

Supplementary Material

Table S1. MGS-1 Mars Global Simulant bulk chemistry, according to the manufacturer (Exolith Lab).

Compound	Weight percent measured by TXRF
SiO ₂	45.6
TiO ₂	0.3
Al ₂ O ₃	9.4
Cr ₂ O ₃	0.1
FeO _T	16.9
MnO	0.1
MgO	16.5
CaO	4.0
Na ₂ O	3.7
K ₂ O	0.4
P ₂ O ₅	0.4
SO ₃	2.6

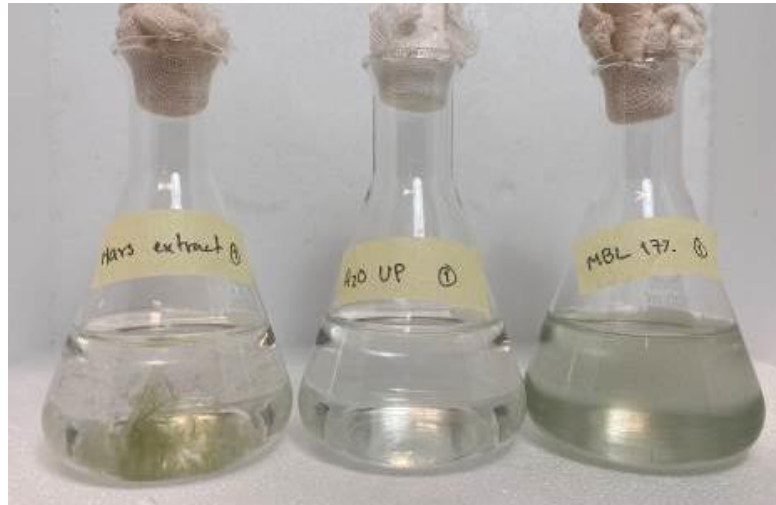
Table S2: ANOVA summary table for the elements analyzed in the media used for *L. minor* growth test (Mars regolith extract + cyanobacteria/microalgae). Test (*F*) value and corresponding P-value, as well as corresponding degrees of freedom and mean squares of the error (MSresidual) are shown.

Source of variance	df	MSresidual	F	P
Sulphur	8, 9	7699.621	30.637	< 0.001
Calcium	8, 9	390.495	22.681	< 0.001
Potassium	8, 9	0.641	88.484	< 0.001
Manganese	8, 9	0.000101	21.742	< 0.001
Nitrates	1, 2	0.170	0.0588	0.831
Orthophosphate	7, 8	0.0294	153.490	< 0.001

Species

Nostoc muscorum

Day 7 (MGS-1, H₂O, Synthetic medium)



Day 14 (H₂O, MGS-1, Synthetic medium)



Day 21 (MGS-1, H₂O, Synthetic medium)



Day 25 (MGS-1, H₂O, Synthetic medium)



