

APPENDICES

Cell count (mean±S.D x 10 ⁵ ml ⁻¹) of <i>Chlorella vulgaris</i> UMACC 001 grown at different NaNO ₃ levels										
NaNO ₃ Level (mM)	Time (Hours) : cell count (x 10 ⁵ ml ⁻¹)									
	0	12	24	48	60	72	84	96		
0	2.25±0	4.98±0.36	5.08±0.07	5.31±0.55	5.62±0.17	5.83±0.53	5.94±0.94	6.08±0.85		
0.03	2.25±0	5.03±0.38	5.11±0.27	5.37±0.13	5.68±0.69	5.95±2.01	6.35±0.66	6.35±0.88		
0.15	2.25±0	5.02±0.22	5.19±0.51	5.63±0.22	5.87±0.44	6.27±1.10	7.17±0.03	8.14±0.12		
0.75	2.25±0	5.02±0.18	5.51±0.55	5.91±0.29	6.06±1.14	6.75±1.08	7.64±0.66	8.87±0.85		
3.75	2.25±0	5.05±0.14	5.76±0.21	6.71±0.48	6.99±1.61	7.07±1.08	9.41±0.76	10.9±0.80		
18.75	2.25±0	5.95±0.18	6.80±0.41	8.29±0.41	8.77±0.71	9.68±0.03	11.5±0.34	12.9±0.56		

Appendix 2

OD₆₂₀ of *Chlorella vulgaris* UMACC 001 grown at different NaNO₃ levels

NaNO ₃ Level (mM)	Time (Hours) : absorbance (OD ₆₂₀)									
	0	12	24	48	60	72	84	96		
0	0.028±0	0.03±0.002	0.04±0.003	0.05±0.002	0.06±0.003	0.07±0.003	0.07±0.002	0.08±0.004		
0.03	0.028±0	0.03±0.003	0.04±0.002	0.05±0.003	0.10±0.003	0.11±0.003	0.11±0.003	0.11±0.001		
0.15	0.028±0	0.03±0.003	0.04±0.001	0.05±0.003	0.10±0.003	0.10±0.002	0.11±0.004	0.11±0.020		
0.75	0.028±0	0.03±0.004	0.04±0.002	0.05±0.002	0.10±0.003	0.10±0.002	0.11±0.005	0.18±0.020		
3.75	0.028±0	0.03±0.003	0.04±0.003	0.05±0.003	0.10±0.003	0.11±0.005	0.16±0.042	0.20±0.009		
18.75	0.028±0	0.03±0.002	0.04±0.003	0.05±0.002	0.10±0.006	0.11±0.007	0.16±0.04	0.20±0.009		

Cell count (mean $\pm$ S.D x 10⁵ ml⁻¹) of *Scenedesmus quadricauda* UMACC 041 grown at different NaNO₃ levelsTime (Hours) : cell count (x 10⁵ ml⁻¹)

NaNO ₃ Level (mM)	Time (Hours) : cell count (x 10 ⁵ ml ⁻¹)							
	0	12	24	48	60	72	84	96
0	2.58 $\pm$ 0	2.29 $\pm$ 0.03	3.08 $\pm$ 0.07	3.98 $\pm$ 0.07	4.91 $\pm$ 0.48	5.14 $\pm$ 0.45	5.52 $\pm$ 0.45	5.58 $\pm$ 0.51
0.03	2.58 $\pm$ 0	1.93 $\pm$ 0.09	3.07 $\pm$ 0.05	4.71 $\pm$ 0.26	5.46 $\pm$ 0.12	7.00 $\pm$ 0.03	7.52 $\pm$ 0.15	8.66 $\pm$ 0.04
0.15	2.58 $\pm$ 0	1.98 $\pm$ 0.26	3.13 $\pm$ 0.08	4.51 $\pm$ 0.50	5.38 $\pm$ 0.06	6.78 $\pm$ 0.20	8.12 $\pm$ 0.12	8.44 $\pm$ 0.10
0.75	2.58 $\pm$ 0	1.68 $\pm$ 0.07	3.16 $\pm$ 0.08	4.95 $\pm$ 0.09	5.33 $\pm$ 0.17	6.27 $\pm$ 0.26	8.70 $\pm$ 0.35	9.43 $\pm$ 0.13
3.75	2.58 $\pm$ 0	1.86 $\pm$ 0.09	3.23 $\pm$ 0.05	5.13 $\pm$ 0.05	5.62 $\pm$ 0.11	7.21 $\pm$ 0.04	8.91 $\pm$ 0.66	10.0 $\pm$ 0.09
18.75	2.58 $\pm$ 0	1.88 $\pm$ 0.33	3.17 $\pm$ 0.08	4.25 $\pm$ 0.13	5.37 $\pm$ 0.06	6.67 $\pm$ 0.22	8.13 $\pm$ 0.18	9.17 $\pm$ 0.18

Appendix 4

OD₆₂₀ of *Scenedesmus quadricauda* UMACC 041 grown at different NaNO₃ levelsTime (Hours) : absorbance (OD₆₂₀)

NaNO ₃ Level (mM)	Time (Hours) : absorbance (OD ₆₂₀)							
	0	12	24	48	60	72	84	96
0	0.03 $\pm$ 0	0.05 $\pm$ 0.002	0.07 $\pm$ 0.004	0.08 $\pm$ 0.006	0.10 $\pm$ 0.006	0.11 $\pm$ 0.008	0.12 $\pm$ 0.008	0.12 $\pm$ 0.008
0.03	0.03 $\pm$ 0	0.04 $\pm$ 0.001	0.07 $\pm$ 0.003	0.09 $\pm$ 0.004	0.15 $\pm$ 0.009	0.21 $\pm$ 0.006	0.26 $\pm$ 0.011	0.32 $\pm$ 0.020
0.15	0.03 $\pm$ 0	0.04 $\pm$ 0.002	0.07 $\pm$ 0.004	0.09 $\pm$ 0.005	0.16 $\pm$ 0.009	0.20 $\pm$ 0.010	0.29 $\pm$ 0.010	0.38 $\pm$ 0.020
0.75	0.03 $\pm$ 0	0.04 $\pm$ 0.004	0.07 $\pm$ 0.006	0.09 $\pm$ 0.009	0.15 $\pm$ 0.010	0.19 $\pm$ 0.020	0.28 $\pm$ 0.030	0.37 $\pm$ 0.050
3.75	0.03 $\pm$ 0	0.04 $\pm$ 0.003	0.07 $\pm$ 0.009	0.10 $\pm$ 0.010	0.16 $\pm$ 0.020	0.20 $\pm$ 0.020	0.30 $\pm$ 0.030	0.40 $\pm$ 0.050
18.75	0.03 $\pm$ 0	0.04 $\pm$ 0.004	0.07 $\pm$ 0.002	0.08 $\pm$ 0.007	0.15 $\pm$ 0.010	0.20 $\pm$ 0.010	0.27 $\pm$ 0.020	0.35 $\pm$ 0.020

Appendix 5

Cell count (mean±S.D x 10 ⁵ ml ⁻¹) of <i>Ankistrodesmus convolutus</i> UMACC 101 grown at different NaNO ₃ levels o Time (Hours) : cell count (x 10 ⁵ ml ⁻¹)									
NaNO ₃ Level (mM)	0	12	24	48	60	72	84	96	
0	1.99±0	1.92±0.36	3.73±0.07	4.42±0.55	6.01±0.17	5.85±0.53	5.80±0.94	6.68±0.85	
0.03	1.99±0	1.76±0.38	3.72±0.27	4.16±0.13	6.06±0.69	8.08±2.01	9.06±0.66	8.82±0.88	
0.15	1.99±0	1.95±0.22	2.87±0.51	53.58±0.22	6.71±0.44	8.68±1.10	11.5±0.03	11.9±0.12	
0.75	1.99±0	2.13±0.18	3.46±0.55	3.96±0.29	6.83±1.14	9.01±1.08	11.6±0.66	12.0±0.85	
3.75	1.99±0	1.84±0.14	3.61±0.21	4.16±0.48	7.36±1.61	9.82±1.08	11.4±0.78	11.6±0.80	
18.75	1.99±0	2.37±0.18	3.78±0.07	4.22±0.55	9.57±0.17	10.1±0.53	12.3±0.94	13.0±0.85	

