

ToxGenie Algae & Cyanobacteria, Growth Inhibition Test Analysis Report

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Test Type:	Definitive Test		
Study No.:	Test-1234	Test Material:	Test Material
Test Species:	Pseudokirchneriella subcapita	Exposure Time:	72 hours

Table 1. Biomass (cells/mL) of Pseudokirchneriella subcapita during the 72 hours exposure

(Unit: ug/L)

Dose	Replicate No.	0-hours	24-hours	48-hours	72-hours
Control	1	10000	30000	340000	1700000
Control	2	10000	40000	340000	1540000
Control	3	10000	40000	410000	1870000
Control	4	10000	80000	210000	1510000
Control	5	10000	30000	190000	1290000
Control	6	10000	60000	390000	1520000
	Mean	10000	46667	313333	1571667
	SD	0	19664	92232	196104
29.8	1	10000	80000	250000	1570000
29.8	2	10000	30000	230000	1490000
29.8	3	10000	40000	180000	1530000
	Mean	10000	50000	220000	1530000
	SD	0	26458	36056	40000
95.4	1	10000	40000	270000	1920000
95.4	2	10000	30000	320000	1960000
95.4	3	10000	40000	400000	1540000
	Mean	10000	36667	330000	1806667
	SD	0	5774	65574	231804
305	1	10000	60000	350000	2020000
305	2	10000	80000	360000	2200000
305	3	10000	50000	320000	2060000
	Mean	10000	63333	343333	2093333
	SD	0	15275	20817	94516
977	1	10000	20000	190000	1050000
977	2	10000	70000	320000	1630000
977	3	10000	60000	330000	1630000
	Mean	10000	50000	280000	1436667
	SD	0	26458	78102	334863
3125	1	10000	10000	70000	230000
3125	2	10000	10000	40000	220000
3125	3	10000	10000	50000	200000
	Mean	10000	10000	53333	216667
	SD	0	0	15275	15275
10000	1	10000	10000	10000	10000
10000	2	10000	10000	10000	10000
10000	3	10000	10000	10000	10000
	Mean	10000	10000	10000	10000
	SD	0	0	0	0

0-hour: Nominal initial biomass, SD: Standard Deviation

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Table 2. Increase of biomass in the control cultures within the 72 hours test period

Replicate No.	0-day	1-day	2-day	3-day	0-3 day
1	10000	30000	340000	1700000	170.0
2	10000	40000	340000	1540000	154.0
3	10000	40000	410000	1870000	187.0
4	10000	80000	210000	1510000	151.0
5	10000	30000	190000	1290000	129.0
6	10000	60000	390000	1520000	152.0
Mean					157.2

Validity Check: The biomass in control cultures increased by a factor of 157.2. This exceeds the OECD 201 validity criterion (factor ≥ 16), indicating that the test conditions allowed for sufficient unrestricted exponential growth.

Table 3. Mean CV(%) for section-by-section specific growth rate in the control cultures

Replicate No.	1-2 day	2-3 day	Mean	SD	CV(%)
1	2.4277	1.6094	2.0186	0.5786	28.6652
2	2.1401	1.5106	1.8253	0.4451	24.3849
3	2.3273	1.5175	1.9224	0.5726	29.7842
4	0.9651	1.9728	1.4689	0.7125	48.5074
5	1.8458	1.9154	1.8806	0.0492	2.6150
6	1.8718	1.3603	1.6161	0.3617	22.3799
Mean					26.0561

SD: Standard Deviation

Validity Check: The mean coefficient of variation (CV) for section-by-section specific growth rates was 26.06%. This is within the OECD 201 limit ($\leq 35\%$), demonstrating that stable exponential growth was maintained throughout the test duration.

Table 4. CV(%) of average specific growth rates in replicate control cultures during the whole test period

Replicate No.	0-3 day	0-1 day	1-2 day	2-3 day
1	1.7119	1.0986	2.4277	1.6094
2	1.6790	1.3863	2.1401	1.5106
3	1.7437	1.3863	2.3273	1.5175
4	1.6724	2.0794	0.9651	1.9728
5	1.6199	1.0986	1.8458	1.9154
6	1.6746	1.7918	1.8718	1.3603
Mean	1.6836	1.4735	1.9296	1.6477
SD	0.0417	0.3911	0.5275	0.2438
CV(%)	2.4769	26.5413	27.3365	14.7945

SD: Standard Deviation

Validity Check: The coefficient of variation (CV) for average specific growth rates in control replicates was 2.48%. This meets the OECD 201 criterion ($\leq 7\%$ for *Pseudokirchneriella subcapitata*), confirming acceptable experimental precision and reproducibility.