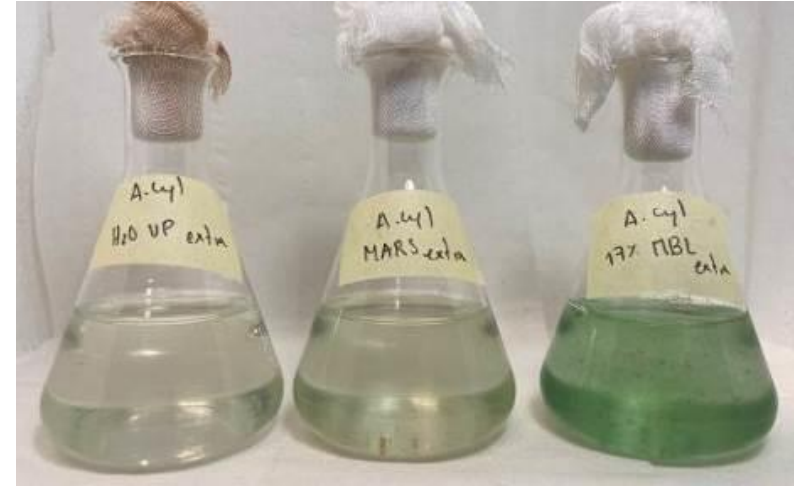
Species

Anabaena cylindrica

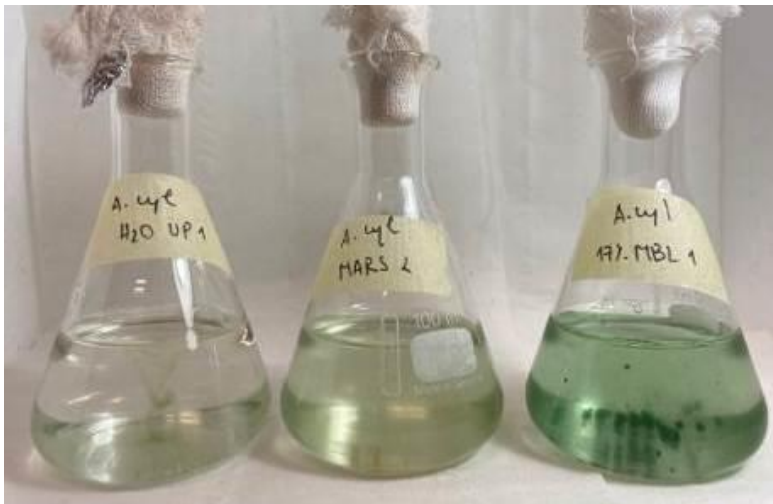
Day 7 (H₂O, MGS-1, Synthetic medium)



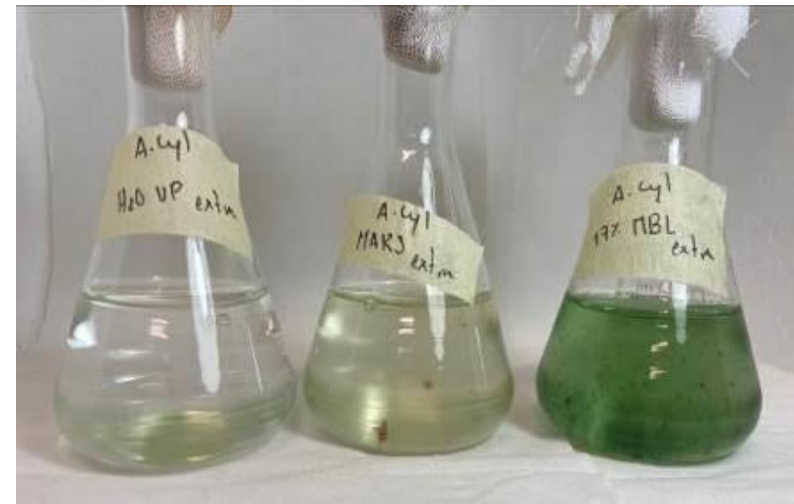
Day 14 (H₂O, MGS-1, Synthetic medium)



Day 21 (H₂O, MGS-1, Synthetic medium)



Day 25 (H₂O, MGS-1, Synthetic medium)



Species

Arthrospira platensis

Day 7 (H₂O, MGS-1, Synthetic medium)



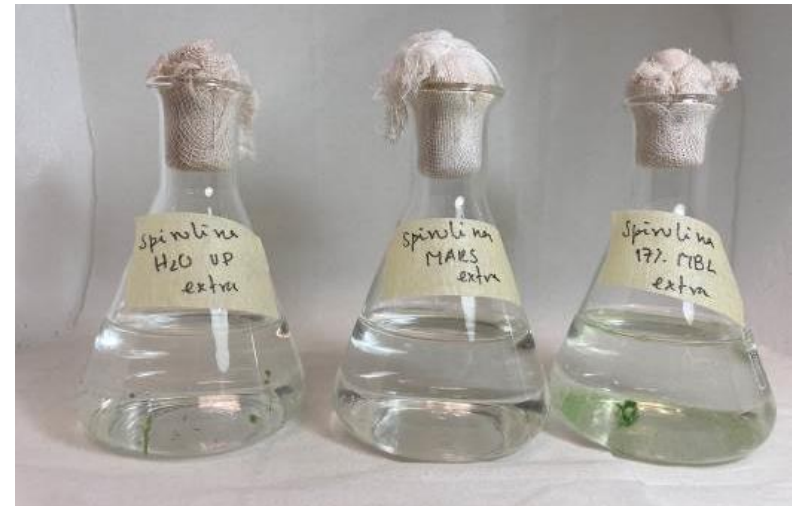
Day 14 (H₂O, MGS-1, Synthetic medium)



Day 21 (H₂O, MGS-1, Synthetic medium)



Day 25 (H₂O, MGS-1, Synthetic medium)



Species

Chlorella vulgaris

Day 7 (H₂O, MGS-1, Synthetic medium)



