

Supplemental Data of

Hormesis-like growth and photosynthetic physiology of marine diatom *Phaeodactylum tricornutum* Bohlin exposed to polystyrene microplastics

NOTE:

These Supplemental Data are additional data or illustration of experimental results that are not essential to the understanding of the paper it is attached to. Therefore, discussions of this information are not detailed since they can be found in the paper.

Supplemental Tables S1 and S2 show the algal density and specific growth rate of *Phaeodactylum tricornutum*, and Tables S3 and S4 display the the stimulation/inhibition ratios (SIR) of growth and significant difference. Figure S1 show the suspension of microplastics at different concentrations.

Table. S1 The algae density and specific growth rate of *P. tricornutum* growing with different concentrations of microplastics under low initial algae density

Time (d)	0 mg/L		10 mg/L		20 mg/L	
	Algae density (10 ⁴ cells/mL)	Specific growth rate (d ⁻¹)	Algae density (10 ⁴ cells/mL)	Specific growth rate (d ⁻¹)	Algae density (10 ⁴ cells/mL)	Specific growth rate (d ⁻¹)
1	23.06		21.39		26.11	
2	52.22	0.82	24.44	0.13	26.11	0.00
3	60.28	0.14	33.61	0.32	35.28	0.30
4	74.44	0.21	50.83	0.41	46.39	0.27
5	104.72	0.34	81.39	0.47	82.78	0.58
6	143.06	0.31	106.67	0.27	103.89	0.23
7	174.44	0.20	122.50	0.14	111.94	0.07

Continue to table S1

Time (d)	50 mg/L		100 mg/L	
	Algae density (10 ⁴ cells/mL)	Specific growth rate (d ⁻¹)	Algae density (10 ⁴ cells/mL)	Specific growth rate (d ⁻¹)
1	14.44		18.61	
2	18.06	0.22	12.50	-0.40
3	23.61	0.27	11.94	-0.05
4	28.06	0.17	37.50	1.14
5	84.17	1.10	58.61	0.45
6d	91.94	0.09	71.67	0.20
7d	99.72	0.08	60.56	-0.17

Table. S2 The algae density and specific growth rate of *P. tricornutum* growing with different concentrations of microplastics under high initial algae density

Time (d)	0 mg/L		10 mg/L		20 mg/L	
	Algae density (10 ⁴ cells/mL)	specific growth rate (d ⁻¹)	Algae density (10 ⁴ cells/mL)	specific growth rate (d ⁻¹)	Algae density (10 ⁴ cells/mL)	specific growth rate (d ⁻¹)
1	139.17		140.83		163.89	
2	205.00	0.39	198.06	0.34	237.50	0.37
3	231.94	0.12	219.17	0.10	261.11	0.09
4	327.78	0.35	421.67	0.65	353.06	0.30
5	378.33	0.14	407.50	-0.03	404.44	0.14
6	412.22	0.09	449.72	0.10	430.56	0.06
7	503.33	0.20	515.00	0.14	505.56	0.16

Continue to table S2

Time (d)	50 mg/L		100 mg/L	
	Algae density (10 ⁴ cells/mL)	specific growth rate (d ⁻¹)	Algae density (10 ⁴ cells/mL)	specific growth rate (d ⁻¹)
1	224.17		175.83	
2	289.44	0.26	242.22	0.32
3	297.50	0.03	233.06	-0.04
4	374.72	0.23	280.56	0.19
5	448.61	0.18	367.22	0.27
6	500.28	0.11	508.06	0.32
7	570.00	0.13	580.28	0.13

Table. S3 The stimulation/inhibition ratios (SIR) of *P. tricornutum* growth and significant difference under low initial algae density

Microplastics concentration (mg/L)	1d		2d		3d		4d	
	SIR(%)	Sig.	SIR(%)	Sig.	SIR(%)	Sig.	SIR(%)	Sig.
10	-7.23	0.930	-53.19	0.000	-44.24	0.000	-31.72	0.000
20	13.25	0.334	-50.00	0.001	-41.47	0.000	-37.69	0.000
50	-37.35	0.032	-65.43	0.044	-60.83	0.000	-62.31	0.000
100	-19.28	0.893	-76.06	0.009	-80.18	0.000	-49.63	0.000

Continue to table S3

Microplastics concentration (mg/L)	5d		6d		7d	
	SIR(%)	Sig.	SIR(%)	Sig.	SIR(%)	Sig.
10	-22.28	0.000	-25.44	0.000	-29.78	0.024
20	-20.95	0.000	-27.38	0.000	-35.83	0.001
50	-19.63	0.000	-35.73	0.000	-42.83	0.011
100	-44.03	0.000	-49.90	0.000	-65.29	0.001

Table. S4 The stimulation/inhibition ratios (SIR) of *P. tricornutum* growth and significant difference under high initial algae density

Microplastics concentration (mg/L)	1d		2d		3d		4d	
	SIR(%)	Sig.	SIR(%)	Sig.	SIR(%)	Sig.	SIR(%)	Sig.
10	1.20	1.000	-3.39	0.486	-5.51	0.501	28.64	0.118
20	17.76	0.921	15.85	0.007	12.57	0.142	7.71	0.948
50	61.08	0.032	41.19	0.000	28.26	0.005	14.32	0.811
100	26.35	0.893	18.16	0.003	0.48	0.953	-14.41	0.601

Continue to table S4

Microplastics concentration (mg/L)	5d		6d		7d	
	SIR(%)	Sig.	SIR(%)	Sig.	SIR(%)	Sig.
10	7.71	0.414	9.10	0.080	2.32	0.554
20	6.90	0.463	4.45	0.363	0.44	0.909
50	18.58	0.067	21.36	0.001	13.25	0.006
100	-2.94	0.752	23.25	0.001	15.29	0.002

The mean difference is significant at the 0.05 level.

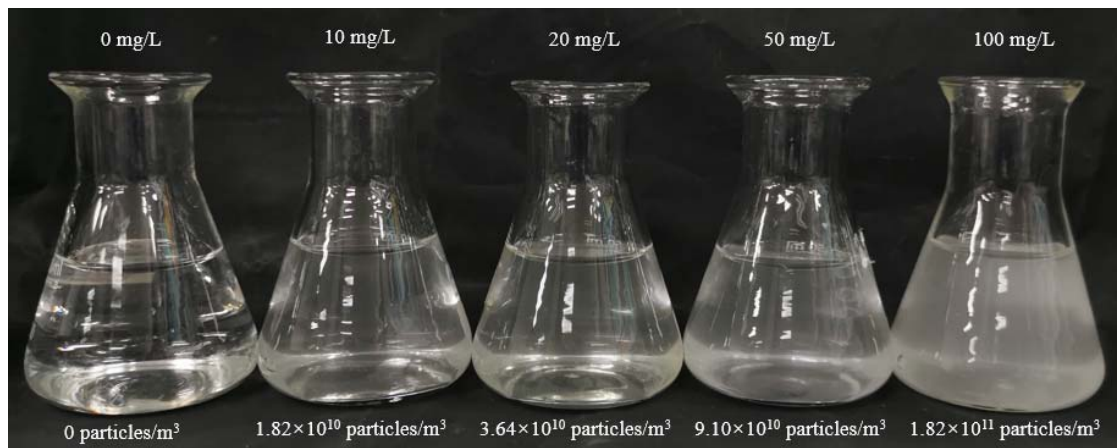


Fig. S1 The suspension of microplastics at different concentration