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Table 5. Average Growth Inhibitions (%) of Pseudokirchneriella subcapita

Dose	Replicate No.	Average Growth Rate	Inhibition (%)
Control	1	1.7119	0.0000
Control	2	1.6790	0.0000
Control	3	1.7437	0.0000
Control	4	1.6724	0.0000
Control	5	1.6199	0.0000
Control	6	1.6746	0.0000
	Mean	1.6836	0.0000
	SD	0.0417	0.0000
29.8	1	1.6854	-0.1077
29.8	2	1.6680	0.9278
29.8	3	1.6768	0.4033
	Mean	1.6767	0.4078
	SD	0.0087	0.5178
95.4	1	1.7525	-4.0922
95.4	2	1.7594	-4.5005
95.4	3	1.6790	0.2743
	Mean	1.7303	-2.7728
	SD	0.0446	2.6467
305	1	1.7694	-5.0975
305	2	1.7979	-6.7875
305	3	1.7760	-5.4857
	Mean	1.7811	-5.7902
	SD	0.0149	0.8852
977	1	1.5513	7.8571
977	2	1.6979	-0.8503
977	3	1.6979	-0.8503
	Mean	1.6490	2.0522
	SD	0.0846	5.0272
3125	1	1.0452	37.9209
3125	2	1.0303	38.8010
3125	3	0.9986	40.6880
	Mean	1.0247	39.1366
	SD	0.0238	1.4138
10000	1	0.0000	100.0000
10000	2	0.0000	100.0000
10000	3	0.0000	100.0000
	Mean	0.0000	100.0000
	SD	0.0000	0.0000

SD: Standard Deviation

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Table 6. Model Comparison result: Fitted Models to the Dose-Average Growth Inhibition (%)

Model Name	R2	MSE	Res. SD	AIC	Norm. P
Exponential	0.8936	124.82620	10.96542	231.96	0.000
Gompertz	0.7954	240.16480	15.47846	247.66	0.000
Logistic	0.4721	619.50751	24.86902	270.40	0.000
Log-Logistic	0.9930	8.20209	2.68950	166.61	0.005
Weibull	0.9931	8.11691	2.66056	166.36	0.006
Linear	0.9784	25.35182	5.03506	193.70	0.150
Logistic with Hormesis	0.4721	619.48687	24.86656	270.40	0.000

Best Model: Weibull (AIC = 166.36, R2 = 0.9931)

MSE: Mean Squared Error, Res. SD: Residual Standard Deviation, AIC: Akaike Information Criterion

Norm. P (Normality Test P-value): Shapiro-Wilk Test P-value (P > 0.05 indicates normal residuals)

Table 7. Point Estimates: Average Growth Inhibition (%)

(Unit: ug/L)

Level	Estimates	95% Lower Confidence Limit	95% Upper Confidence Limit
ErC10	1552.7983	1196.1766	1909.4201
ErC20	2087.6350	1814.6136	2360.6565
ErC25	2347.0918	2111.5525	2582.6310
ErC30	2611.8913	2402.9148	2820.8679
ErC40	3176.0753	2955.6592	3396.4913
ErC50	3813.2288	3494.6659	4131.7918
ErC60	4558.4667	4102.7223	5014.2112
ErC70	5458.0114	4864.3495	6051.6732
ErC75	5985.6144	5334.6616	6636.5672
ErC80	6579.7907	5887.4295	7272.1520
ErC90	8031.8415	7322.6861	8740.9970

Note: Weibull Model R2 = 0.9931 (>= 0.80). Estimates based on non-linear regression model.