Appendix 6

OD ₆₂₀ of <i>Ankistrodesmus convolutus</i> UMACC 101 grown at different NaNO ₃ levels Time (Hours) : absorbance (OD ₆₂₀)									
NaNO ₃ Level (mM)	0	12	24	48	60	72	84	96	
0	0.03±0	0.03±0.002	0.05±0.003	0.06±0.002	0.07±0.004	0.07±0.003	0.08±0.003	0.08±0.005	
0.03	0.03±0	0.03±0.005	0.05±0.003	0.07±0.007	0.09±0.004	0.10±0.009	0.13±0.020	0.13±0.880	
0.15	0.03±0	0.03±0.001	0.05±0.002	0.07±0.003	0.10±0.002	0.13±0.002	0.19±0.002	0.21±0.004	
0.75	0.03±0	0.03±0.002	0.05±0.003	0.07±0.003	0.10±0.004	0.14±0.007	0.19±0.004	0.23±0.010	
3.75	0.03±0	0.03±0.002	0.05±0.002	0.07±0.005	0.11±0.002	0.14±0.006	0.20±0.007	0.23±0.004	
18.75	0.03±0	0.03±0.002	0.05±0.002	0.07±0.002	0.10±0.007	0.13±0.007	0.20±0.007	0.22±0.007	

Appendix 7										
Cell count (mean±S.D x 10 ⁵ ml ⁻¹) of <i>Chlorella vulgaris</i> UMACC 001 grown at different NH ₄ Cl levels										
NH ₄ Cl Level (mM)	Time (Hours) : cell count (x 10 ⁵ ml ⁻¹)									
	0	12	24	48	60	72	84	96		
0	1.85±0	5.43±0.06	5.63±0.06	5.82±0.07	6.09±0.06	6.26±0.06	6.45±0.05	6.60±0.06		
0.03	1.85±0	4.27±0.35	4.50±0.34	5.75±0.49	6.48±0.48	6.98±0.42	7.60±0.31	7.90±0.18		
0.15	1.85±0	4.65±0.17	4.88±0.14	5.98±0.04	6.95±0.04	7.52±0.14	8.86±0.04	9.76±0.04		
0.75	1.85±0	5.14±0.08	5.24±0.08	6.11±0.17	7.01±0.03	8.03±0.07	9.05±0.18	9.93±0.03		
3.75	1.85±0	5.13±0.11	5.3±0.12	6.53±0.12	7.35±0.35	8.35±0.26	9.44±0.15	11.0±0.04		
18.75	1.85±0	4.93±0.12	5.53±0.16	6.33±0.15	8.42±0.08	9.22±0.09	10.3±0.28	11.2±0.39		

Appendix 8										
OD ₆₂₀ of <i>Chlorella vulgaris</i> UMACC 001 grown at different NH ₄ Cl levels										
NH ₄ Cl Level (mM)	Time (Hours) : absorbance (OD ₆₂₀)									
	0	12	24	48	60	72	84	96		
0	0.028±0	0.05±0.003	0.05±0.002	0.06±0.002	0.07±0.00	0.08±0.002	0.09±0.002	0.09±0.001		
0.03	0.028±0	0.04±0.003	0.05±0.003	0.06±0.006	0.09±0.002	0.09±0.002	0.11±0.004	0.12±0.002		
0.15	0.028±0	0.05±0.003	0.05±0.002	0.06±0.002	0.09±0.002	0.09±0.002	0.17±0.008	0.18±0.004		
0.75	0.028±0	0.05±0.002	0.06±0.002	0.07±0.002	0.10±0.003	0.10±0.004	0.17±0.008	0.19±0.003		
3.75	0.028±0	0.05±0.001	0.06±0.002	0.07±0.001	0.10±0.003	0.11±0.004	0.18±0.005	0.19±0.007		
18.75	0.028±0	0.05±0.001	0.06±0.002	0.07±0.003	0.10±0.002	0.11±0.003	0.19±0.006	0.21±0.001		

Cell count (mean±S.D x 10 ⁵ ml ⁻¹) of <i>Scenedesmus quadricauda</i> UMACC 041 grown at different NH ₄ Cl levels										
NH ₄ Cl Level (mM)	Time (Hours) : cell count (x 10 ⁵ ml ⁻¹)									
	0	12	24	48	60	72	84	96		
0	2.28±0	1.66±0.16	5.41±0.03	5.63±0.19	5.70±0.16	5.73±0.17	5.98±0.25	5.98±0.20		
0.03	2.28±0	2.08±0.47	3.37±0.50	5.18±0.14	5.50±0.13	5.98±0.11	6.04±0.30	6.31±0.21		
0.15	2.28±0	1.94±0.09	3.72±0.14	5.58±0.28	5.85±0.11	6.13±0.31	6.78±0.64	6.88±0.66		
0.75	2.28±0	2.57±0.46	3.81±0.24	6.10±0.80	6.68±0.54	6.96±0.53	7.10±0.14	7.85±0.04		
3.75	2.28±0	2.69±0.31	3.91±0.21	6.26±0.19	6.58±0.29	6.88±0.21	8.58±0.36	9.56±0.30		
18.75	2.28±0	2.62±0.71	5.83±0.72	7.18±0.36	7.75±0.40	8.12±0.27	9.53±0.45	10.3±0.31		

Appendix 10

OD₆₂₀ of *Scenedesmus quadricauda* UMACC 041 grown at different NH₄Cl levels

NH ₄ Cl Level (mM)	Time (Hours) : absorbance (OD ₆₂₀)									
	0	12	24	48	60	72	84	96		
0	0.026±0	0.04±0.004	0.06±0.005	0.08±0.002	0.09±0.005	0.09±0.006	0.10±0.01	0.11±0.008		
0.03	0.026±0	0.04±0.004	0.07±0.009	0.08±0.008	0.10±0.009	0.12±0.003	0.12±0.01	0.13±0.010		
0.15	0.026±0	0.03±0.002	0.07±0.001	0.08±0.006	0.14±0.004	0.16±0.005	0.18±0.007	0.20±0.006		
0.75	0.026±0	0.04±0.001	0.06±0.007	0.08±0.007	0.13±0.006	0.14±0.008	0.21±0.003	0.25±0.010		
3.75	0.026±0	0.04±0.005	0.07±0.005	0.08±0.005	0.14±0.002	0.16±0.003	0.22±0.001	0.26±0.001		
18.75	0.026±0	0.03±0.004	0.06±0.002	0.09±0.006	0.15±0.005	0.16±0.009	0.21±0.010	0.25±0.020		

Cell count (mean±S.D x 10 ⁵ ml ⁻¹) of <i>Ankistrodesmus convolutus</i> UMACC 101 grown at different NH ₄ Cl levels										
Time (Hours) : cell count (x 10 ⁵ ml ⁻¹)										
NH ₄ Cl Level (mM)	0	12	24	48	60	72	84	96		
0	1.46±0	1.50±0.07	3.33±0.05	4.06±0.10	5.01±0.16	5.21±0.27	5.38±0.19	5.49±0.06		
0.03	1.46±0	2.68±0.24	3.48±0.14	5.63±0.26	6.23±0.30	7.37±0.22	8.48±0.24	8.90±0.19		
0.15	1.46±0	3.08±0.37	3.64±0.30	6.31±0.18	7.23±0.09	8.62±0.65	9.90±0.28	10.5±0.09		
0.75	1.46±0	3.15±0.03	3.79±0.19	6.67±0.38	7.52±0.19	9.42±0.31	11.2±0.35	12.2±0.20		
3.75	1.46±0	3.05±0.09	4.35±0.13	7.07±0.41	7.42±0.18	9.30±0.20	10.8±0.26	11.6±0.22		
18.75	1.46±0	3.23±0.16	5.09±0.12	8.35±0.43	9.46±0.17	10.49±0.47	12.8±0.26	13.3±0.15		

