

CORRECTION

Correction: The four-celled Volvocales green alga *Tetrabaena socialis* exhibits weak photobehavior and high-photoprotection ability

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After this article [1] was published, the corresponding author notified PLOS of errors in Fig 5, S1 Fig, and S3 Fig. Specifically:

- In Fig 5E, the 0, 15, and 30 min control panels are duplicates of the 0, 15, and 30 min +DCMU panels respectively.
- The legend for S1 Fig shows an incorrect sample number for the swimming velocity.
- The *C. reinhardtii* Cell Model +Ca²⁺ traces presented in S3 Fig were created from data published in Fig 1B of a previous article by the same group [2].

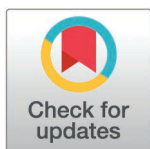
The corresponding author stated that the 0, 15, and 30 min time point panels for the control conditions in Fig 5E are incorrect and provided an updated Fig 5 with the correct 0, 15, and 30 min control panels from the original experiments. The original images underlying all panels in Fig 5 are provided in [3].

They further stated that the *C. reinhardtii* Cell Model +Ca²⁺ traces presented in S3 Fig had been inadvertently included in this article and are mirror images of the wild-type data in Fig 1B of [2]. They stated that the *C. reinhardtii* waveform traces were provided as a comparative example to illustrate the Ca²⁺-dependent waveform conversion observed in *Tetrabaena* and were not used for quantitative analyses. A corrected legend for S3 Fig has been provided to correctly acknowledge [2] as the source of this data. A corrected legend for S1 Fig has been provided to correct the sample sizes to n = 20 for beat frequency and n = 15 for swimming velocity.

The raw data underlying all figures are missing from the list of Supporting Information. The authors have provided this data in [3]. With this correction, all relevant data are now provided.

The Data Availability statement in [1] is incorrect. The correct Data Availability statement is: All relevant data are available from <https://zenodo.org/records/21438015>.

The *C. reinhardtii* Cell Model +Ca²⁺ traces presented in S3 Fig report material from [2], published in 1997 by Wiley-Liss, which are not offered under a CC BY license and are therefore excluded from this article's [1] license.



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Supporting information

S1 Fig. Motility parameters of *T. socialis*. Ciliary beating frequency (left) and swimming velocity of *T. socialis* NIES-571 (n=20 for beat frequency and n=15 for swimming velocity). Bars represent the average values.

(TIF)

S3 Fig. The ciliary beating waveforms of live *C. reinhardtii* and *T. socialis* and of demembrated *T. socialis* cell models reactivated with 1 mM ATP and 10^{-3} M Ca^{2+} were recorded using a high-speed camera and traced. The $+\text{Ca}^{2+}$ waveform traces of the *C. reinhardtii* cell model were prepared from data used in images previously published in Fig 1B of Wakabayashi et al. (1997) [2], in which isolated demembrated cilia were reactivated with 20 μM ATP and 10^{-4} M Ca^{2+} . Ten waveforms per beat were traced.

(TIF)

References

1. Tanno A, Tokutsu R, Arakaki Y, Ueki N, Minagawa J, Yoshimura K, et al. The four-celled Volvocales green alga *Tetrabaena socialis* exhibits weak photobehavior and high-photoprotection ability. PLoS One. 2021;16(10):e0259138. <https://doi.org/10.1371/journal.pone.0259138> PMID: 34699573
2. Wakabayashi K, Yagi T, Kamiya R. Ca^{2+} -dependent waveform conversion in the flagellar axoneme of *Chlamydomonas* mutants lacking the central-pair/radial spoke system. Cell Motil Cytoskeleton. 1997;38(1):22–8. [https://doi.org/10.1002/\(SICI\)1097-0169\(1997\)38:1<22::AID-CM3>3.0.CO;2-J](https://doi.org/10.1002/(SICI)1097-0169(1997)38:1<22::AID-CM3>3.0.CO;2-J) PMID: 9295138
3. Underlying raw data for “The four-celled Volvocales green alga *Tetrabaena socialis* exhibits weak photobehavior and high-photoprotection ability. <https://zenodo.org/records/21438015>

