**Manuscript: *JoVE592-R1***

**Title:** Effective Lysis of Cyanobacterial and Green Algal Single Cell for Whole Genome Amplification in Microfluidics

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We thank the editor for his/her review of the manuscript and appreciate the opportunity to respond. Our responses to the concerns are listed in detail below with our revised text marked as blue double underline.

**Editorial comments:**

1. The editor has formatted the manuscript to match the journal's style. Please retain the same.

*Response:* Edits made in the revision were tracked in the Word file without altering the format.

2.  Please address all the specific comments marked in the manuscript.

*Response:* We have added additional information according to the editor’s comments throughout the protocol section. Specific edits are marked in the revised manuscript using track-change function. Specific major edits are as following:

1. Please rephrase the Short Abstract/Summary to clearly describe the protocol and its applications in complete sentences between 10-50 words: “Here, we present a protocol to…”

*Response:* The short summary was edited as following (Line 34-36): “Here we present a protocol to lyse cyanobacteria and green algae single cells that allows for subsequent single cell whole genome amplification in microfluidic platform with 100% success rate.”

1. How much sample? Do you check the O.D.? Starting concentration?

*Response:* We processed the desiccated sample in a small amount, so we did not check O.D. as in cultured cells. Therefore, we modified the text as following (Line 120-124): “Add 300 μL of sample diluent (0.08% poloxamer 407 in Phosphate Buffer Saline (PBS)) to 2 mL tubes that contain desiccated samples of *Nostoc* sp., *Gloeocapsa* sp. and *Sphaerocystis* sp respectively to re-suspend the cells.The desiccated samples can be identified visually in the tube as particles before re-suspension and are aggregated to the bottom of the tube after the addition of sample diluent.”

1. How do you do so? Any knob turns etc?

*Response:* The text was revised as following (Line 162-163): “Set the pressure of pneumatic control system to 25 psi by turning the knob on the first regulator of the pneumatic control unit that connects to a house gas outlet.”

1. What kind of cell suspension? Please include a one liner note stating the same. Also is there any cell count to look for?

*Response:* The text was revised as following (Line 206-207): “Pipette 10 μL of cell suspension of *Nostoc* sp., *Gloeocapsa* sp. or *Sphaerocystis* sp. made in step 1.3, 1.5 or 1.6 respectively using a gel-loading pipette tip. Insert the pipette tip into a new tube and inject the cell suspension followed by inserting a bent cannula.”

1. How do you visually identify target cells? Are there any other kind of cells as well? Please clarify.

*Response:* A note was added as following (Line 219-220): “Note: *Nostoc* sp., *Gloeocapsa* sp. or *Sphaerocystis* sp. can be easily distinguished visually from common contaminations such as *Escherichia coli* based on their size and morphology.”

4. Please proofread the manuscript carefully for any spelling or grammar issues.

*Response:* We fixed typos found in the manuscript.

5. Once done please ensure that the highlighted section is no more than 2.75 pages including headings and spacings. Please highlight complete step and ensure that this forms the most cohesive story of the protocol.

*Response:* The total highlighted part does not exceed 2.75 pages.