Appendix 12										
OD ₆₂₀ of <i>Ankistrodesmus convolutus</i> UMACC 101 grown at different NH ₄ Cl levels										
Time (Hours) : absorbance (OD ₆₂₀)										
NH ₄ Cl Level (mM)	0	12	24	48	60	72	84	96		
0	0.023±0	0.03±0.006	0.05±0.004	0.07±0.003	0.08±0.002	0.08±0.001	0.09±0.003	0.10±0.002		
0.03	0.023±0	0.04±0.001	0.06±0.005	0.08±0.005	0.10±0.005	0.10±0.004	0.12±0.005	0.13±0.008		
0.15	0.023±0	0.03±0.001	0.06±0.004	0.08±0.002	0.12±0.001	0.14±0.003	0.19±0.010	0.21±0.008		
0.75	0.023±0	0.03±0.004	0.06±0.004	0.09±0.003	0.12±0.010	0.14±0.010	0.22±0.020	0.27±0.020		
3.75	0.023±0	0.03±0.006	0.05±0.003	0.08±0.002	0.12±0.005	0.14±0.009	0.20±0.010	0.25±0.010		
18.75	0.023±0	0.03±0	0.06±0.004	0.09±0.003	0.14±0.010	0.16±0.010	0.21±0.030	0.26±0.030		

Cell count (mean±S.D x 10 ⁵ ml ⁻¹) of <i>Chlorella vulgaris</i> UMACC 001 grown at different levels of PO ₄ ³⁻ in low-NaNO ₃ (0.03 mM) medium										
PO ₄ Level (mM)	Time (Hours) : cell count (x 10 ⁵ ml ⁻¹)									
	0	12	24	48	60	72	84	96		
0	1.73±0	2.82±0.04	3.76±0.06	5.85±0.07	7.58±0.05	8.19±0.04	8.73±0.13	8.86±0.19		
0.02	1.73±0	2.95±0.03	3.92±0.15	5.05±0.04	8.42±0.11	9.23±0.04	9.64±0.04	9.90±0.05		
0.10	1.73±0	2.26±0.05	4.50±0.14	7.67±0.04	8.75±0.04	9.55±0.07	10.1±0.09	10.1±0.15		
0.50	1.73±0	3.15±0.11	3.80±0.07	7.52±0.08	9.20±0.08	9.84±0.19	10.1±0.06	10.2±0.09		
2.50	1.73±0	3.13±0.13	3.98±0.08	7.10±0.07	9.59±0.04	10.3±0.04	10.3±01	10.3±0.16		
12.5	1.73±0	3.38±0.04	4.83±0.05	8.63±0.05	10.3±0.03	11.1±0.08	11.2±0.08	11.4±0.05		

Appendix 14

OD₆₂₀ of *Chlorella vulgaris* UMACC 001 grown at different levels of PO₄³⁻ in low- NaNO₃ (0.03 mM) medium

PO ₄ Level (mM)	Time (Hours) : absorbance (OD ₆₂₀)									
	0	12	24	48	60	72	84	96		
0	0.026±0	0.03±0.003	0.03±0.001	0.05±0.006	0.06±0.005	0.08±0.005	0.09±0.003	0.10±0.002		
0.02	0.026±0	0.02±0.005	0.03±0.006	0.05±0.003	0.05±0.003	0.08±0	0.10±0.003	0.11±0.006		
0.10	0.026±0	0.02±0.004	0.03±0.003	0.06±0.006	0.06±0.005	0.10±0.010	0.11±0.010	0.13±0.010		
0.50	0.026±0	0.02±0.002	0.04±0.003	0.05±0.002	0.06±0.006	0.09±0.003	0.11±0.003	0.14±0.020		
2.50	0.026±0	0.03±0.004	0.04±0.003	0.05±0.004	0.07±0.010	0.10±0.008	0.11±0.010	0.16±0.040		
12.5	0.026±0	0.02±0.001	0.04±0.005	0.06±0.004	0.07±0.005	0.10±0.007	0.11±0.006	0.22±0.060		

Appendix 15

Cell count (mean $\pm$ S.D $\times 10^5 \text{ ml}^{-1}$) of *Scenedesmus quadricauda* UMACC 041 grown at different levels of PO_4^{3-} in low- NaNO_3 (0.03 mM) medium

Time (Hours) : cell count ($\times 10^5 \text{ ml}^{-1}$)

PO_4 Level (mM)	0	12	24	48	60	72	84	96
0	1.77 $\pm$ 0	2.26 $\pm$ 0.35	4.63 $\pm$ 0.08	5.35 $\pm$ 0.11	5.55 $\pm$ 0.10	5.77 $\pm$ 0.10	5.98 $\pm$ 0.11	6.23 $\pm$ 0.07
0.02	1.77 $\pm$ 0	2.86 $\pm$ 0.16	4.90 $\pm$ 0.12	5.93 $\pm$ 0.03	6.67 $\pm$ 0.24	7.65 $\pm$ 0.10	7.88 $\pm$ 0.10	8.34 $\pm$ 0.32
0.10	1.77 $\pm$ 0	2.98 $\pm$ 0.10	5.08 $\pm$ 0.10	6.28 $\pm$ 0.38	7.33 $\pm$ 0.18	8.16 $\pm$ 0.05	8.82 $\pm$ 0.13	9.22 $\pm$ 0.06
0.50	1.77 $\pm$ 0	3.12 $\pm$ 0.10	5.82 $\pm$ 0.14	6.81 $\pm$ 0.38	7.78 $\pm$ 0.06	8.66 $\pm$ 0.15	9.32 $\pm$ 0.18	9.93 $\pm$ 0.07
2.50	1.77 $\pm$ 0	3.29 $\pm$ 0.07	6.37 $\pm$ 0.48	7.00 $\pm$ 0.56	8.22 $\pm$ 0.37	9.55 $\pm$ 0.20	9.94 $\pm$ 0.12	10.3 $\pm$ 0.14
12.5	1.77 $\pm$ 0	3.65 $\pm$ 0.08	7.03 $\pm$ 0.21	7.93 $\pm$ 0.49	9.46 $\pm$ 0.54	10.3 $\pm$ 0.20	10.4 $\pm$ 0.14	10.6 $\pm$ 0.10

Appendix 16

OD_{620} of *Scenedesmus quadricauda* UMACC 041 grown at different levels of PO_4^{3-} in low- NaNO_3 (0.03 mM) medium

Time (Hours) : absorbance (OD_{620})

PO_4 Level (mM)	0	12	24	48	60	72	84	96
0	0.025 $\pm$ 0	0.04 $\pm$ 0.001	0.06 $\pm$ 0.006	0.07 $\pm$ 0.002	0.07 $\pm$ 0.001	0.08 $\pm$ 0.002	0.09 $\pm$ 0.001	0.10 $\pm$ 0.001
0.02	0.025 $\pm$ 0	0.04 $\pm$ 0.001	0.06 $\pm$ 0.001	0.07 $\pm$ 0.001	0.08 $\pm$ 0.001	0.09 $\pm$ 0.002	0.10 $\pm$ 0.002	0.13 $\pm$ 0.002
0.10	0.025 $\pm$ 0	0.04 $\pm$ 0.002	0.06 $\pm$ 0.001	0.07 $\pm$ 0.001	0.08 $\pm$ 0.001	0.10 $\pm$ 0.004	0.10 $\pm$ 0.014	0.18 $\pm$ 0.004
0.50	0.025 $\pm$ 0	0.04 $\pm$ 0.002	0.06 $\pm$ 0.001	0.07 $\pm$ 0.001	0.08 $\pm$ 0.002	0.10 $\pm$ 0.005	0.11 $\pm$ 0.035	0.18 $\pm$ 0.005
2.50	0.025 $\pm$ 0	0.05 $\pm$ 0.002	0.06 $\pm$ 0.002	0.07 $\pm$ 0.001	0.08 $\pm$ 0.001	0.10 $\pm$ 0.004	0.11 $\pm$ 0.004	0.19 $\pm$ 0.004
12.5	0.025 $\pm$ 0	0.05 $\pm$ 0.002	0.07 $\pm$ 0.001	0.08 $\pm$ 0.001	0.09 $\pm$ 0.001	0.10 $\pm$ 0.002	0.12 $\pm$ 0.003	0.21 $\pm$ 0.002