Day 14 (H₂O, MGS-1, Synthetic medium)



Day 21 (H₂O, MGS-1, Synthetic medium)



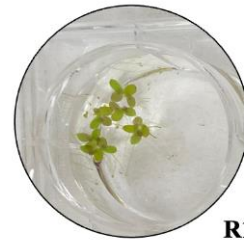
Day 25 (H₂O, MGS-1, Synthetic medium)



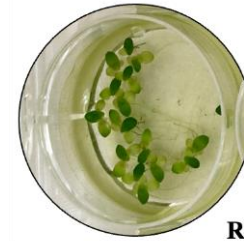
Figure S1: Pictures of the cyanobacteria/microalgae cultures growing during the experiment. Treatments are specified above each picture

Treatments

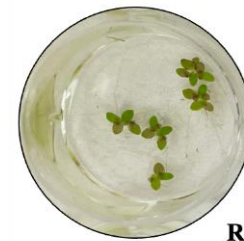
Mars regolith extract



Steinberg medium



Ultrapure water



Filtered extract



Nostoc muscorum

Sonicated extract

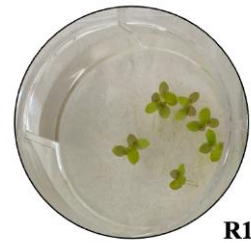


Filtered extract



Anabaena cylindrica

Sonicated extract



Filtered extract



Arthrospira platensis

Sonicated extract



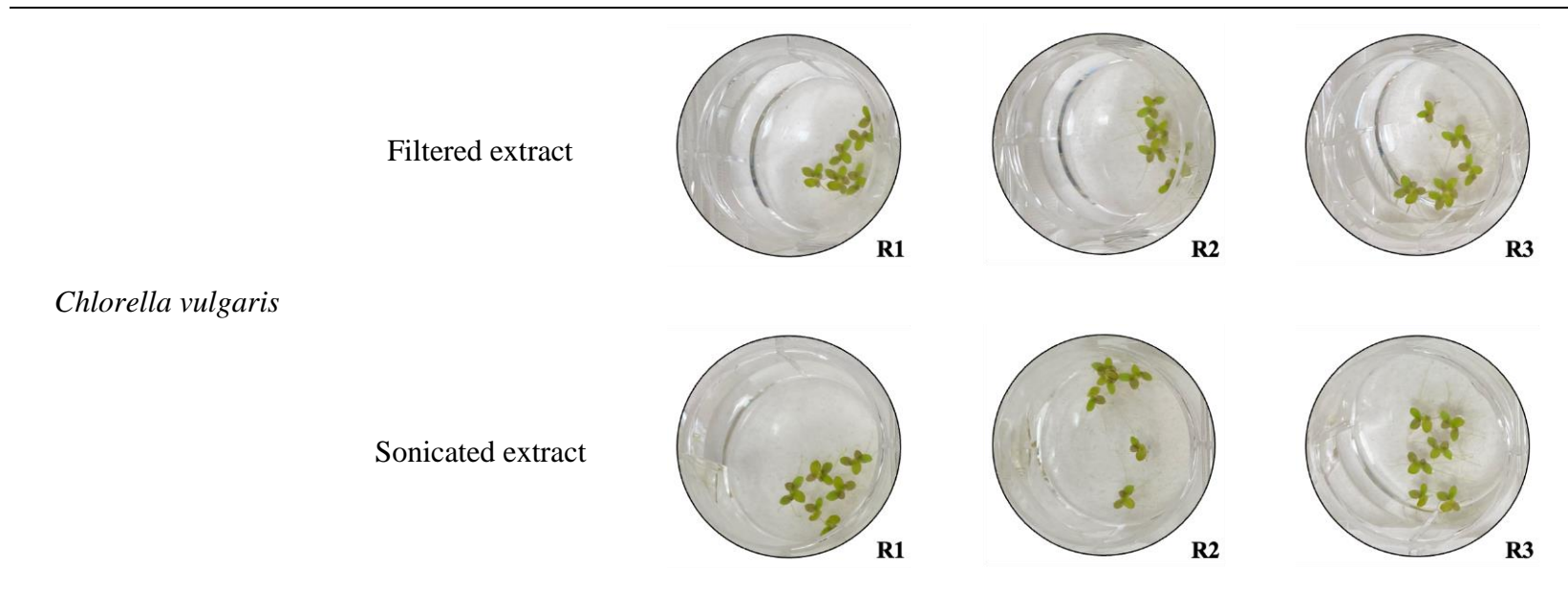


Figure S2: Pictures of the day 7 of the *Lemna minor* growth experiment.

