0.0910	0.0955	0.0720	0.0485	0.0200
0.1730	0.1455	0.1475	0.1225	0.1130	0.1175	0.0830	0.0505	0.0220
<hr/>								
0.1414	0.1141	0.1159	0.1055	0.0900	0.1031	0.0716	0.0495	0.0210
0.0193	0.0214	0.0242	0.0230	0.0230	0.0236	0.0135	0.0058	0.0010
13.6274	18.7931	20.8383	21.7597	25.5918	22.8460	18.8055	11.7797	4.7619

AVG	SD	CV%
0.005	0.0006992	15.3859
0.015	0.0010328	6.97311
0.041	0.0133754	32.8274
0.087	0.0162635	18.7295



1000
1000
0.0060
0.0060
0.0060
0.0039
0.0060
0.0060
0.0060
0.0000
0.0000
1000
0.0070
0.0070
0.0100
0.0146
0.0070
0.0070
0.0076
0.0013
17.6532
1000
0.0075
0.0075
0.0075
0.0394
0.0075
0.0065
0.0073
0.0004
6.1262
1000

Growth rate calculation - μ

		atrazine [$\mu\text{g/L}$]				
		3.91	7.81	15.63	31.25	62.50
0-72h		1.03	1.04	1.03	1.10	1.00
3d		1.07	0.97	0.93	0.97	0.86
		1.03	0.94	0.90	0.85	0.81
		1.15	1.00	1.07	0.95	0.90
		1.06	0.94	1.04	1.00	0.94
		1.22	1.09	1.07	1.07	0.83
AVG		1.082	0.995	0.993	0.998	0.886
SD		0.077	0.068	0.075	0.095	0.082
CV %		7.119	6.833	7.576	9.540	9.302

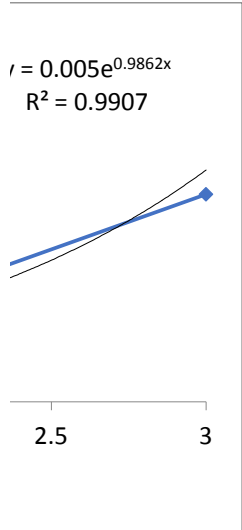
					AVG cor	1.19
0-24		1.15	1.21	1.18	1.39	1.16
1d		1.27	1.21	1.13	1.22	1.16
		1.16	1.16	1.07	1.10	1.10
		1.38	1.15	1.31	1.01	1.01
		1.16	0.99	1.13	0.96	0.90
		1.41	1.21	1.07	1.03	0.42
AVG		1.229	1.157	1.115	1.139	0.947
SD		0.114	0.096	0.046	0.170	0.312
CV %		9.294	8.329	4.112	14.929	32.922

					AVG cor	1.08
0-48		1.10	1.38	1.07	1.19	1.04
2d		1.19	1.37	0.98	1.06	0.83
		0.95	0.93	0.95	0.89	0.85
		1.30	1.35	1.16	1.00	0.89
		1.08	1.24	1.14	1.08	0.94
		1.22	1.33	1.07	1.15	0.69
AVG		1.112	1.250	1.044	1.074	0.870
SD		0.107	0.186	0.075	0.117	0.129
CV %		9.592	14.887	7.199	10.849	14.856

					AVG cor	0.96
24-48		1.06	1.55	0.97	1.00	0.92
1d		1.12	1.52	0.83	0.89	0.51
		0.75	0.71	0.84	0.68	0.60

0.0095
0.0095
0.0095
0.0803
0.0085
0.0095
0.0093
0.0004
4.8087

	1.23	1.55	1.02	0.98	0.77
	1.01	1.49	1.14	1.21	0.98
	1.03	1.45	1.08	1.26	0.96
AVG	0.994	1.343	0.972	1.009	0.794
SD	0.144	0.357	0.139	0.238	0.225
CV %	14.469	26.620	14.299	23.580	28.304
	AVG cor				0.79
48-72	0.89	0.35	0.94	0.90	0.93
1d	0.83	0.16	0.83	0.80	0.91
	1.19	0.95	0.78	0.78	0.73
	0.85	0.30	0.87	0.85	0.91
	1.01	0.35	0.86	0.84	0.93
	1.20	0.62	1.05	0.91	1.09
AVG	1.024	0.485	0.892	0.846	0.917
SD	0.173	0.305	0.106	0.057	0.129
CV %	16.854	62.783	11.862	6.796	14.090