Cell count (mean±S.D x 10 ⁵ ml ⁻¹) of <i>Ankistrodesmus convolutus</i> UMACC 101 grown at different levels of PO ₄ ³⁻ in low-NaNO ₃ (0.03 mM) medium									
PO ₄ Level (mM)	Time (Hours) : cell count (x 10 ⁵ ml ⁻¹)								
	0	12	24	48	60	72	84	96	
0	1.43±0	2.82±0.08	3.06±0.09	3.32±0.10	3.65±0.22	3.90±0.28	4.30±0.11	5.36±0.49	
0.02	1.43±0	3.44±0.20	3.67±0.20	3.90±0.11	4.22±0.13	4.54±0.26	5.13±0.19	5.97±0.38	
0.10	1.43±0	4.10±0.11	4.51±0.08	4.88±0.05	5.27±0.17	5.98±0.30	6.71±0.17	7.74±0.26	
0.50	1.43±0	4.68±0.14	5.08±0.20	5.60±0.26	5.93±0.19	6.38±0.23	7.27±0.40	8.16±0.27	
2.50	1.43±0	5.00±0.04	5.63±0.18	6.18±0.06	6.50±0.11	7.34±0.81	7.96±0.33	10.1±0.80	
12.5	1.43±0	5.74±0.15	6.56±0.32	7.19±0.33	7.88±0.42	9.22±0.50	10.4±0.64	11.9±0.19	

Appendix 18

OD ₆₂₀ of <i>Ankistrodesmus convolutus</i> grown at different levels of PO ₄ ³⁻ in low- NaNO ₃ (0.03 mM) medium									
PO ₄ Level (mM)	Time (Hours) : absorbance (OD ₆₂₀)								
	0	12	24	48	60	72	84	96	
0	0.023±0	0.03±0.001	0.03±0.0001	0.04±0.001	0.05±0.003	0.07±0.002	0.08±0.002	0.08±0.001	
0.02	0.023±0	0.03±0.001	0.04±0.002	0.05±0.004	0.05±0.002	0.07±0.004	0.90±0.007	0.10±0.004	
0.10	0.023±0	0.03±0.002	0.04±0.003	0.06±0.001	0.06±0.001	0.07±0.001	0.09±0.001	0.12±0.003	
0.50	0.023±0	0.04±0.001	0.04±0.002	0.06±0.002	0.07±0.00	0.08±0.002	0.09±0.003	0.13±0.040	
2.50	0.023±0	0.04±0.002	0.05±0.002	0.06±0.003	0.07±0.003	0.08±0.006	0.10±0.003	0.14±0.020	
12.5	0.023±0	0.04±0.002	0.05±0.002	0.07±0.002	0.09±0.006	0.11±0.010	0.18±0.004	0.20±0.001	

Cell count (mean±S.D x 10 ⁵ ml ⁻¹) of <i>Chlorella vulgaris</i> UMACC 001 grown at different levels of PO ₄ ³⁻ in low-NH ₄ Cl (0.03 mM) medium									
PO ₄ Level (mM)	Time (Hours) : cell count (x 10 ⁵ ml ⁻¹)								
	0	12	24	48	60	72	84	96	
0	1.85±0	2.90±0.06	3.94±0.01	4.91±0.01	5.52±0.1	6.49±0.01	6.77±0.01	6.98±0.01	
0.02	1.85±0	3.15±0.01	4.16±0.01	5.31±0.1	5.96±0.01	6.57±0.01	7.50±0.01	8.07±0.01	
0.10	1.85±0	3.48±0.01	4.93±0.01	5.62±0.01	6.07±0.01	6.88±0.01	7.73±0.01	8.27±0.01	
0.50	1.85±0	3.74±0.01	5.01±0.01	5.79±0.01	6.66±0.01	7.05±0.01	8.07±0.01	8.88±0.01	
2.50	1.85±0	3.89±0.01	5.05±0.01	5.94±0.01	6.83±0.01	7.09±0.01	8.32±0.01	9.25±0.01	
12.5	1.85±0	3.99±0.01	5.58±0.01	6.10±0.01	7.06±0.01	7.90±0.01	10.4±0.01	11.4±0.01	

Appendix 20

OD ₆₂₀ of <i>Chlorella vulgaris</i> UMACC 001 grown at different levels of PO ₄ ³⁻ in low-NH ₄ Cl (0.03 mM) medium									
PO ₄ Level (mM)	Time (Hours) : absorbance (OD ₆₂₀)								
	0	12	24	48	60	72	84	96	
0	0.025±0	0.03±0.001	0.03±0.001	0.05±0.001	0.06±0.003	0.07±0.002	0.08±0.003	0.09±0.003	
0.02	0.025±0	0.03±0.001	0.04±0.001	0.05±0.003	0.07±0.002	0.08±0.004	0.09±0.004	0.12±0.010	
0.10	0.025±0	0.03±0	0.04±0.003	0.05±0.003	0.07±0.002	0.08±0.005	0.09±0.007	0.13±0.010	
0.50	0.025±0	0.03±0	0.04±0.003	0.05±0.004	0.07±0.005	0.08±0.003	0.10±0.008	0.14±0.010	
2.50	0.025±0	0.03±0.001	0.04±0.005	0.05±0.004	0.08±0.009	0.09±0.005	0.11±0.010	0.17±0.004	
12.5	0.025±0	0.03±0.001	0.05±0.002	0.06±0.001	0.08±0.001	0.09±0.005	0.12±0.005	0.24±0.010	

Cell count (mean $\pm$ S.D x 10⁵ ml⁻¹) of *Scenedesmus quadricauda* UMACC 041 grown at different levels of PO₄³⁻ in low-NH₄Cl (0.03 mM) medium

PO ₄ Level (mM)	Time (Hours) : cell count (x 10 ⁵ ml ⁻¹)							
	0	12	24	48	60	72	84	96
0	1.96 $\pm$ 0	2.90 $\pm$ 0.02	3.68 $\pm$ 0.03	4.97 $\pm$ 0.02	5.85 $\pm$ 0.09	6.58 $\pm$ 0.06	6.95 $\pm$ 0.05	7.02 $\pm$ 0.03
0.02	1.96 $\pm$ 0	3.14 $\pm$ 0.10	4.03 $\pm$ 0.06	5.83 $\pm$ 0.17	7.35 $\pm$ 0.46	8.39 $\pm$ 0.36	9.18 $\pm$ 0.50	9.99 $\pm$ 0.01
0.10	1.96 $\pm$ 0	3.48 $\pm$ 0.03	5.81 $\pm$ 0.31	6.73 $\pm$ 0.33	7.89 $\pm$ 0.20	8.94 $\pm$ 0.42	9.77 $\pm$ 0.45	10.1 $\pm$ 0.04
0.50	1.96 $\pm$ 0	3.74 $\pm$ 0.10	6.76 $\pm$ 0.31	7.35 $\pm$ 0.39	8.17 $\pm$ 0.24	9.13 $\pm$ 0.49	10.0 $\pm$ 0.36	10.7 $\pm$ 0.60
2.50	1.96 $\pm$ 0	3.89 $\pm$ 0.10	6.85 $\pm$ 0.30	7.67 $\pm$ 0.40	8.83 $\pm$ 0.29	9.60 $\pm$ 0.48	10.4 $\pm$ 0.36	11.2 $\pm$ 0.60
12.5	1.96 $\pm$ 0	3.99 $\pm$ 0.01	7.08 $\pm$ 0.21	7.92 $\pm$ 0.36	8.94 $\pm$ 0.24	9.96 $\pm$ 0.37	11.6 $\pm$ 0.06	12.1 $\pm$ 0.04

