The following supplement accompanies the article

Single-cell response of bacterial groups to light and other environmental factors in the Delaware Bay, USA

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Supplement. Incorporation of leucine, protein and a mixture of 15 amino acids by the bacterial community exposed to PAR. Detailed comparisons of light and dark treatments from individual stations are presented for *Alpha*- and *Gammaproteobacteria* (Figs. S2–S4). The uptake of leucine, protein, and a mixture of 15 amino acids by bacterial groups was tested in light and dark conditions. For the total bacterial community and for the large groups *Alpha*- and *Gammaproteobacteria*, light treatment had an effect in some cases but did not change the characteristic DOM usage by the groups. In light-treated samples, larger fractions of cells used leucine and the amino acid mixture than incorporated protein (Fig. S1). This is the same pattern as observed in dark-treated samples.

Overall, there were no significant differences between *Alpha*- and *Gammaproteobacteria* in response to light except a stimulation of amino acid incorporation by *Alphaproteobacteria* in the light (Fig. S4). Both inhibition and stimulation by light were observed in specific cases, varying among compounds (Figs. S2-S4). Interestingly, leucine incorporation by *Alphaproteobacteria* was not affected by light in any case (Fig. S2), suggesting that the diversity of this large group may mask the responses of subgroups to light.

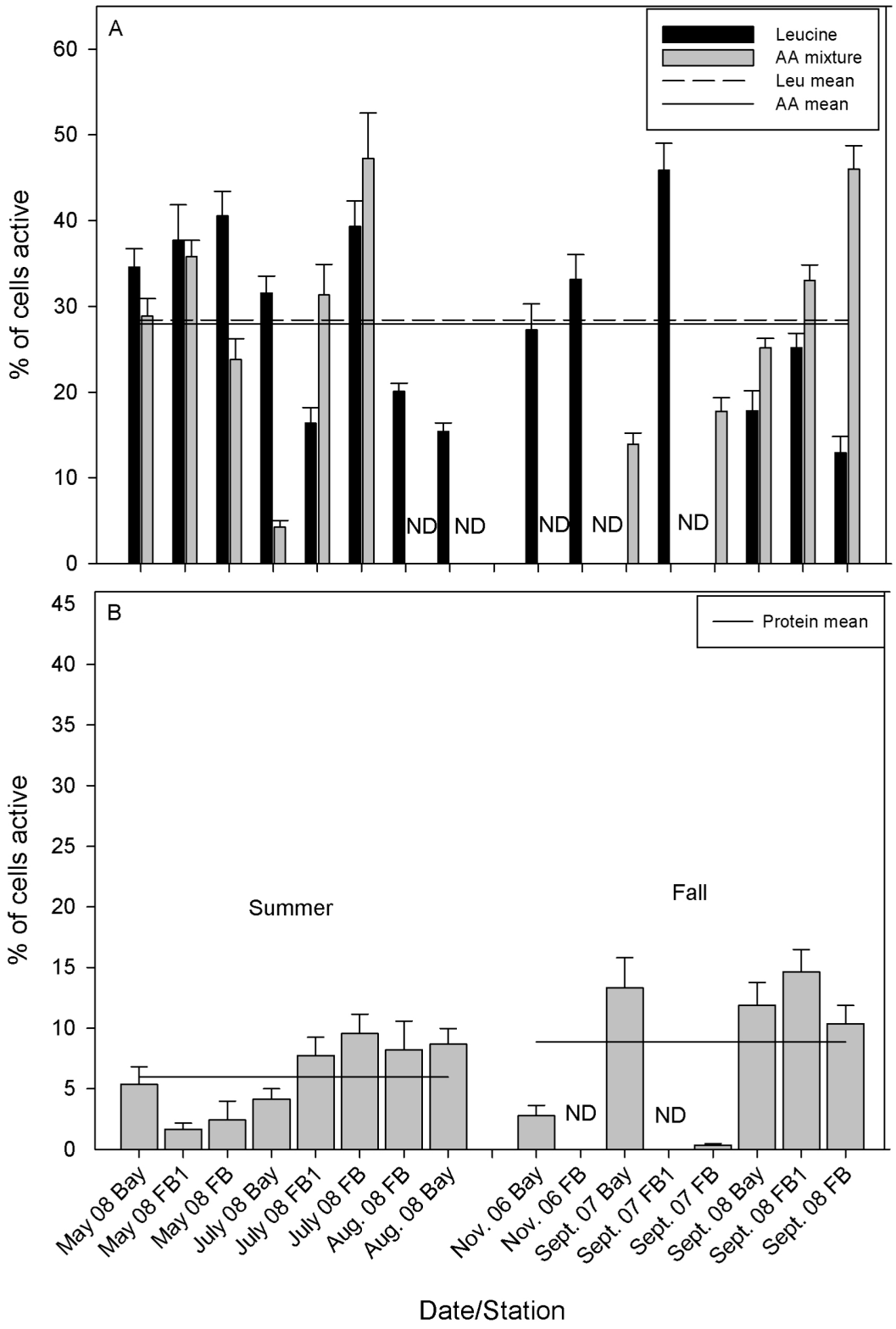

Fig. S1. Incorporation of (A) leucine and an amino acid mixture and (B) protein by the bacterial community exposed to PAR. FB1 samples were taken at station FB during the night. Horizontal lines indicate mean fractions incorporating a compound. Error bars are 1 standard error. ND = no data

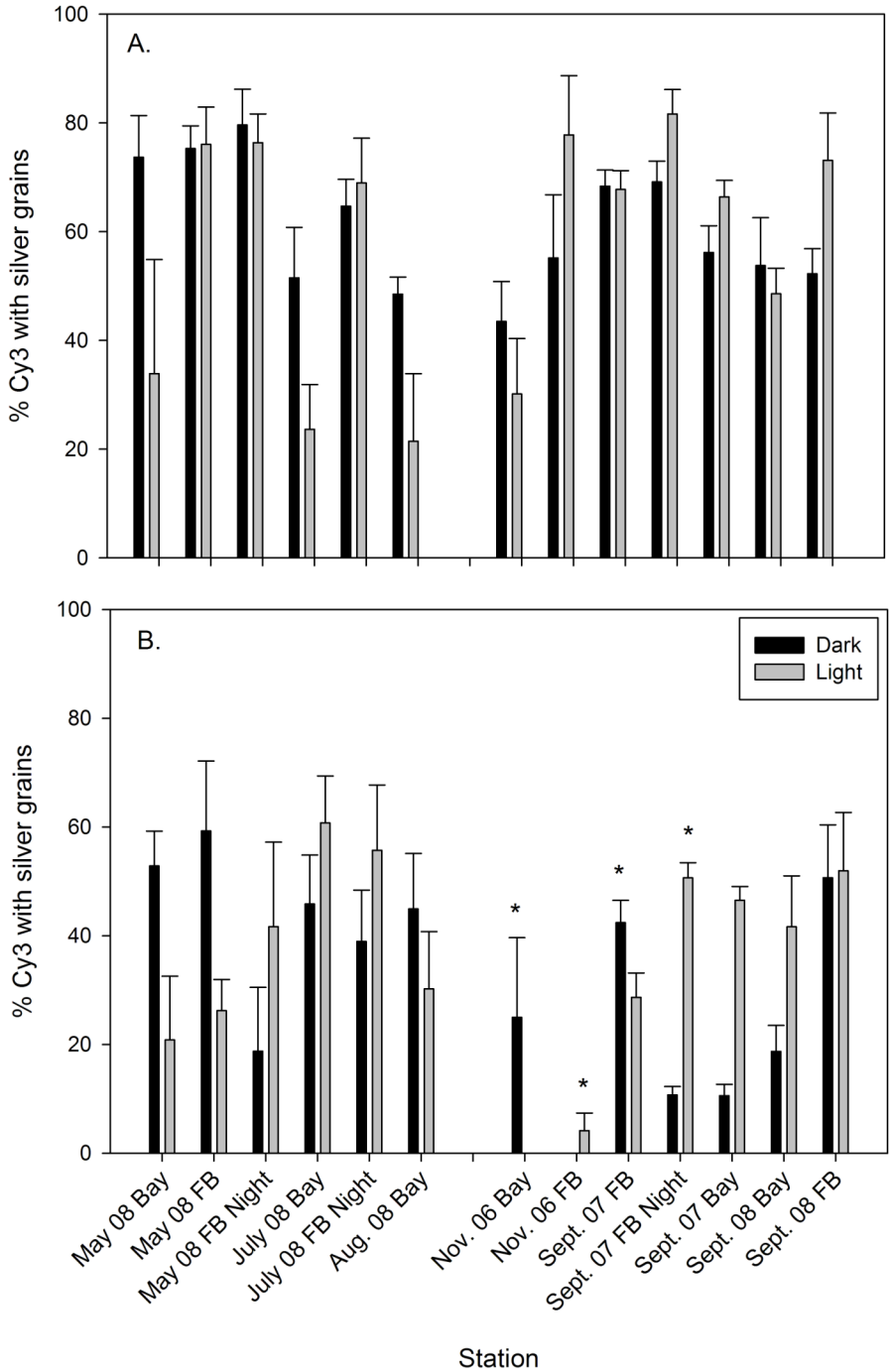

Fig. S2. (A) Alpha- and (B) gammaproteobacterial incorporation of leucine, indicated as percentage cyanine-3 (Cy3)-positive cells with silver grains and grouped by summer then fall samples. Asterisks indicate significant difference between light and dark treatments. Error bars are 1 standard error based on 10 fields of view