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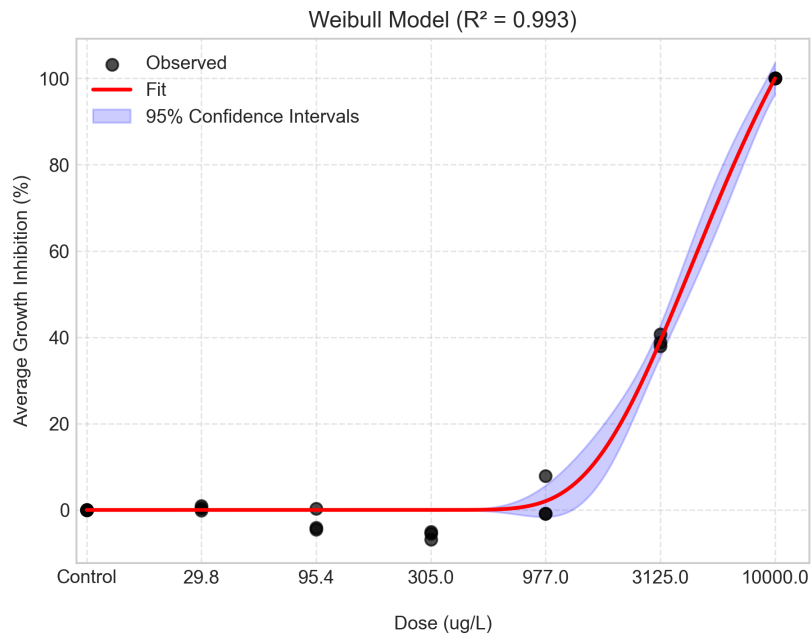


Figure 1. Dose-response curve for Average Growth Inhibition (%).

Table 8. Average Growth Inhibition (%): Quality Assurance (QA/QC) Summary

Parameter	Value / Status
Control Replicates (N)	6
Control CV (%)	0.00
Validity Flag	Pass

Methodology & Interpretation Guide

1. Statistical Parameters:

- Sample Size (N): 24 (Total number of observed data points).
- Degrees of Freedom (DoF): 21 (Calculated as $N - \text{Number of Model Parameters}$ [3]).
- Higher DoF generally increases the statistical power.

2. Best Model Selection Criteria:

- Best Model selected based on AIC (Akaike Information Criterion).
- Lowest AIC indicates best balance between goodness-of-fit and complexity.
- Secondary criterion: R-squared (R^2) ≥ 0.9 .
- Consequently, the selected model 'Weibull' was chosen as it showed the best statistical fit (lowest AIC: 166.36) and satisfied accuracy ($R^2 \geq 0.9$).

3. 95% Confidence Interval (CI) Calculation:

- Method used: Delta Method (Jacobian matrix).
- The 95% CI provides a range likely to contain the true parameter value.

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Table 9. Yield Inhibitions (%) of Pseudokirchneriella subcapita

Dose	Replicate No.	Yield	Inhibition (%)
Control	1	1690000	0.0000
Control	2	1530000	0.0000
Control	3	1860000	0.0000
Control	4	1500000	0.0000
Control	5	1280000	0.0000
Control	6	1510000	0.0000
	Mean	1561667	0.0000
	SD	196104	0.0000
29.8	1	1560000	0.1067
29.8	2	1480000	5.2295
29.8	3	1520000	2.6681
	Mean	1520000	2.6681
	SD	40000	2.5614
95.4	1	1910000	-22.3052
95.4	2	1950000	-24.8666
95.4	3	1530000	2.0277
	Mean	1796667	-15.0480
	SD	231805	14.8434
305	1	2010000	-28.7086
305	2	2190000	-40.2348
305	3	2050000	-31.2700
	Mean	2083333	-33.4045
	SD	94516	6.0523
977	1	1040000	33.4045
977	2	1620000	-3.7353
977	3	1620000	-3.7353
	Mean	1426667	8.6446
	SD	334863	21.4427
3125	1	220000	85.9125
3125	2	210000	86.5528
3125	3	190000	87.8335
	Mean	206667	86.7663
	SD	15275	0.9781
10000	1	0	100.0000
10000	2	0	100.0000
10000	3	0	100.0000
	Mean	0	100.0000
	SD	0	0.0000

SD: Standard Deviation

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Table 10. Model Comparison result: Fitted Models to the Dose-Yield Inhibition (%)

Model Name	R2	MSE	Res. SD	AIC	Norm. P
Exponential	0.5370	962.77942	30.76645	280.98	0.000
Gompertz	0.0514	1972.81265	42.92184	298.20	0.001
Logistic	0.5969	838.36347	28.38327	277.66	0.048
Log-Logistic	0.8894	230.02320	14.08454	246.63	0.001
Weibull	0.7586	501.99956	20.95064	265.36	0.003
Linear	0.7066	610.10191	24.70024	270.04	0.014
Logistic with Hormesis	0.5973	837.48132	28.30115	277.64	0.050

Best Model: Log-Logistic (AIC = 246.63, R2 = 0.8894)

MSE: Mean Squared Error, Res. SD: Residual Standard Deviation, AIC: Akaike Information Criterion

Norm. P (Normality Test P-value): Shapiro-Wilk Test P-value (P > 0.05 indicates normal residuals)