Appendix 22

OD₆₂₀ of *Scenedesmus quadricauda* UMACC 041 grown at different levels of PO₄³⁻ in low-NH₄Cl (0.03 mM) medium

PO ₄ Level (mM)	Time (Hours) : absorbance (OD ₆₂₀)							
	0	12	24	48	60	72	84	96
0	0.023 $\pm$ 0	0.03 $\pm$ 0.001	0.04 $\pm$ 0.001	0.05 $\pm$ 0.001	0.06 $\pm$ 0.003	0.07 $\pm$ 0.006	0.08 $\pm$ 0.006	0.09 $\pm$ 0.010
0.02	0.023 $\pm$ 0	0.03 $\pm$ 0.001	0.04 $\pm$ 0.001	0.05 $\pm$ 0.001	0.07 $\pm$ 0.002	0.08 $\pm$ 0.004	0.10 $\pm$ 0.009	0.12 $\pm$ 0.010
0.10	0.023 $\pm$ 0	0.03 $\pm$ 0.001	0.04 $\pm$ 0.002	0.05 $\pm$ 0.003	0.07 $\pm$ 0.002	0.08 $\pm$ 0.003	0.10 $\pm$ 0.009	0.13 $\pm$ 0.010
0.50	0.023 $\pm$ 0	0.03 $\pm$ 0.001	0.04 $\pm$ 0.002	0.05 $\pm$ 0.001	0.07 $\pm$ 0.001	0.09 $\pm$ 0.005	0.12 $\pm$ 0.030	0.17 $\pm$ 0.030
2.50	0.023 $\pm$ 0	0.03 $\pm$ 0.001	0.05 $\pm$ 0.001	0.05 $\pm$ 0.002	0.08 $\pm$ 0.002	0.09 $\pm$ 0.004	0.14 $\pm$ 0.010	0.20 $\pm$ 0.020
12.5	0.023 $\pm$ 0	0.03 $\pm$ 0.001	0.05 $\pm$ 0.001	0.06 $\pm$ 0.002	0.08 $\pm$ 0.002	0.10 $\pm$ 0.004	0.20 $\pm$ 0.010	0.27 $\pm$ 0.030

Cell count (mean $\pm$ S.D x 10⁵ ml⁻¹) of *Ankistrodesmus convolutus* UMACC 101 grown at different levels of PO₄³⁻ in low-NH₄Cl (0.03 mM) medium

Time (Hours) : cell count (x 10⁵ ml⁻¹)

PO ₄ Level (mM)	Time (Hours) : cell count (x 10 ⁵ ml ⁻¹)							
	0	12	24	48	60	72	84	96
0	1.54 $\pm$ 0	2.90 $\pm$ 0.05	3.07 $\pm$ 0.12	3.34 $\pm$ 0.08	3.71 $\pm$ 0.23	3.96 $\pm$ 0.26	4.50 $\pm$ 0.15	4.96 $\pm$ 0.20
0.02	1.54 $\pm$ 0	3.55 $\pm$ 0.30	4.00 $\pm$ 0.05	4.40 $\pm$ 0.28	5.68 $\pm$ 0.55	6.84 $\pm$ 0.80	9.38 $\pm$ 0.20	9.38 $\pm$ 0.50
0.10	1.54 $\pm$ 0	3.98 $\pm$ 0.04	4.85 $\pm$ 0.19	6.16 $\pm$ 0.65	7.28 $\pm$ 0.64	8.13 $\pm$ 0.20	10.5 $\pm$ 0.53	10.5 $\pm$ 0.60
0.50	1.54 $\pm$ 0	4.79 $\pm$ 0.16	5.81 $\pm$ 0.16	6.98 $\pm$ 0.08	8.07 $\pm$ 0.09	9.13 $\pm$ 0.43	11.0 $\pm$ 0.45	11.0 $\pm$ 0.40
2.50	1.54 $\pm$ 0	5.19 $\pm$ 0.19	6.10 $\pm$ 0.14	7.16 $\pm$ 0.18	8.07 $\pm$ 0.60	9.25 $\pm$ 0.81	11.6 $\pm$ 0.44	11.6 $\pm$ 0.60
12.5	1.54 $\pm$ 0	5.84 $\pm$ 0.17	6.73 $\pm$ 0.33	7.41 $\pm$ 0.36	8.30 $\pm$ 0.75	9.61 $\pm$ 0.68	11.8 $\pm$ 0.58	11.8 $\pm$ 0.60

Appendix 24

OD₆₂₀ of *Ankistrodesmus convolutus* UMACC 101 grown at different levels of PO₄³⁻ in low-NH₄Cl (0.03 mM) medium

Time (Hours) : absorbance (OD₆₂₀)

PO ₄ Level (mM)	Time (Hours) : absorbance (OD ₆₂₀)							
	0	12	24	48	60	72	84	96
0	0.023 $\pm$ 0	0.03 $\pm$ 0.001	0.04 $\pm$ 0.001	0.05 $\pm$ 0.001	0.06 $\pm$ 0.001	0.07 $\pm$ 0.001	0.08 $\pm$ 0.001	0.09 $\pm$ 0.010
0.02	0.023 $\pm$ 0	0.03 $\pm$ 0.002	0.04 $\pm$ 0.001	0.05 $\pm$ 0.001	0.07 $\pm$ 0.001	0.08 $\pm$ 0.001	0.10 $\pm$ 0.001	0.12 $\pm$ 0.010
0.10	0.023 $\pm$ 0	0.04 $\pm$ 0.002	0.04 $\pm$ 0.001	0.06 $\pm$ 0.001	0.08 $\pm$ 0.001	0.09 $\pm$ 0.001	0.10 $\pm$ 0.001	0.13 $\pm$ 0.020
0.50	0.023 $\pm$ 0	0.04 $\pm$ 0.001	0.05 $\pm$ 0.001	0.06 $\pm$ 0.001	0.08 $\pm$ 0.001	0.09 $\pm$ 0.001	0.12 $\pm$ 0.001	0.17 $\pm$ 0.040
2.50	0.023 $\pm$ 0	0.04 $\pm$ 0.001	0.05 $\pm$ 0.001	0.07 $\pm$ 0.001	0.08 $\pm$ 0.001	0.11 $\pm$ 0.001	0.17 $\pm$ 0.001	0.20 $\pm$ 0.002
12.5	0.023 $\pm$ 0	0.04 $\pm$ 0.002	0.05 $\pm$ 0.001	0.07 $\pm$ 0.001	0.09 $\pm$ 0.001	0.11 $\pm$ 0.001	0.20 $\pm$ 0.001	0.28 $\pm$ 0.010

Cell count (mean $\pm$ S.D x 10⁵ ml⁻¹) of *Chlorella vulgaris* UMACC 001 grown at different levels of PO₄³⁻ in high-NaNO₃ (18.75 mM) medium

Time (Hours) : cell count (x 10⁵ ml⁻¹)

PO ₄ Level (mM)	0	12	24	48	60	72	84	96
0	1.52 $\pm$ 0	2.83 $\pm$ 0.02	3.20 $\pm$ 0.10	3.50 $\pm$ 0.10	3.90 $\pm$ 0.15	4.14 $\pm$ 0.02	4.26 $\pm$ 0.02	5.40 $\pm$ 0.03
0.02	1.52 $\pm$ 0	2.77 $\pm$ 0.32	3.63 $\pm$ 0.24	4.05 $\pm$ 0.21	4.86 $\pm$ 0.24	5.64 $\pm$ 0.30	6.66 $\pm$ 0.38	7.24 $\pm$ 0.20
0.10	1.52 $\pm$ 0	2.82 $\pm$ 0.25	3.81 $\pm$ 0.19	4.12 $\pm$ 0.18	5.08 $\pm$ 0.12	5.88 $\pm$ 0.22	6.78 $\pm$ 0.40	7.85 $\pm$ 0.28
0.50	1.52 $\pm$ 0	2.96 $\pm$ 0.24	4.00 $\pm$ 0.15	4.48 $\pm$ 0.29	5.33 $\pm$ 0.12	6.59 $\pm$ 0.54	8.06 $\pm$ 1.01	8.71 $\pm$ 0.72
2.50	1.52 $\pm$ 0	3.14 $\pm$ 0.28	4.13 $\pm$ 0.13	4.87 $\pm$ 0.21	5.81 $\pm$ 0.26	6.80 $\pm$ 0.52	8.78 $\pm$ 0.75	9.25 $\pm$ 1.07
12.5	1.52 $\pm$ 0	3.22 $\pm$ 0.21	4.24 $\pm$ 0.04	5.05 $\pm$ 0.10	6.09 $\pm$ 0.21	7.10 $\pm$ 0.60	9.13 $\pm$ 0.71	11.2 $\pm$ 0.72

