Electronic Supplementary Material (ESI) for RSC Advances.


# The physiological responses of terrestrial cyanobacterium *Nostoc flagelliforme* to different intensities of Ultraviolet-B radiation

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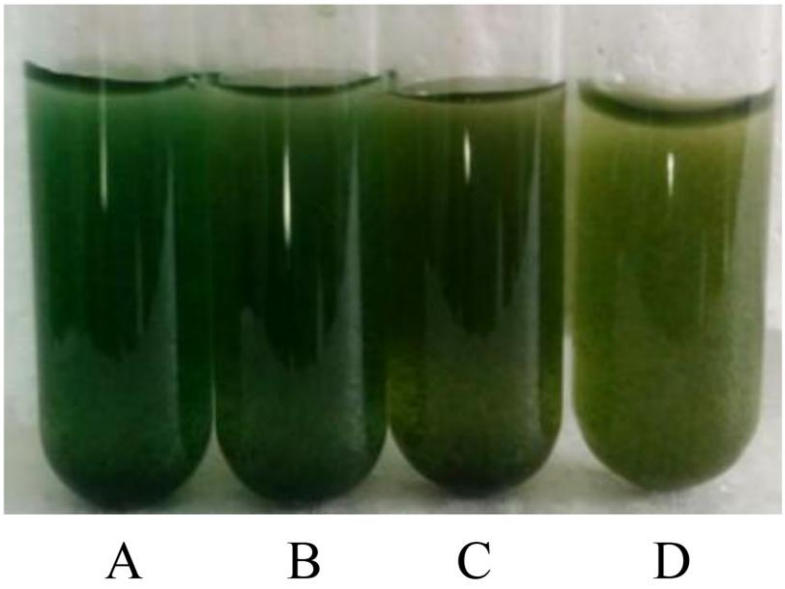
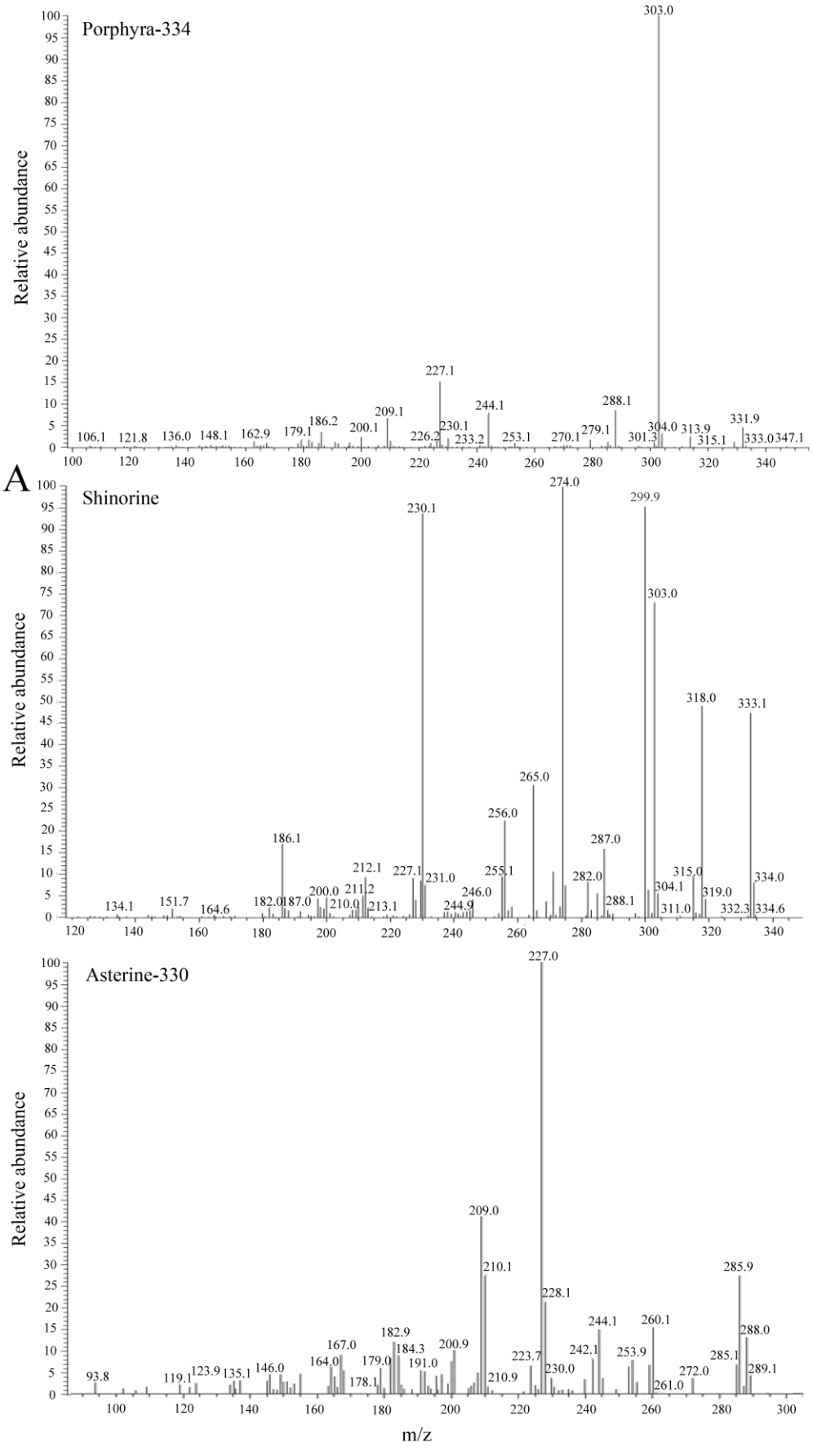