0	125	250	500	1000	
0					
1.06	0.86	0.75	0.41	0.15	
0.96	0.77	0.72	0.45	0.15	NC
0.85	0.75	0.54	0.50	0.15	0.97
0.90	0.99	0.98	0.88	1.00	0.09
0.95	0.86	0.70	0.50	0.12	9.37
1.09	0.90	0.71	0.46	0.15	SC
0.983	0.828	0.682	0.462	0.146	0.99
0.094	0.065	0.081	0.038	0.017	0.08
9.558	7.853	11.924	8.249	11.375	8.46

0.1415	11.857				
1.32	0.80	0.51	0.43	0.15	
1.27	0.80	0.51	0.24	0.15	NC
1.21	0.97	0.22	0.29	0.51	1.17
1.01	1.38	1.31	1.03	1.31	0.12
1.04	0.90	0.51	0.29	0.15	10.47
1.17	0.90	0.51	0.37	0.15	SC
1.200	0.874	0.453	0.324	0.225	1.21
0.107	0.072	0.129	0.077	0.160	0.14
8.899	8.194	28.383	23.614	70.741	11.70

0.1406	13.041				
1.14	0.87	0.72	0.35	0.11	
1.06	0.75	0.68	0.39	0.11	NC
0.93	0.80	0.47	0.40	0.11	1.04
0.89	1.08	1.07	0.92	1.15	0.11
1.03	0.80	0.61	0.45	0.11	10.99
1.19	0.83	0.64	0.39	0.04	SC
1.070	0.808	0.626	0.395	0.097	1.10
0.099	0.045	0.096	0.036	0.032	0.14
9.238	5.629	15.404	9.054	32.899	12.74

0.2295	23.822				
0.96	0.94	0.94	0.26	0.07	
0.85	0.69	0.85	0.54	0.07	NC
0.65	0.62	0.72	0.51	-0.29	0.91

Growth rate inhibition %		
atrazine [ug/L]		
	3.91	7.81
0-72h	-3.93	-4.89
3d	-8.11	2.65
	-4.21	5.46
	-16.29	-0.88
	-6.86	5.04
	-22.70	-10.13
AVG	-9.16	-0.37
SD	7.77	6.86

0-24h	3.72	-1.68
1d	-6.09	-1.68
	2.98	2.98
	-15.31	3.63
	2.98	16.98
	-18.50	-1.68
AVG	-2.98	2.99
SD	9.57	8.08

0-48h	-2.29	-28.32
1d	-10.82	-26.70
	11.60	13.52
	-20.87	-25.14
	-0.47	-14.94
	-13.49	-23.28
AVG	-3.10	-15.95
SD	9.89	17.26

GRI		atrazine [u
	c	3.91
	log c	0.59
0h	AVG	
	SD	
24h	AVG	-2.98

0.77	0.79	0.83	0.81	0.99	0.20
1.03	0.69	0.72	0.61	0.07	21.69
1.21	0.76	0.77	0.41	-0.07	SC
0.940	0.742	0.798	0.465	-0.031	1.00
0.207	0.120	0.095	0.134	0.156	0.23
22.071	16.189	11.910	28.888	-504.862	23.00
0.1517	19.178				
0.91	0.83	0.80	0.53	0.24	
0.76	0.82	0.78	0.56	0.24	NC
0.70	0.66	0.68	0.69	0.24	0.83
0.91	0.81	0.81	0.79	0.71	0.09
0.79	0.98	0.86	0.60	0.13	10.85
0.88	1.05	0.85	0.61	0.38	SC
0.810	0.868	0.795	0.597	0.243	0.77
0.089	0.154	0.072	0.063	0.090	0.15
10.948	17.748	9.107	10.519	37.213	19.77

	SD	9.57
48h	AVG	-3.10
	SD	9.89
72h	AVG	-9.16
	SD	7.77

	For GraphPad prism	
72h	% Growth r c	
	atrazine [μ g]	3.91
		7.81
		15.63
		31.25
		62.50