Appendix 26

OD₆₂₀ of *Chlorella vulgaris* UMACC 001 grown at different levels of PO₄³⁻ in high-NaNO₃ (18.75 mM) medium

Time (Hours) : absorbance (OD₆₂₀)

PO ₄ Level (mM)	0	12	24	48	60	72	84	96
0	0.026 $\pm$ 0	0.03 $\pm$ 0.0004	0.04 $\pm$ 0.0030	0.05 $\pm$ 0.0004	0.06 $\pm$ 0.002	0.06 $\pm$ 0.0003	0.07 $\pm$ 0.001	0.08 $\pm$ 0.0003
0.02	0.026 $\pm$ 0	0.04 $\pm$ 0.0001	0.04 $\pm$ 0.0010	0.05 $\pm$ 0.0010	0.06 $\pm$ 0.006	0.07 $\pm$ 0.003	0.08 $\pm$ 0.006	0.09 $\pm$ 0.0030
0.10	0.026 $\pm$ 0	0.04 $\pm$ 0.0010	0.04 $\pm$ 0.0003	0.05 $\pm$ 0.0010	0.06 $\pm$ 0.006	0.07 $\pm$ 0.006	0.08 $\pm$ 0.006	0.09 $\pm$ 0.0030
0.50	0.026 $\pm$ 0	0.04 $\pm$ 0.0010	0.05 $\pm$ 0.0020	0.06 $\pm$ 0.0040	0.06 $\pm$ 0.003	0.07 $\pm$ 0.008	0.08 $\pm$ 0.008	0.14 $\pm$ 0.0400
2.50	0.026 $\pm$ 0	0.04 $\pm$ 0.0010	0.05 $\pm$ 0.0004	0.06 $\pm$ 0.0060	0.07 $\pm$ 0.005	0.07 $\pm$ 0.004	0.10 $\pm$ 0.004	0.17 $\pm$ 0.0500
12.5	0.026 $\pm$ 0	0.04 $\pm$ 0.0001	0.05 $\pm$ 0.0003	0.06 $\pm$ 0.0001	0.10 $\pm$ 0.001	0.11 $\pm$ 0.004	0.20 $\pm$ 0.005	0.25 $\pm$ 0.0200

Cell count (mean $\pm$ S.D $\times 10^5 \text{ ml}^{-1}$) of *Scenedesmus quadricauda* UMACC 041 grown at different levels of PO_4^{3-} in high- NaNO_3 (18.75 mM) medium

PO ₄ Level (mM)	Time (Hours) : cell count ($\times 10^5 \text{ ml}^{-1}$)							
	0	12	24	48	60	72	84	96
0	1.44 $\pm$ 0	2.63 $\pm$ 0.11	3.22 $\pm$ 0.05	3.48 $\pm$ 0.03	3.90 $\pm$ 0.11	4.74 $\pm$ 0.23	5.22 $\pm$ 0.23	6.07 $\pm$ 0.11
0.02	1.44 $\pm$ 0	2.70 $\pm$ 0.18	3.52 $\pm$ 0.21	4.05 $\pm$ 0.09	5.25 $\pm$ 0.43	5.85 $\pm$ 0.34	6.28 $\pm$ 0.51	7.11 $\pm$ 0.69
0.10	1.44 $\pm$ 0	2.79 $\pm$ 0.14	3.72 $\pm$ 0.26	4.10 $\pm$ 0.13	5.40 $\pm$ 0.50	5.99 $\pm$ 0.34	6.50 $\pm$ 0.47	7.62 $\pm$ 0.56
0.50	1.44 $\pm$ 0	2.87 $\pm$ 0.12	3.80 $\pm$ 0.24	4.53 $\pm$ 0.40	5.49 $\pm$ 0.52	6.16 $\pm$ 0.35	7.11 $\pm$ 0.13	8.51 $\pm$ 0.50
2.50	1.44 $\pm$ 0	2.99 $\pm$ 0.02	3.93 $\pm$ 0.21	4.82 $\pm$ 0.30	5.72 $\pm$ 0.41	6.59 $\pm$ 0.40	7.96 $\pm$ 0.06	9.15 $\pm$ 0.34
12.5	1.44 $\pm$ 0	3.02 $\pm$ 0.02	4.11 $\pm$ 0.09	5.03 $\pm$ 0.08	5.97 $\pm$ 0.26	7.05 $\pm$ 0.15	8.71 $\pm$ 0.40	10.2 $\pm$ 0.28

Appendix 28

OD₆₂₀ of *Scenedesmus quadricauda* UMACC 041 grown at different levels of PO_4^{3-} in high- NaNO_3 (18.75 mM) medium

PO ₄ Level (m M)	Time (Hours) : absorbance (OD ₆₂₀)							
	0	12	24	48	60	72	84	96
0	0.025 $\pm$ 0	0.03 $\pm$ 0.0001	0.04 $\pm$ 0.0001	0.04 $\pm$ 0.0001	0.06 $\pm$ 0.0001	0.06 $\pm$ 0.0001	0.08 $\pm$ 0.0001	0.08 $\pm$ 0.0001
0.02	0.025 $\pm$ 0	0.03 $\pm$ 0.0030	0.04 $\pm$ 0.0020	0.05 $\pm$ 0.001	0.06 $\pm$ 0.0010	0.07 $\pm$ 0.0010	0.08 $\pm$ 0.0090	0.10 $\pm$ 0.0050
0.10	0.025 $\pm$ 0	0.04 $\pm$ 0.0001	0.05 $\pm$ 0.0010	0.06 $\pm$ 0.002	0.06 $\pm$ 0.0020	0.07 $\pm$ 0.0030	0.09 $\pm$ 0.0040	0.10 $\pm$ 0.0030
0.50	0.025 $\pm$ 0	0.04 $\pm$ 0.0001	0.05 $\pm$ 0.0010	0.06 $\pm$ 0.001	0.07 $\pm$ 0.0010	0.08 $\pm$ 0.0020	0.09 $\pm$ 0.0050	0.14 $\pm$ 0.0400
2.50	0.025 $\pm$ 0	0.04 $\pm$ 0.0001	0.06 $\pm$ 0.0002	0.07 $\pm$ 0.002	0.08 $\pm$ 0.0010	0.08 $\pm$ 0.0010	0.12 $\pm$ 0.0100	0.20 $\pm$ 0.1000
12.5	0.025 $\pm$ 0	0.04 $\pm$ 0.0001	0.06 $\pm$ 0.0001	0.07 $\pm$ 0.0002	0.08 $\pm$ 0.0001	0.10 $\pm$ 0.0001	0.16 $\pm$ 0.0020	0.22 $\pm$ 0.0200

Cell count (mean $\pm$ S.D $\times 10^5$ ml $^{-1}$) of *Ankistrodesmus convolutus* UMACC 101 grown at different levels of PO $_4^{3-}$ in high-NaNO $_3$ (18.75 mM) medium