Table 11. Point Estimates: Yield Inhibition (%)

(Unit: ug/L)

Level	Estimates	95% Lower Confidence Limit	95% Upper Confidence Limit
EyC10	1053.8346	338.6161	1769.0530
EyC20	1305.7909	573.7585	2037.8233
EyC25	1408.9472	668.7017	2149.1927
EyC30	1505.6940	755.5063	2255.8817
EyC40	1692.1109	914.0791	2470.1427
EyC50	1883.3217	1062.3595	2704.2839
EyC60	2095.9726	1209.5803	2982.3650
EyC70	2354.8009	1366.6715	3342.9302
EyC75	2515.8095	1454.0244	3577.5947
EyC80	2713.3705	1550.4840	3876.2570
EyC90	3354.3570	1698.0180	5010.6960

Note: Log-Logistic Model R2 = 0.8894 (>= 0.80). Estimates based on non-linear regression model. Unit: ug/L

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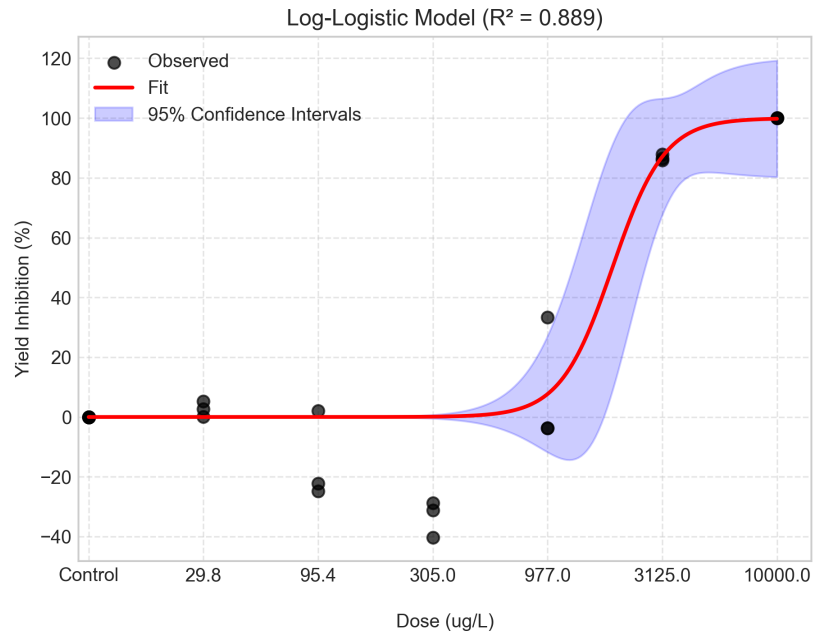


Figure 2. Dose-response curve for Yield (%).

Table 12. Yield Inhibition (%): Quality Assurance (QA/QC) Summary

Parameter	Value / Status
Control Replicates (N)	6
Control CV (%)	0.00
Validity Flag	Pass

Methodology & Interpretation Guide

1. Statistical Parameters:

- Sample Size (N): 24 (Total number of observed data points).
- Degrees of Freedom (DoF): 21 (Calculated as $N - \text{Number of Model Parameters}$ [3]).
- Higher DoF generally increases the statistical power.

2. Best Model Selection Criteria:

- Best Model selected based on AIC (Akaike Information Criterion).
- Lowest AIC indicates best balance between goodness-of-fit and complexity.
- Secondary criterion: R-squared (R^2) ≥ 0.9 .
- Although 'Log-Logistic' was the best fit, it failed accuracy ($R^2 < 0.9$). Therefore, **Linear Interpolation** was used.

3. 95% Confidence Interval (CI) Calculation:

- Method used: Bootstrap Method (1000 iterations).
- The 95% CI provides a range likely to contain the true parameter value.

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Table 13. Data Summary for Average Growth Rate

(Unit: ug/L)

Dose	1	2	3	4	5	6	Mean	SD
Control	1.7119	1.6790	1.7437	1.6724	1.6199	1.6746	1.6836	0.0381
29.8	1.6854	1.6680	1.6768	nan	nan	nan	1.6767	0.0071
95.4	1.7525	1.7594	1.6790	nan	nan	nan	1.7303	0.0364
305	1.7694	1.7979	1.7760	nan	nan	nan	1.7811	0.0122
977	1.5513	1.6979	1.6979	nan	nan	nan	1.6491	0.0691
3125	1.0452	1.0304	0.9986	nan	nan	nan	1.0247	0.0194
10000	0.0000	0.0000	0.0000	nan	nan	nan	0.0000	0.0000

SD: Standard Deviation

(nan: not-a-number)

Table 14. Shapiro-Wilk's test for normality on the Average Growth Rate

Dose	Statistic	P-value	Result
Control	0.95349	0.76841	Normal Distribution
29.8	0.99995	0.98609	Normal Distribution
95.4	0.81359	0.14736	Normal Distribution
305	0.91129	0.42239	Normal Distribution
977	0.75000	0.00000	Reject Normal Distribution
3125	0.95768	0.60428	Normal Distribution
10000	nan	nan	All values are identical (Variance=0)

$P > 0.05$ indicates Normal Distribution.