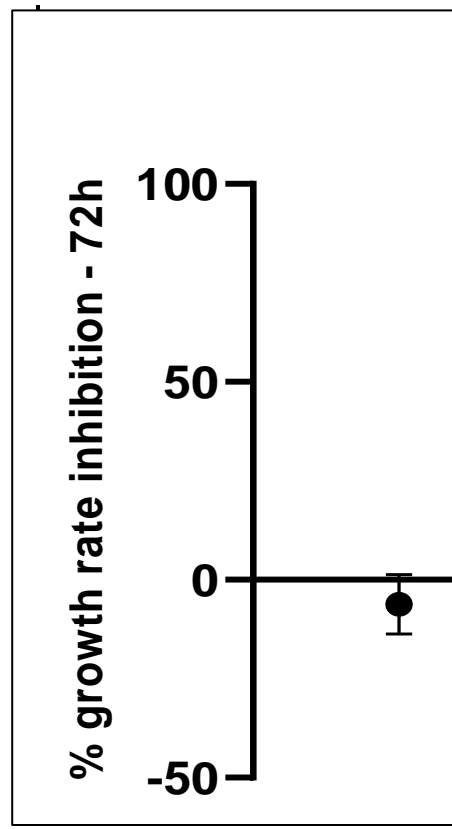
Atrazine - Growth Rate Inhibition 7.	
EC50	383 ug/L
EC20	143 ug/L

				0				
15.63	31.25	62.5	0	125	250	500	1000	
-3.80	-10.69	-1.33	-9.71	13.56	24.60	59.00	84.55	
6.25	1.89	13.52	1.10	22.07	27.72	54.95	84.55	
9.51	13.97	18.55	11.77	24.47	45.47	49.85	84.55	
-7.44	4.23	9.33	7.24	-0.06	0.82	11.63	-1.34	
-5.28	-0.89	5.65	1.82	13.52	29.73	49.85	88.29	
-7.66	-7.55	16.75	-12.22	8.74	28.37	53.39	84.55	
-0.20	-0.65	10.63	-1.45	16.47	31.18	53.41	85.30	
7.59	9.60	8.31	9.70	6.56	8.21	3.84	1.67	

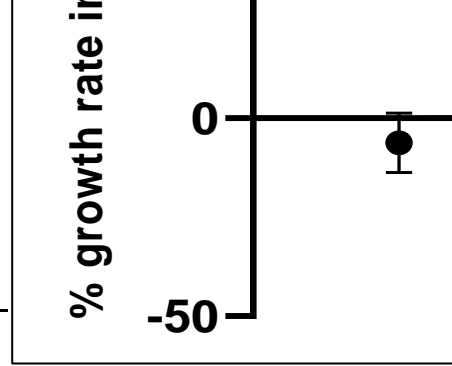
1.21	-16.20	2.98	-35.77	32.75	57.18	63.89	87.08
5.62	-2.58	2.98	-30.61	32.75	57.18	79.79	87.08
10.28	7.91	7.91	-25.18	18.74	81.30	75.89	57.18
-9.76	15.12	15.12	-4.50	-15.31	-9.76	13.87	-9.76
5.17	19.91	24.73	-6.92	24.73	57.18	75.89	87.08
10.28	13.70	64.56	-20.74	24.73	57.18	68.59	87.08
6.51	4.55	20.63	-23.84	26.74	62.01	72.81	81.10
3.84	14.25	26.13	11.02	6.00	10.78	6.42	13.37

0.30	-10.78	3.56	-17.38	19.35	32.90	67.85	89.65
9.21	1.86	22.90	-9.02	30.64	36.68	63.82	89.65
11.44	17.55	21.32	3.78	26.21	56.36	62.97	89.65
-7.95	7.36	17.25	7.94	-0.50	0.87	14.65	-6.79
-5.37	-0.33	12.87	-6.70	26.21	43.02	58.55	89.65
0.30	-6.32	35.71	-22.67	22.90	40.81	63.82	96.29
3.17	0.40	19.27	-10.40	25.06	41.95	63.40	90.98
6.97	10.81	11.99	10.20	4.22	8.94	3.31	2.97

g/L]							
7.81	15.63	31.25	62.5	125	250	500	1000
0.89	1.19	1.49	1.80	2.10	2.40	2.70	3.00
2.99	6.51	4.55	20.63	26.74	62.01	72.81	81.10