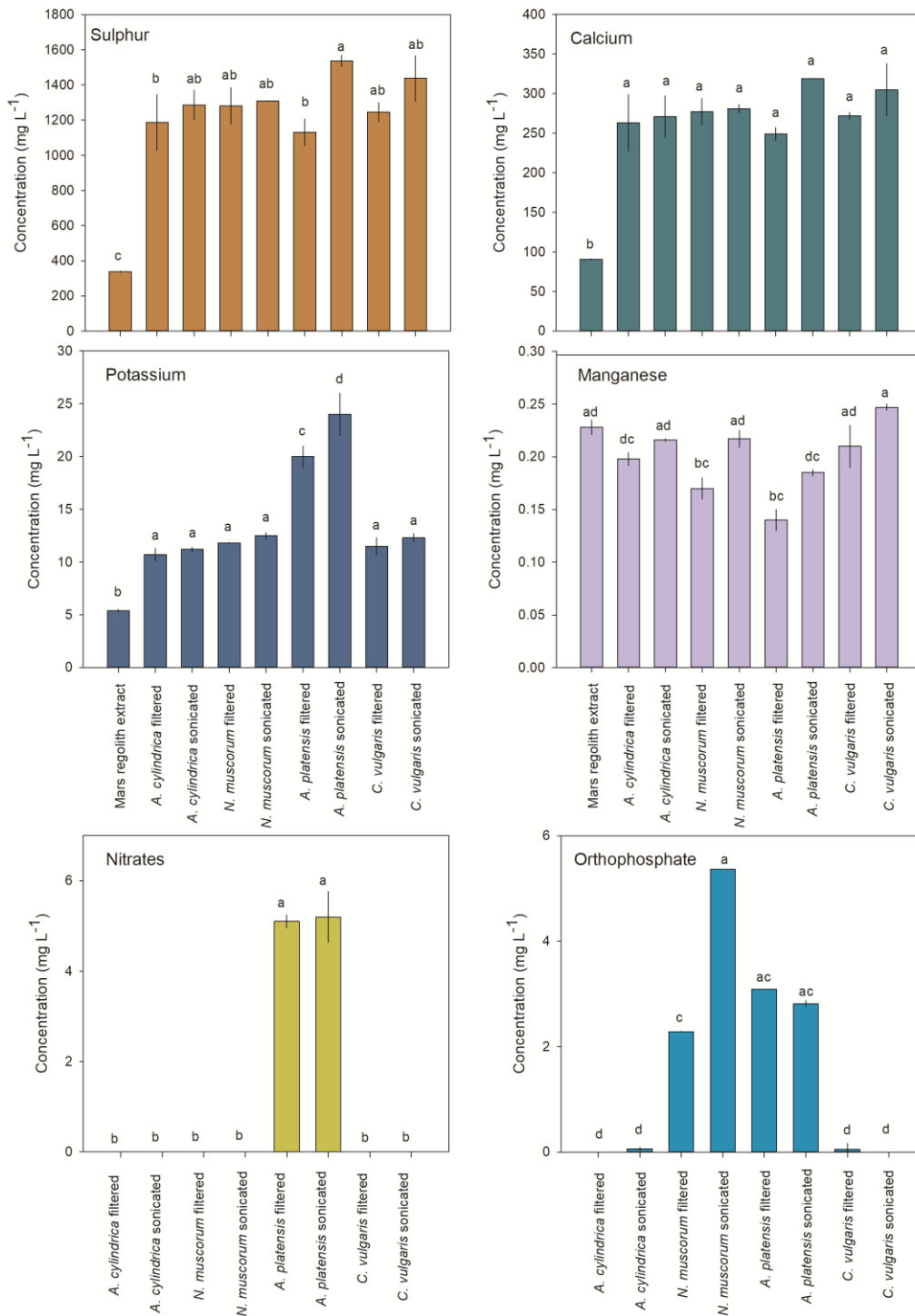


Figure S3: Analysis on the composition of the media used for *L. minor* growth test (Mars regolith extract + cyanobacteria/microalgae). Bars represent the mean of two replicates and the error bars represent the standard deviation. Different letters indicate significant differences among treatments as retrieved through the Tukey test ($p < 0.05$) preceded by one-way ANOVA.