Final decision: The Average Growth Rate does not follow a normal distribution.

Table 15. Levene's test for homogeneity on the Average Growth Rate

Statistic	P-value	Result
0.64955	0.69020	Equal Variances

$P > 0.05$ indicates Equal Variances.

Final decision: The Average Growth Rate shows equal variances.

Table 16. Transformed Data Summary for Average Growth Rate (Sqrt transformation)

Dose	1	2	3	4	5	6	Mean	SD
Control	1.6468	1.6368	1.6564	1.6347	1.6186	1.6354	1.5304	0.2284
29.8	1.6387	1.6334	1.6361	nan	nan	nan	2.2916	1.8421
95.4	1.6591	1.6611	1.6368	nan	nan	nan	3.1551	3.7356
305	1.6642	1.6727	1.6661	nan	nan	nan	4.6992	7.1577
977	1.5973	1.6425	1.6425	nan	nan	nan	7.4311	13.3308
3125	1.4301	1.4249	1.4137	nan	nan	nan	12.2359	24.4156
10000	1.0000	1.0000	1.0000	nan	nan	nan	20.8010	44.2764

SD: Standard Deviation

Table 17. Shapiro-Wilk's test for normality on the transformed Average Growth Rate

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Dose	Statistic	P-value	Result
Control	0.95339	0.76763	Normal Distribution
29.8	0.99995	0.98643	Normal Distribution
95.4	0.81343	0.14698	Normal Distribution
305	0.91263	0.42690	Normal Distribution
977	0.75000	0.00000	Reject Normal Distribution
3125	0.95697	0.60091	Normal Distribution
10000	nan	nan	All values are identical (Variance=0)

P>0.05 indicates Normal Distribution.

Final decision: The transformation data does not follow a normal distribution.

Table 18. Levene's test for homogeneity on the transformed Average Growth Rate

Statistic	P-value	Result
0.64308	0.69493	Equal Variances

P>0.05 indicates Equal Variances.

Final decision: The data shows equal variances.

Statistical Analysis Procedure & Decision Tree

The statistical analysis for 'Average Growth Rate' was conducted based on the following decision steps:

1. Assumption Verification (Normality & Homogeneity):

- Since the raw data did not meet the assumption(s) of Normality, data transformation was attempted to stabilize variance and normalize the distribution.

2. Data Transformation Strategy:

- A Sqrt transformation was selected and applied.
- Square-root transformation is effective for stabilizing variance in count data or data following a Poisson distribution. It was chosen because it yielded the highest combined score for Normality and Homogeneity among all candidates.
- Although Sqrt transformation was the best available option, the transformed data still failed to fully meet the statistical assumptions.
- Therefore, Non-Parametric tests were applied to the original (untransformed) data. Note: Monotonic transformations (Log, Sqrt, etc.) do not change the rank order of data, so non-parametric rank-based tests yield identical results on both original and transformed data. (Hollander & Wolfe, 1999; OECD No. 54, 2006)

3. Final Selected Test Method:

- Because although data transformation was attempted, the transformed data still did not meet the normality or homogeneity assumptions. Non-parametric tests were therefore applied to the original data, as monotonic transformations do not alter rank order (Hollander & Wolfe, 1999), the Wilcoxon Rank Sum Test (Non-Parametric) was selected as the post-hoc test.
- Prior to this post-hoc analysis, an Omnibus Test (Kruskal-Wallis Test) was performed to confirm if any statistically significant differences exist among the dose groups ($p < 0.05$).
- The selected method is appropriate for comparing multiple treatment groups against a single control group to determine the NOEC/LOEC (No Observed Effect Concentration/Lowest Observed Effect Concentration) or NOAEL/LOAEL (No Observed Adverse Effect Level/Lowest Observed Adverse Effect Level).