Fig. S1 Microscope observation of *N. flagelliforme* cells exposed to different intensities of UV-B radiation. A stands for the control group, B, C, D represented the 1 W/m$^2$, 3 W/m$^2$ and 5 W/m$^2$ radiation, respectively.


A
Porphyra-334
Shinorine
Asterine-330
Relative abundance
m/z

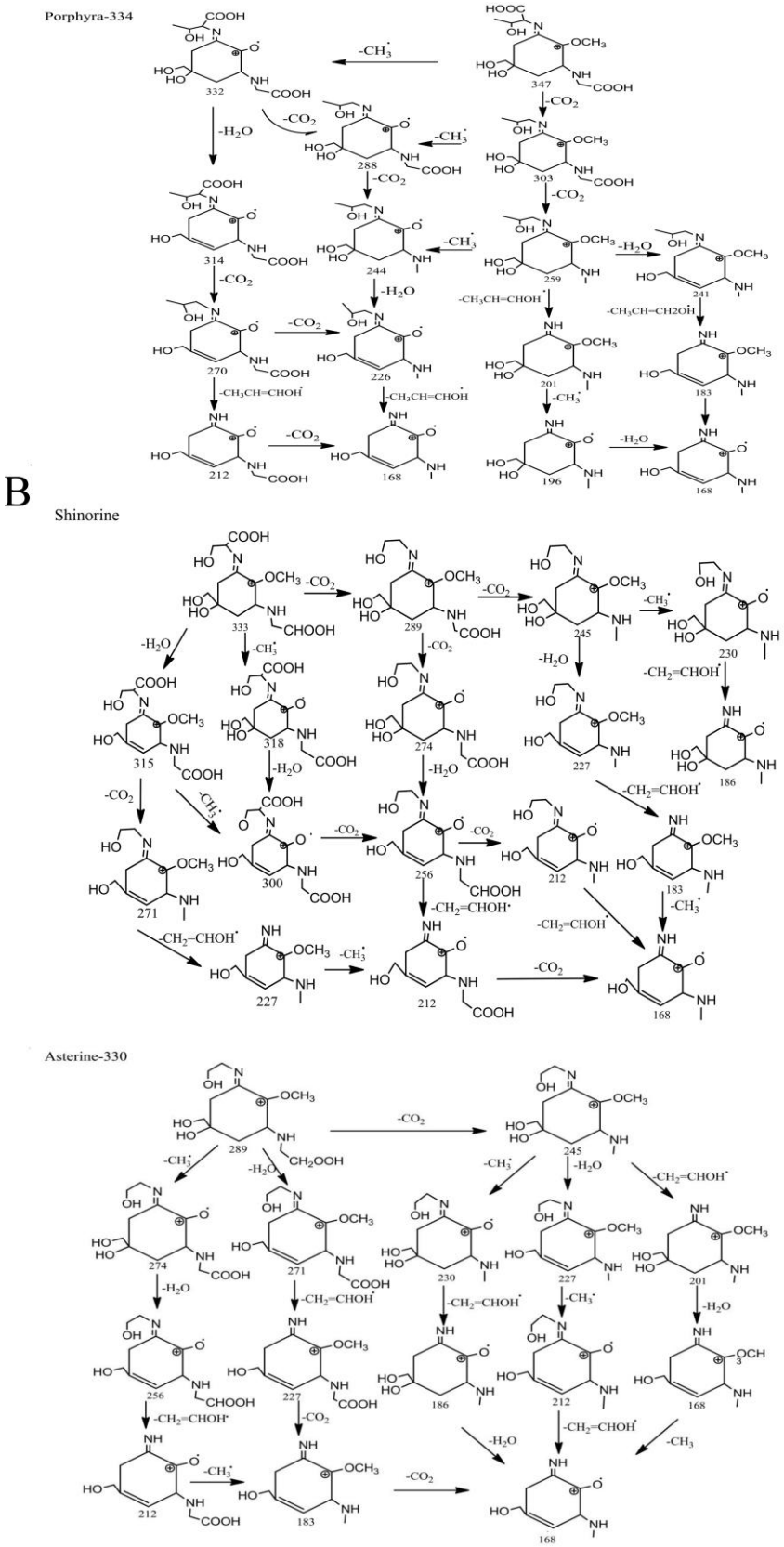



Fig. S2. LC-ESI-MS$^n$ spectrum of the MAAs from *N. flagelliforme* in positive ion mode (A) and their fragmentation ion formation process (B).

Table S1 Annotated and classified metabolites detected in *N. flagelliforme* samples

| Number | Metabolites | Classification | Number | Metabolites | Classification |
|---|---|---|---|---|---|
| M1 | D-glucose | Sugar | M31 | cis-9-Hexadecenoic acid | Fatty acid |
| M2 | Mannose | Sugar | M32 | Hexadecanoic acid | Fatty acid |
| M3 | Galactose | Sugar | M33 | Octadecanoic acid | Fatty acid |
| M4 | Sorbose | Sugar | M34 | trans-9-Octadecenoic acid | Fatty acid |
| M5 | Trehalose | Sugar | M35 | trans-11-Octadecenoic acid | Fatty acid |
| M6 | Sucrose | Sugar | M36 | trans-13-Octadecenoic acid | Fatty acid |
| M7 | D-fructose | Sugar | M37 | 9,12-Octadecadienoic acid | Fatty acid |
| M8 | Maltose | Sugar | M38 | 1,11-Undecanedioic acid | Fatty acid |
| M9 | D-talose | Sugar | M39 | 11-Eicosenoic acid | Fatty acid |
| M10 | D-Psicose | Sugar | M40 | cis-13-Eicosenoic acid | Fatty acid |
| M11 | D-Tagatose | Sugar | M41 | cis-13-Docosenoic acid | Fatty acid |