8.08	3.84	14.25	26.13	6.00	10.78	6.42	13.37
-15.95	3.17	0.40	19.27	25.06	41.95	63.40	90.98
17.26	6.97	10.81	11.99	4.22	8.94	3.31	2.97
-0.37	-0.20	-0.65	10.63	16.47	31.18	53.41	85.30
6.86	7.59	9.60	8.31	6.56	8.21	3.84	1.67

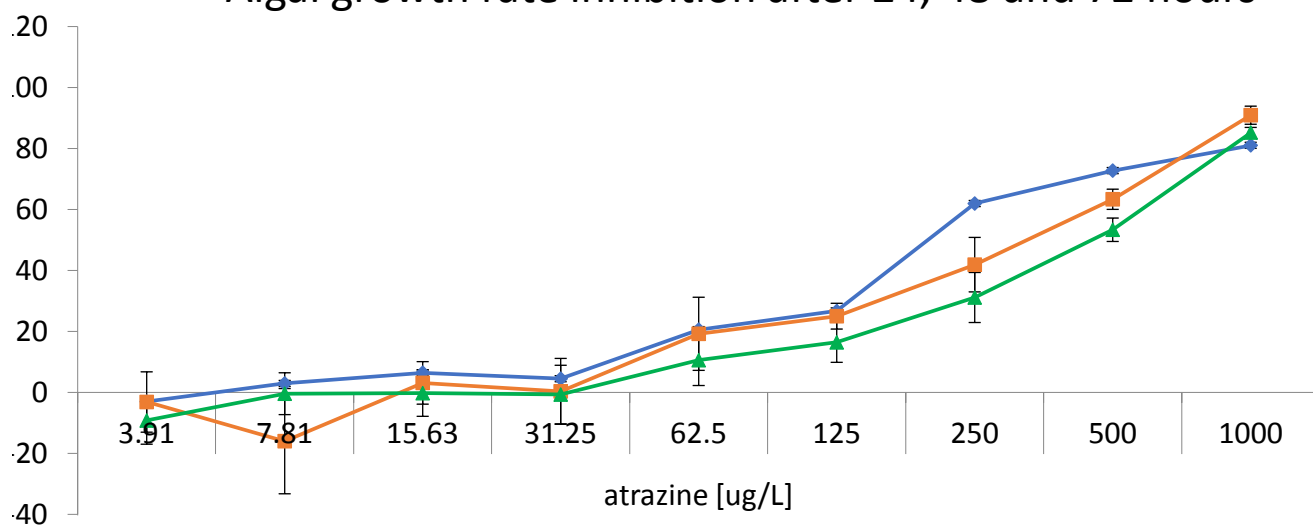


For GraphPad prism

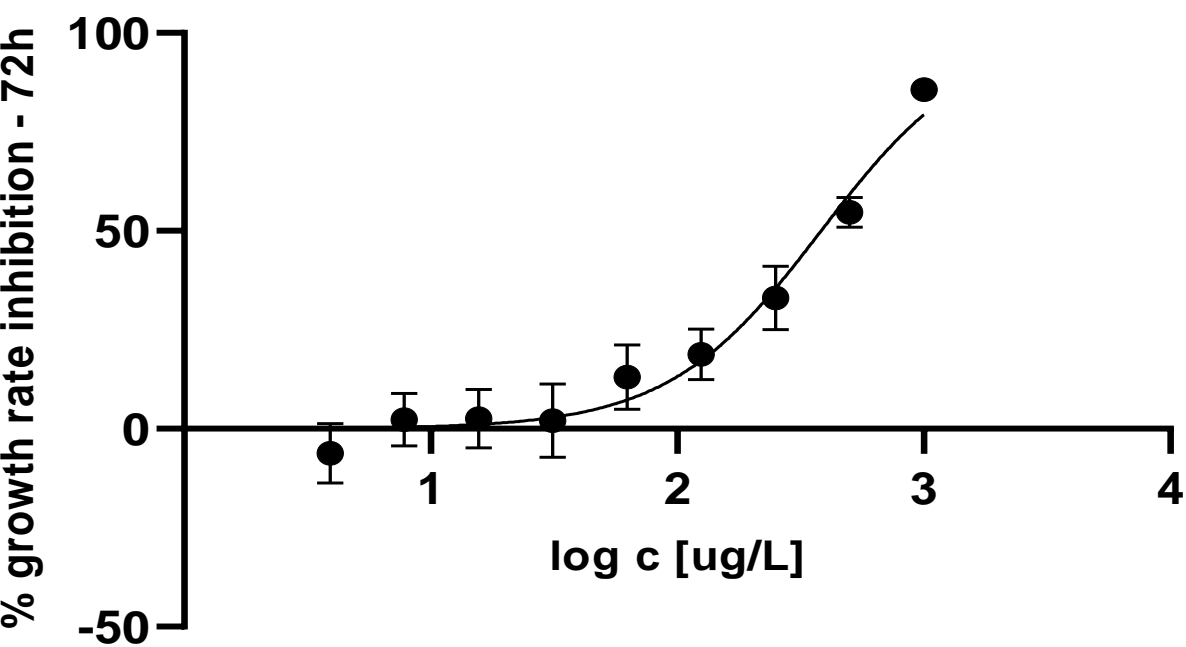
log c	1	2	3	4	5	SC	c	log c	1
0.59176003	-3.93	-8.11	-4.21	-6.86	-22.70		θ	#####	-9.74
0.89279003	-4.89	2.65	5.46	5.04	-10.13		125	2.097	13.56
1.19382003	-3.80	6.25	9.51	-5.28	-7.66		250	2.398	24.60
1.49485002	-10.69	1.89	13.97	-0.89	-7.55		500	2.699	59.00
1.79588002	-1.33	13.52	18.55	5.65	16.75		1000	3	84.55