Table 19. Kruskal-Wallis Test on the Average Growth Rate

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H-statistic	P-value	Result
18.7046	0.0047	Significant differences among doses

P<0.05 indicates a statistically significant difference among groups.

Table 20. Post Hoc Analytical Method: Wilcoxon Rank Sum Test on the Average Growth Rate data.

Control	Dose	Statistic	P-value	Result
Control	29.8	0.25820	0.79625	No significant difference from control
Control	95.4	-1.67829	0.09329	No significant difference from control
Control	305	-2.32379	0.02014	Significant difference from control
Control	977	0.25820	0.79625	No significant difference from control
Control	3125	2.32379	0.02014	Significant difference from control
Control	10000	2.32379	0.02014	Significant difference from control

P<0.05 indicates a statistically significant difference from the control.

Table 21. Average Growth Rate: NOEC and LOEC

(Unit: ug/L)

NOEC	977
LOEC	3125

* NOEC: No Observed Effect Concentration

* LOEC: Lowest Observed Effect Concentration

Note: NOEC/LOEC are typically used for Effects on Biotic Systems where exposure is expressed as concentration (e.g., mg/L).

Note: In accordance with OECD TG 201, a statistically significant increase in growth at low concentrations (hormesis) is not considered an adverse effect and is therefore excluded from the LOEC determination.

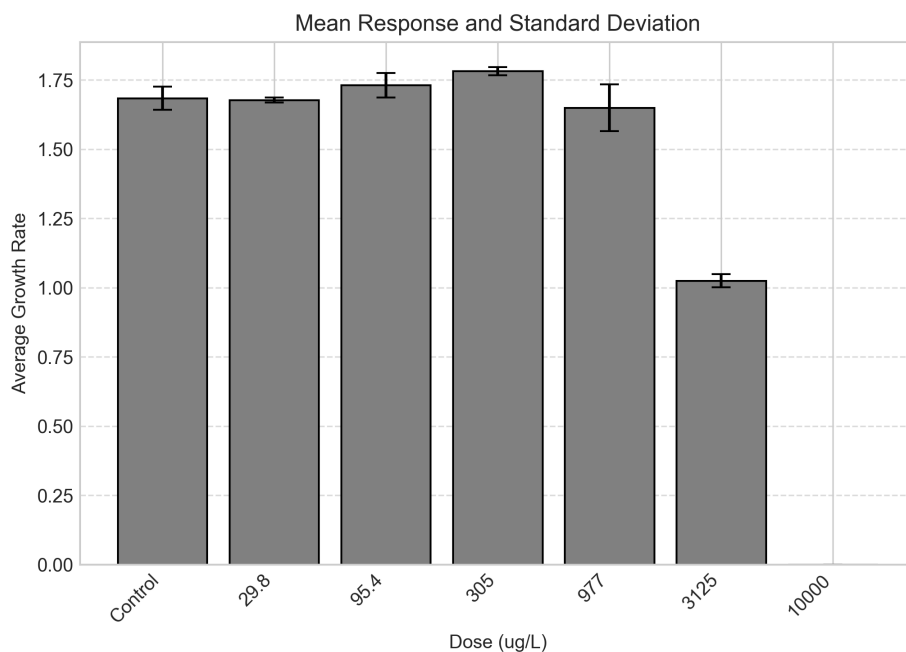


Figure 3. Dose-response plot for Average Growth Rate. Bars represent the mean and Standard Deviation (SD).

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Table 22. Data Summary for Yield

(Unit: ug/L)

Dose	1	2	3	4	5	6	Mean	SD
Control	1690000	1530000	1860000	1500000	1280000	1510000	1561667	179017
29.8	1560000	1480000	1520000	nan	nan	nan	1520000	32660
95.4	1910000	1950000	1530000	nan	nan	nan	1796667	189268
305	2010000	2190000	2050000	nan	nan	nan	2083333	77172
977	1040000	1620000	1620000	nan	nan	nan	1426667	273415
3125	220000	210000	190000	nan	nan	nan	206667	12472
10000	0	0	0	nan	nan	nan	0	0

SD: Standard Deviation

(nan: not-a-number)

Table 23. Shapiro-Wilk's test for normality on the Yield

Dose	Statistic	P-value	Result
Control	0.95278	0.76275	Normal Distribution
29.8	1.00000	1.00000	Normal Distribution
95.4	0.82072	0.16499	Normal Distribution
305	0.90672	0.40721	Normal Distribution
977	0.75000	0.00000	Reject Normal Distribution
3125	0.96429	0.63689	Normal Distribution
10000	nan	nan	All values are identical (Variance=0)

$P > 0.05$ indicates Normal Distribution.