PO $_4$ Level (mM)	Time (Hours) : cell count ($\times 10^5$ ml $^{-1}$)							
	0	12	24	48	60	72	84	96
0	1.50 $\pm$ 0	2.88 $\pm$ 0.03	3.64 $\pm$ 0.13	4.06 $\pm$ 0.11	4.83 $\pm$ 0.22	5.30 $\pm$ 0.23	6.00 $\pm$ 0.07	6.20 $\pm$ 0.03
0.02	1.50 $\pm$ 0	3.07 $\pm$ 0.03	3.79 $\pm$ 0.19	4.88 $\pm$ 0.28	5.99 $\pm$ 0.48	7.12 $\pm$ 0.64	7.78 $\pm$ 0.42	8.74 $\pm$ 0.30
0.10	1.50 $\pm$ 0	3.20 $\pm$ 0.02	3.79 $\pm$ 0.21	5.00 $\pm$ 0.31	6.11 $\pm$ 0.58	7.16 $\pm$ 0.71	7.88 $\pm$ 0.40	8.91 $\pm$ 0.34
0.50	1.50 $\pm$ 0	3.33 $\pm$ 0.14	3.95 $\pm$ 0.24	5.23 $\pm$ 0.54	6.28 $\pm$ 0.61	7.56 $\pm$ 0.64	8.17 $\pm$ 0.75	9.23 $\pm$ 0.46
2.50	1.50 $\pm$ 0	3.70 $\pm$ 0.17	4.60 $\pm$ 0.56	5.56 $\pm$ 0.53	6.76 $\pm$ 0.89	7.81 $\pm$ 0.78	8.46 $\pm$ 0.61	9.97 $\pm$ 0.86
12.5	1.50 $\pm$ 0	3.83 $\pm$ 0.17	5.00 $\pm$ 0.14	6.33 $\pm$ 0.40	7.67 $\pm$ 0.59	8.87 $\pm$ 0.94	9.32 $\pm$ 0.40	11.3 $\pm$ 0.48

Appendix 30

OD $_{620}$ of *Ankistrodesmus convolutus* UMACC 101 grown at different levels of PO $_4^{3-}$ in high-NaNO $_3$ (18.75 mM) medium

PO $_4$ Level (mM)	Time (Hours) : absorbance (OD $_{620}$)							
	0	12	24	48	60	72	84	96
0	0.025 $\pm$ 0	0.03 $\pm$ 0.0001	0.04 $\pm$ 0.0002	0.05 $\pm$ 0.0001	0.06 $\pm$ 0.0001	0.07 $\pm$ 0.001	0.07 $\pm$ 0.0001	0.08 $\pm$ 0.0003
0.02	0.025 $\pm$ 0	0.04 $\pm$ 0.0010	0.05 $\pm$ 0.0020	0.06 $\pm$ 0.0030	0.07 $\pm$ 0.0030	0.08 $\pm$ 0.006	0.09 $\pm$ 0.0090	0.10 $\pm$ 0.0030
0.10	0.025 $\pm$ 0	0.04 $\pm$ 0.0010	0.05 $\pm$ 0.0060	0.06 $\pm$ 0.0040	0.07 $\pm$ 0.0030	0.09 $\pm$ 0.007	0.10 $\pm$ 0.0070	0.11 $\pm$ 0.0070
0.50	0.025 $\pm$ 0	0.05 $\pm$ 0.0010	0.06 $\pm$ 0.0010	0.07 $\pm$ 0.0040	0.08 $\pm$ 0.0010	0.10 $\pm$ 0.001	0.11 $\pm$ 0.0010	0.12 $\pm$ 0.0010
2.50	0.025 $\pm$ 0	0.05 $\pm$ 0.0010	0.06 $\pm$ 0.0010	0.07 $\pm$ 0.0040	0.09 $\pm$ 0.0010	0.10 $\pm$ 0.001	0.13 $\pm$ 0.0010	0.20 $\pm$ 0.0010
12.5	0.025 $\pm$ 0	0.05 $\pm$ 0.0001	0.07 $\pm$ 0.0010	0.08 $\pm$ 0.0010	0.09 $\pm$ 0.0010	0.12 $\pm$ 0.002	0.19 $\pm$ 0.0060	0.25 $\pm$ 0.0010

Cell count (mean $\pm$ S.D $\times 10^5$ ml $^{-1}$) of *Chlorella vulgaris* UMACC 001 grown at different levels of PO $_4^{3-}$ in high-NH $_4$ Cl (18.75 mM) medium

PO $_4$ Level (mM)	Time (Hours) : cell count ($\times 10^5$ ml $^{-1}$)							
	0	12	24	48	60	72	84	96
0	1.38 $\pm$ 0	2.49 $\pm$ 0.01	3.11 $\pm$ 0.06	3.96 $\pm$ 0.09	4.80 $\pm$ 0.30	5.67 $\pm$ 0.05	6.61 $\pm$ 0.25	6.95 $\pm$ 0.05
0.02	1.38 $\pm$ 0	3.60 $\pm$ 0.10	4.66 $\pm$ 0.05	5.50 $\pm$ 0.05	6.66 $\pm$ 0.42	7.40 $\pm$ 0.51	8.50 $\pm$ 0.56	9.34 $\pm$ 0.59
0.10	1.38 $\pm$ 0	3.92 $\pm$ 0.10	4.78 $\pm$ 0.20	6.20 $\pm$ 0.75	7.16 $\pm$ 0.41	7.96 $\pm$ 0.32	9.13 $\pm$ 0.80	9.76 $\pm$ 0.27
0.50	1.38 $\pm$ 0	4.13 $\pm$ 0.01	5.13 $\pm$ 0.07	6.36 $\pm$ 0.10	7.51 $\pm$ 0.34	8.30 $\pm$ 0.42	9.59 $\pm$ 0.72	10.53 $\pm$ 0.18
2.50	1.38 $\pm$ 0	4.25 $\pm$ 0.01	5.55 $\pm$ 0.02	6.52 $\pm$ 0.03	7.58 $\pm$ 0.13	9.26 $\pm$ 0.32	10.37 $\pm$ 0.30	11.37 $\pm$ 0.24
12.5	1.38 $\pm$ 0	4.87 $\pm$ 0.08	5.95 $\pm$ 0.09	6.88 $\pm$ 0.05	8.56 $\pm$ 0.07	9.80 $\pm$ 0.12	10.76 $\pm$ 0.49	11.94 $\pm$ 0.29

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OD $_{620}$ of *Chlorella vulgaris* UMACC 001 grown at different levels of PO $_4^{3-}$ in high-NH $_4$ Cl (18.75 mM) medium

PO $_4$ Level (mM)	Time (Hours) : absorbance (OD $_{620}$)							
	0	12	24	48	60	72	84	96
0	0.027 $\pm$ 0	0.03 $\pm$ 0.001	0.04 $\pm$ 0.001	0.04 $\pm$ 0.001	0.07 $\pm$ 0.001	0.07 $\pm$ 0.002	0.08 $\pm$ 0.001	0.08 $\pm$ 0.002
0.02	0.027 $\pm$ 0	0.04 $\pm$ 0.001	0.05 $\pm$ 0.001	0.06 $\pm$ 0.003	0.07 $\pm$ 0.004	0.08 $\pm$ 0.007	0.08 $\pm$ 0.003	0.09 $\pm$ 0.005
0.10	0.027 $\pm$ 0	0.04 $\pm$ 0.001	0.05 $\pm$ 0.002	0.07 $\pm$ 0.002	0.07 $\pm$ 0.004	0.08 $\pm$ 0.008	0.09 $\pm$ 0.007	0.10 $\pm$ 0.006
0.50	0.027 $\pm$ 0	0.04 $\pm$ 0.001	0.06 $\pm$ 0.001	0.07 $\pm$ 0.003	0.08 $\pm$ 0.004	0.09 $\pm$ 0.003	0.10 $\pm$ 0.006	0.12 $\pm$ 0.006
2.50	0.027 $\pm$ 0	0.05 $\pm$ 0.001	0.06 $\pm$ 0.001	0.07 $\pm$ 0.004	0.09 $\pm$ 0.002	0.10 $\pm$ 0.001	0.13 $\pm$ 0.005	0.20 $\pm$ 0.005
12.5	0.027 $\pm$ 0	0.05 $\pm$ 0.001	0.06 $\pm$ 0.002	0.08 $\pm$ 0.002	0.10 $\pm$ 0.003	0.12 $\pm$ 0.003	0.20 $\pm$ 0.009	0.30 $\pm$ 0.030