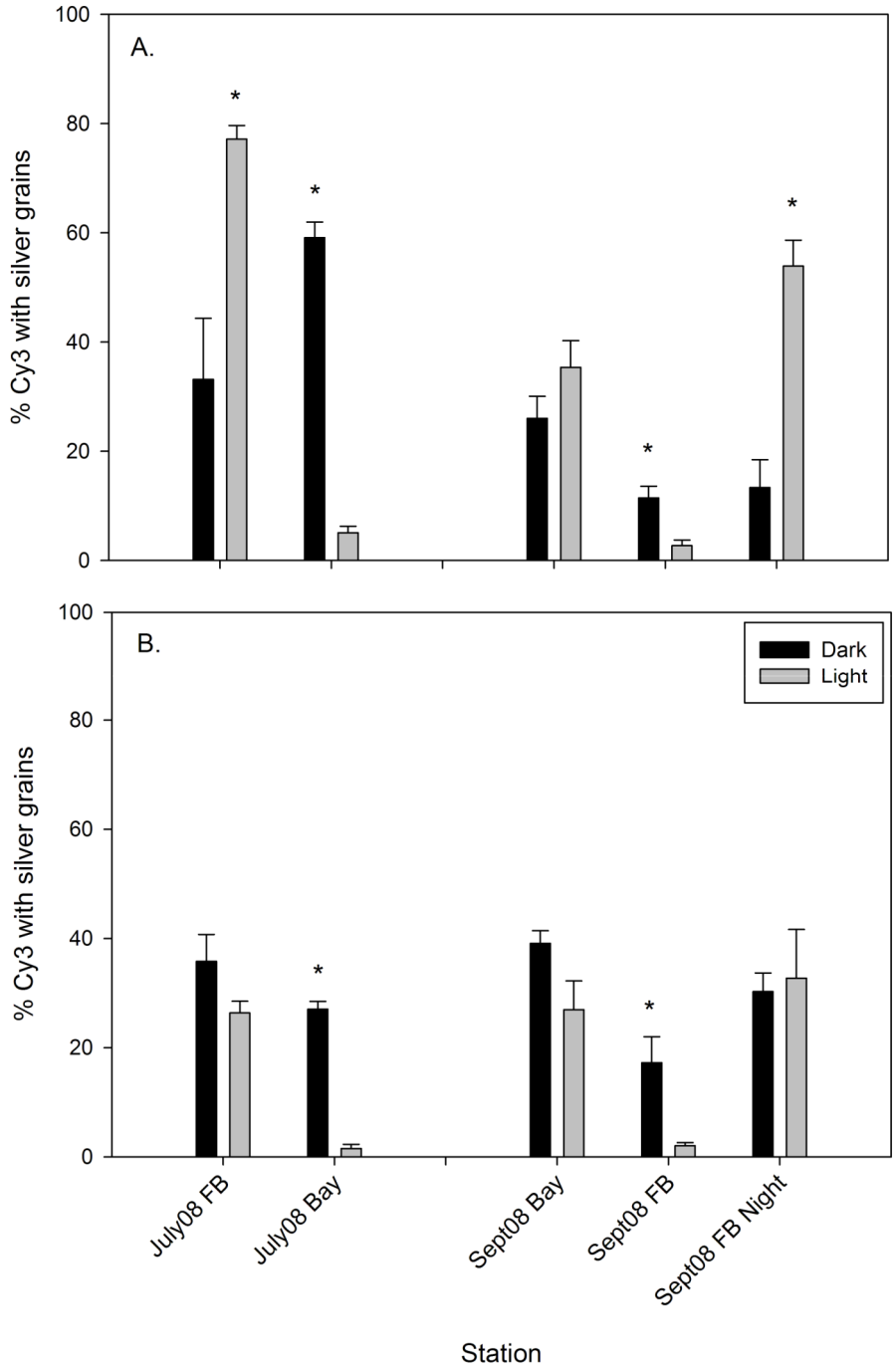

Fig. S3. (A) Alpha- and (B) gammaproteobacterial incorporation of protein, indicated as percentage cyanine-3 (Cy3)-positive cells with silver grains and grouped by summer then fall samples. Asterisks indicate significant difference between light and dark treatments. Error bars are 1 standard error based on 10 fields of view