Final decision: The Yield does not follow a normal distribution.

Table 24. Levene's test for homogeneity on the Yield

Statistic	P-value	Result
0.72487	0.63567	Equal Variances

$P > 0.05$ indicates Equal Variances.

Final decision: The Yield shows equal variances.

Table 25. Transformed Data Summary for Yield (Sqrt transformation)

Dose	1	2	3	4	5	6	Mean	SD
Control	1300.0004	1236.9321	1363.8185	1224.7453	1131.3713	1228.8210	936.0128	580.7690
29.8	1249.0000	1216.5529	1232.8832	nan	nan	nan	740.9972	673.5449
95.4	1382.0279	1396.4244	1236.9321	nan	nan	nan	805.2405	732.8095
305	1417.7450	1479.8652	1431.7825	nan	nan	nan	869.5771	785.7303
977	1019.8044	1272.7926	1272.7926	nan	nan	nan	719.5325	650.4511
3125	469.0426	458.2587	435.8910	nan	nan	nan	284.0206	234.4096
10000	1.0000	1.0000	1.0000	nan	nan	nan	20.8010	44.2764

SD: Standard Deviation

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Table 26. Shapiro-Wilk's test for normality on the transformed Yield

Dose	Statistic	P-value	Result
Control	0.95423	0.77433	Normal Distribution
29.8	0.99999	0.99274	Normal Distribution
95.4	0.81710	0.15601	Normal Distribution
305	0.90899	0.41472	Normal Distribution
977	0.75000	0.00000	Reject Normal Distribution
3125	0.96089	0.61982	Normal Distribution
10000	nan	nan	All values are identical (Variance=0)

P>0.05 indicates Normal Distribution.

Final decision: The data does not follow a normal distribution.

Table 27. Levene's test for homogeneity on the transformed Yield

Statistic	P-value	Result
0.69960	0.65379	Equal Variances

P>0.05 indicates Equal Variances.

Final decision: The data shows equal variances.

Statistical Analysis Procedure & Decision Tree

The statistical analysis for 'Yield' was conducted based on the following decision steps:

1. Assumption Verification (Normality & Homogeneity):

- *Since the raw data did not meet the assumption(s) of Normality, data transformation was attempted to stabilize variance and normalize the distribution.*

2. Data Transformation Strategy:

- *A Sqrt transformation was selected and applied.*
- *Square-root transformation is effective for stabilizing variance in count data or data following a Poisson distribution. It was chosen because it yielded the highest combined score for Normality and Homogeneity among all candidates.*
- *Although Sqrt transformation was the best available option, the transformed data still failed to fully meet the statistical assumptions.*
- *Therefore, Non-Parametric tests were applied to the original (untransformed) data. Note: Monotonic transformations (Log, Sqrt, etc.) do not change the rank order of data, so non-parametric rank-based tests yield identical results on both original and transformed data. (Hollander & Wolfe, 1999; OECD No. 54, 2006)*

3. Final Selected Test Method:

- *Because although data transformation was attempted, the transformed data still did not meet the normality or homogeneity assumptions. Non-parametric tests were therefore applied to the original data, as monotonic transformations do not alter rank order (Hollander & Wolfe, 1999), the Wilcoxon Rank Sum Test (Non-Parametric) was selected as the post-hoc test.*
- *Prior to this post-hoc analysis, an Omnibus Test (Kruskal-Wallis Test) was performed to confirm if any statistically significant differences exist among the dose groups ($p < 0.05$).*
- *The selected method is appropriate for comparing multiple treatment groups against a single control group to determine the NOEC/LOEC (No Observed Effect Concentration/Lowest Observed Effect Concentration) or NOAEL/LOAEL (No Observed Adverse Effect Level/Lowest Observed Adverse Effect Level).*

Table 28. Kruskal-Wallis Test on the Yield

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H-statistic	P-value	Result
18.7046	0.0047	Significant differences among doses

P<0.05 indicates a statistically significant difference among groups.

Table 29. Post Hoc Analytical Method: Wilcoxon Rank Sum Test on the Yield data.

Control	Dose	Statistic	P-value	Result
Control	29.8	0.25820	0.79625	No significant difference from control
Control	95.4	-1.67829	0.09329	No significant difference from control
Control	305	-2.32379	0.02014	Significant difference from control
Control	977	0.25820	0.79625	No significant difference from control
Control	3125	2.32379	0.02014	Significant difference from control
Control	10000	2.32379	0.02014	Significant difference from control

P<0.05 indicates a statistically significant difference from the control.