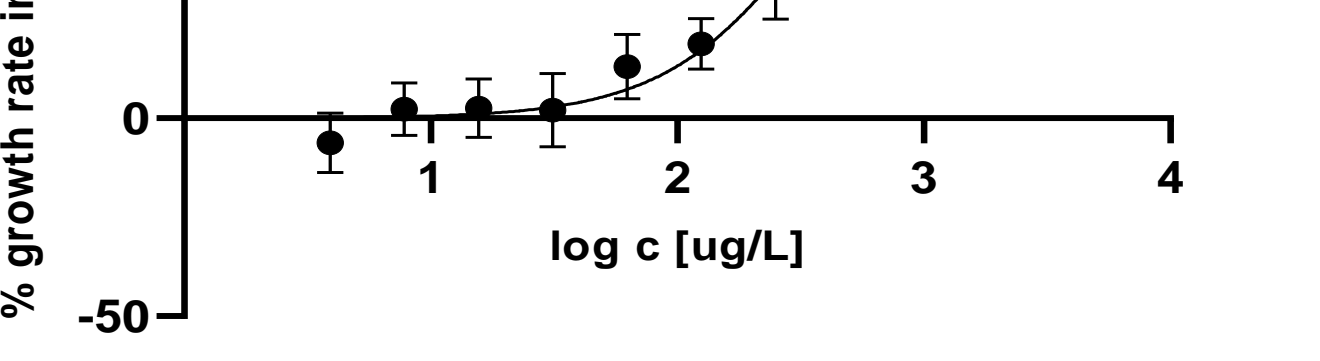
2h - Raphidocelis subcapitata

Algal growth rate inhibition after 24, 48 and 72 hours



Atrazine





2	3	4	5
1.10	11.77	1.82	-12.22
22.07	24.47	13.52	8.74
27.72	45.47	29.73	28.37
54.95	49.85	49.85	53.39
84.55	84.55	88.29	84.55

GraphPad Analysis	
log(agonist) vs. normalized response -- Variable slope	
Best-fit values	
LogEC50	2.583
HillSlope	1.403
EC50	383.1
95% CI (profile likelihood)	
LogEC50	2,531 to 2,636
HillSlope	1,183 to 1,676
EC50	339,8 to 432,4
Goodness of Fit	
Degrees of	43
R squared	0.9354
Sum of Sq	2465
Sy.x	7.571
Number of points	
# of X values	45
# Y values	45

—◆— 24h
—■— 48h
—▲— 72h