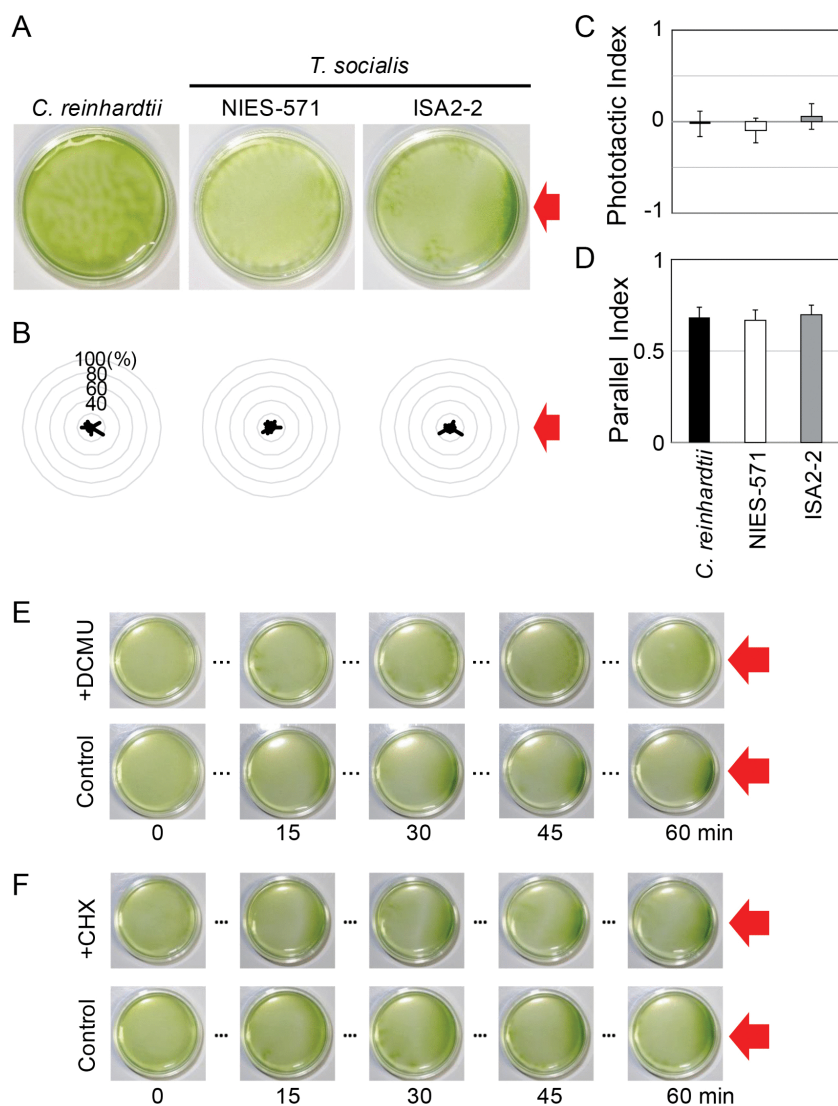


Fig 5. *Tetrabaena socialis* ISA-2-2 showed slow photoaccumulation toward red light in a photosynthesis-dependent manner. (A) Suspensions of wild-type *C. reinhardtii* and *T. socialis* NIES-571 and ISA2-2 strains were illuminated with red light ($\lambda = 640$ nm, $30 \mu\text{mol photons m}^{-2} \text{s}^{-1}$) from the right side for 15 min. (B) Polar histograms representing the percentage of cells/colonies moving in a particular direction relative to the red light illumination (12 bins of 30° ; $n = 30$ cells/colonies per strain) for 3 s following 30-s illumination. (C) Phototactic indices (average of $\cos\theta$) and (D) parallel indices (average of $|\cos\theta|$) calculated from (B). Values were not significantly different from random swimming ($p > 0.1$; Student's *t*-test; see Fig 2C and 2D for details). (E, F) Time-lapse observation of *T. socialis* ISA2-2 photoaccumulation with (E) DCMU (or ethanol as a control) or (F) cycloheximide (CHX) (or DMSO as a control) treatments for 15 min in the dark. After the red light illumination, images of the Petri dishes were captured every 15 min.

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