Table 30. Yield: NOEC and LOEC

(Unit: ug/L)

NOEC	977
LOEC	3125

* NOEC: No Observed Effect Concentration

* LOEC: Lowest Observed Effect Concentration

Note: NOEC/LOEC are typically used for Effects on Biotic Systems where exposure is expressed as concentration (e.g., mg/L).

Note: In accordance with OECD TG 201, a statistically significant increase in growth at low concentrations (hormesis) is not considered an adverse effect and is therefore excluded from the LOEC determination.

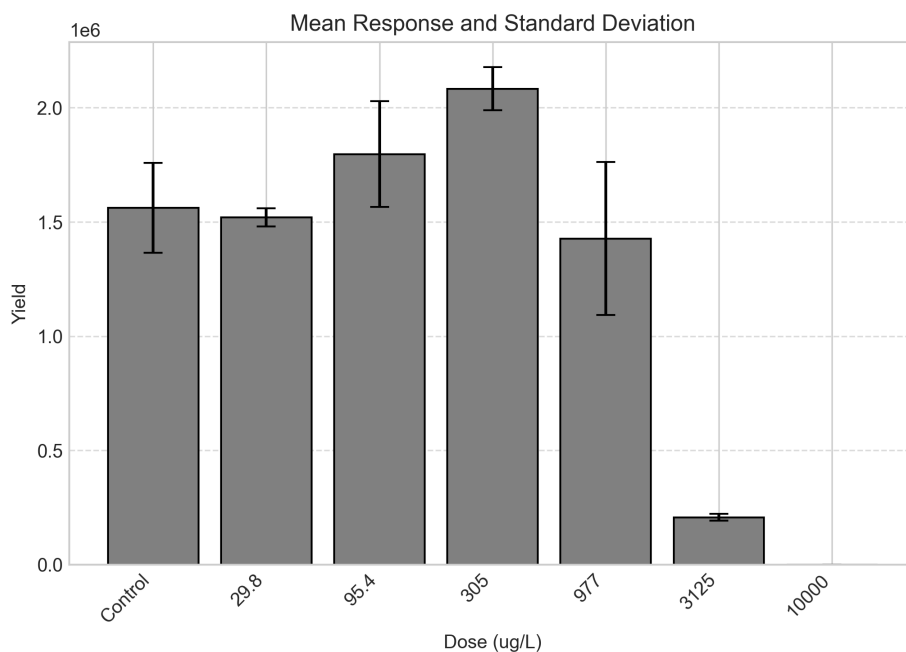


Figure 4. Dose-response plot for Yield. Bars represent the mean and Standard Deviation (SD).

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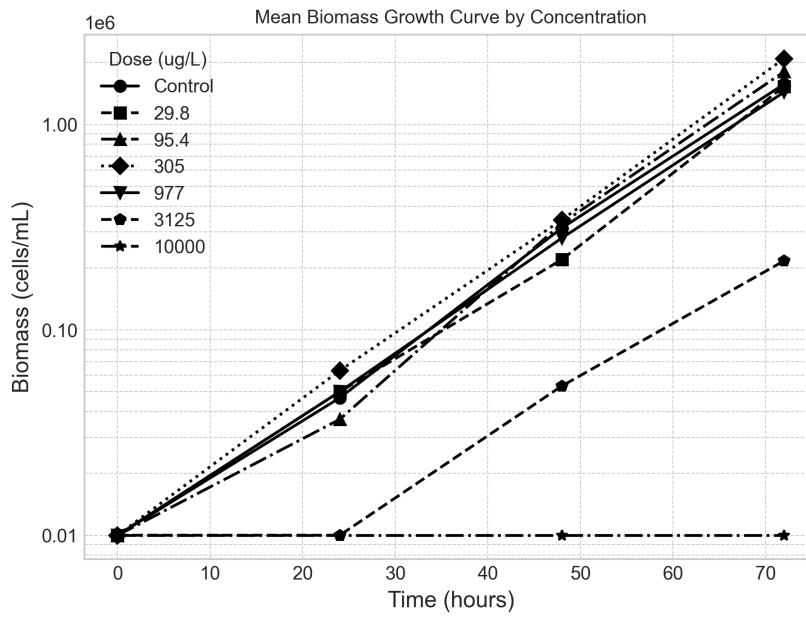


Figure 5. Mean biomass growth curve of *Pseudokirchneriella subcapita* exposed to different concentrations of the test material over time.

Analyst: ToxGenie