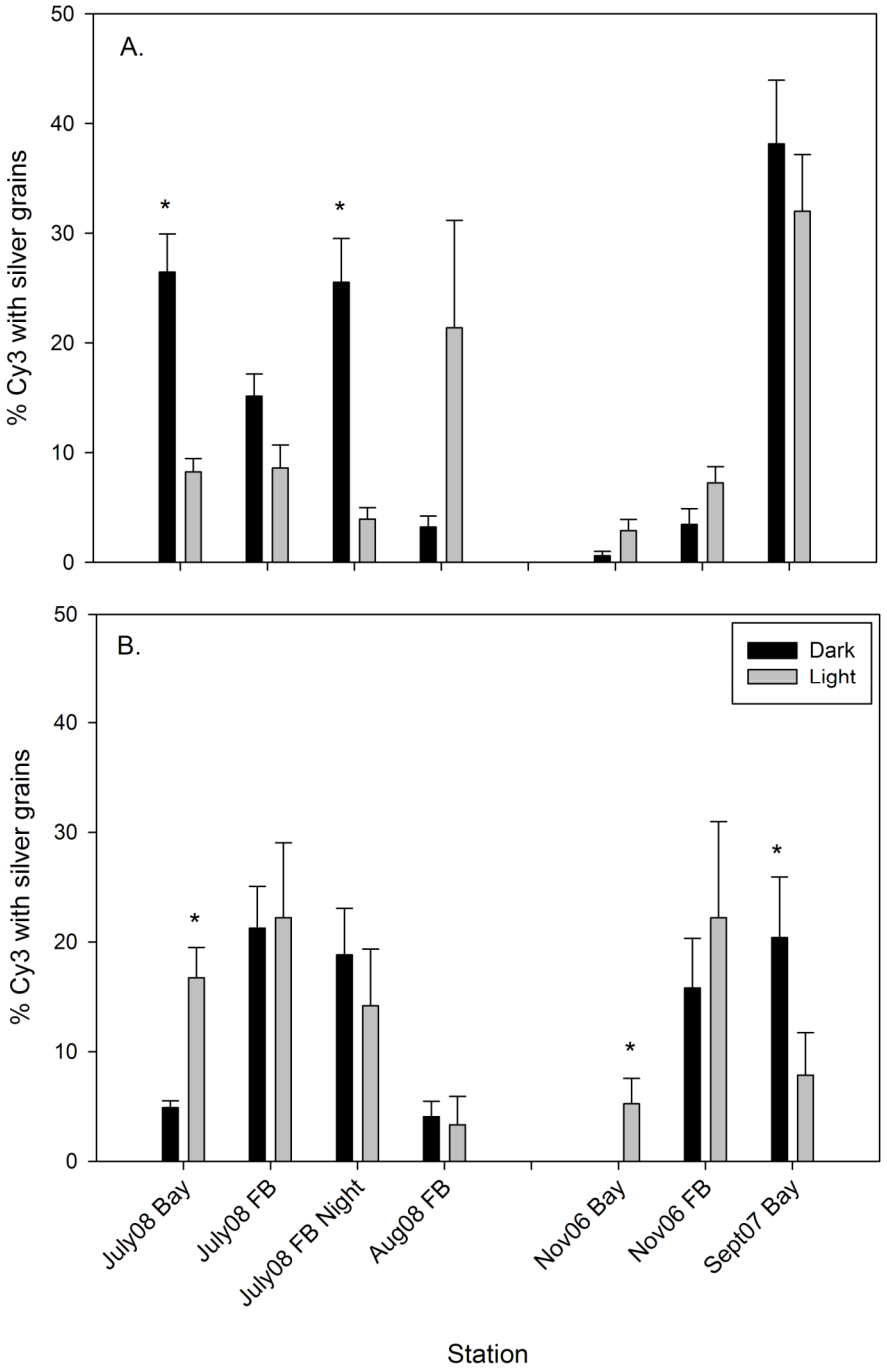

Fig. S4. (A) Alpha- and (B) gammaproteobacterial incorporation of a mixture of 15 amino acids, indicated as percentage cyanine-3 (Cy3)-positive cells with silver grains and grouped by summer then fall samples. Asterisks indicate significant difference between light and dark treatments. Error bars are 1 standard error based on 10 fields of view