| M12 | Cellobiose | Sugar | M42 | cis-15-Tetracosenoic acid | Fatty acid |
| M13 | 3-a-Mannobiose | Sugar | M43 | Dodecanoic acid | Fatty acid |
| M14 | D-erythro-2-Pentulose | Sugar | M44 | Pentadecanoic acid | Fatty acid |
| M15 | D-Turanose | Sugar | M45 | Tetradecanoic acid | Fatty acid |
| M16 | Butyric acid | Organic acid | M46 | Docosanoic acid | Fatty acid |
| M17 | Propionic acid | Organic acid | M47 | Alanine | Amino acid |
| M18 | Acetic acid | Organic acid | M48 | L-Norvaline | Amino acid |
| M19 | Oxalic acid | Organic acid | M49 | L-lysine | Amino acid |
| M20 | Decanoic acid | Organic acid | M50 | L-threonine | Amino acid |

| | | | | | |
|---|---|---|---|---|---|
| M21 | Butyric acid | Organic acid | M51 | Serine | Amino acid |
| M22 | Phosphoric acid | Organic acid | M52 | L-proline | Amino acid |
| M23 | Octanoic acid | Organic acid | M53 | L-tyrosine | Amino acid |
| M24 | Pelargonic acid | Organic acid | M54 | Glutamate | Amino acid |
| M25 | Azelaic acid | Organic acid | M55 | Glycine | Amino acid |
| M26 | Sebacic acid | Organic acid | M56 | D-mannitol | Alcohol |
| M27 | Caprylic acid | Organic acid | M57 | D-sorbitol | Alcohol |
| M28 | Caproic acid | Organic acid | M58 | D-pinitol | Alcohol |
| M29 | Heptanoic acid | Organic acid | M59 | Glycerol | Alcohol |
| M30 | Palmitelaidic acid | Fatty acid | M60 | Glyceryl monooleate | Ester |