Cell count (mean $\pm$ S.D $\times 10^5 \text{ ml}^{-1}$) of *Scenedesmus quadricauda* UMACC 041 grown at different levels of PO_4^{3-} in high- NH_4Cl (18.75 mM) medium

PO ₄ Level (mM)	Time (Hours) : cell count (x 10 ⁵ ml ⁻¹)							
	0	12	24	48	60	72	84	96
0	1.35±0	2.51±0.05	3.79±0.04	4.09±0.07	4.99±0.04	5.68±0.50	6.70±0.20	6.99±0.01
0.02	1.35±0	4.40±0.02	5.32±0.06	6.11±0.11	6.85±0.08	7.92±0.06	8.91±0.10	9.73±0.10
0.10	1.35±0	4.92±0.04	5.53±0.16	6.49±0.06	7.91±0.06	8.65±0.44	9.67±0.27	10.22±0.41
0.50	1.35±0	4.97±0.06	5.89±0.13	6.78±0.17	7.94±0.36	9.00±0.57	10.08±0.25	10.53±0.40
2.50	1.35±0	5.19±0.05	6.77±0.03	7.73±0.23	8.99±0.10	9.87±0.33	10.81±0.21	11.93±0.06
12.5	1.35±0	5.42±0.06	6.95±0.03	7.94±0.08	9.79±0.18	11.1±0.18	11.91±0.18	12.82±0.22

Appendix 34

OD₆₂₀ of *Scenedesmus quadricauda* UMACC 041 grown at different levels of PO_4^{3-} in high- NH_4Cl (18.75 mM) medium

PO ₄ Level (mM)	Time (Hours) : absorbance (OD ₆₂₀)							
	0	12	24	48	60	72	84	96
0	0.028±0	0.03±0.005	0.04±0.001	0.05±0.001	0.06±0.001	0.06±0.001	0.07±0.001	0.07±0.001
0.02	0.028±0	0.03±0.003	0.05±0.001	0.05±0.004	0.06±0.006	0.07±0.007	0.08±0.006	0.09±0.004
0.10	0.028±0	0.04±0.001	0.05±0.002	0.06±0.003	0.07±0.004	0.08±0.005	0.09±0.003	0.10±0.001
0.50	0.028±0	0.04±0.001	0.05±0.003	0.06±0.005	0.07±0.002	0.09±0.006	0.10±0.001	0.14±0.010
2.50	0.028±0	0.05±0.001	0.06±0.003	0.07±0.005	0.08±0.004	0.10±0.002	0.16±0.030	0.23±0.020
12.5	0.028±0	0.05±0.001	0.06±0.003	0.07±0.004	0.09±0.001	0.13±0.004	0.20±0.007	0.30±0.007

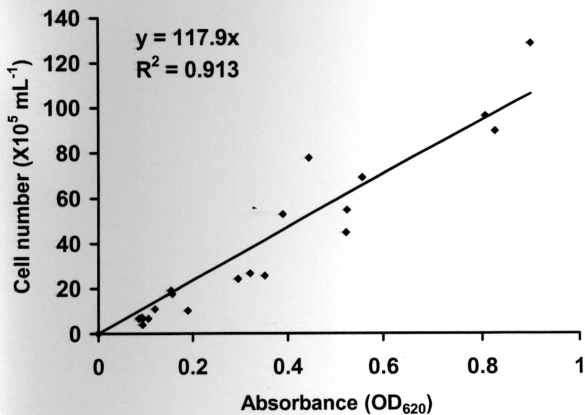
Cell count (mean $\pm$ S.D $\times 10^5$ ml $^{-1}$) of *Ankistrodesmus convolutus* UMACC 101 grown at different levels of PO $_4^{3-}$ in high-NH $_4$ Cl (18.75 mM) medium

PO $_4$ Level (mM)	Time (Hours) : cell count ($\times 10^5$ ml $^{-1}$)							
	0	12	24	48	60	72	84	96
0	1.45 $\pm$ 0	1.58 $\pm$ 0.01	3.29 $\pm$ 0.06	4.14 $\pm$ 0.09	5.35 $\pm$ 0.30	6.01 $\pm$ 0.05	6.53 $\pm$ 0.25	6.95 $\pm$ 0.05
0.02	1.45 $\pm$ 0	3.65 $\pm$ 0.10	4.55 $\pm$ 0.05	5.44 $\pm$ 0.05	6.42 $\pm$ 0.42	7.41 $\pm$ 0.51	8.21 $\pm$ 0.56	9.63 $\pm$ 0.59
0.10	1.45 $\pm$ 0	3.97 $\pm$ 0.10	4.87 $\pm$ 0.20	6.12 $\pm$ 0.75	6.70 $\pm$ 0.41	7.74 $\pm$ 0.32	9.09 $\pm$ 0.80	9.98 $\pm$ 0.27
0.50	1.45 $\pm$ 0	4.31 $\pm$ 0.01	5.93 $\pm$ 0.07	7.11 $\pm$ 0.10	8.11 $\pm$ 0.34	9.12 $\pm$ 0.42	10.3 $\pm$ 0.72	11.8 $\pm$ 0.18
2.50	1.45 $\pm$ 0	4.54 $\pm$ 0.01	6.30 $\pm$ 0.02	8.00 $\pm$ 0.03	9.00 $\pm$ 0.13	10.5 $\pm$ 0.32	11.7 $\pm$ 0.30	12.3 $\pm$ 0.24
12.5	1.45 $\pm$ 0	4.80 $\pm$ 0.08	6.71 $\pm$ 0.09	8.15 $\pm$ 0.05	9.91 $\pm$ 0.07	11.0 $\pm$ 0.12	12.08 $\pm$ 0.49	13.0 $\pm$ 0.29

Appendix 36

OD $_{620}$ of *Ankistrodesmus convolutus* UMACC 101 grown at different levels of PO $_4^{3-}$ in high-NH $_4$ Cl (18.75 mM) medium

PO $_4$ Level (mM)	Time (Hours) : absorbance (OD $_{620}$)							
	0	12	24	48	60	72	84	96
0	0.023 $\pm$ 0	0.03 $\pm$ 0.001	0.03 $\pm$ 0.001	0.04 $\pm$ 0.001	0.04 $\pm$ 0.001	0.05 $\pm$ 0.002	0.06 $\pm$ 0.001	0.07 $\pm$ 0.002
0.02	0.023 $\pm$ 0	0.03 $\pm$ 0.001	0.03 $\pm$ 0.001	0.05 $\pm$ 0.003	0.05 $\pm$ 0.004	0.06 $\pm$ 0.007	0.07 $\pm$ 0.006	0.08 $\pm$ 0.005
0.10	0.023 $\pm$ 0	0.03 $\pm$ 0.001	0.03 $\pm$ 0.002	0.05 $\pm$ 0.002	0.06 $\pm$ 0.004	0.07 $\pm$ 0.008	0.08 $\pm$ 0.007	0.09 $\pm$ 0.006
0.50	0.023 $\pm$ 0	0.03 $\pm$ 0.001	0.04 $\pm$ 0.001	0.05 $\pm$ 0.003	0.06 $\pm$ 0.004	0.07 $\pm$ 0.003	0.08 $\pm$ 0.006	0.10 $\pm$ 0.006
2.50	0.023 $\pm$ 0	0.03 $\pm$ 0.001	0.05 $\pm$ 0.001	0.06 $\pm$ 0.004	0.07 $\pm$ 0.002	0.08 $\pm$ 0.001	0.09 $\pm$ 0.005	0.16 $\pm$ 0.005
12.5	0.023 $\pm$ 0	0.03 $\pm$ 0.001	0.05 $\pm$ 0.002	0.06 $\pm$ 0.004	0.07 $\pm$ 0.003	0.08 $\pm$ 0.003	0.17 $\pm$ 0.008	0.25 $\pm$ 0.030



Regression analysis between cell number and OD₆₂₀ of *Chlorella vulgaris* UMACC 001 grown in Bold's Basal Medium.