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Role of *Chloroflexus*-like bacteria in organic and inorganic carbon uptake rates in a hypersaline microbial mat

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Microbial mats are characterized by high organic and inorganic carbon turnover rates. In order to get an idea of the In situ metabolic activity of *Chloroflexus*-like bacteria we used radiotracer techniques in combination with light spectra manipulation on hypersaline microbial mats from Lake Chiprana (NE Spain). By using a light filter (λ _>_ 700) that inhibits photosystem II but not photosystem I, we tried to clarify the relative importance of autotrophy versus heterotrophy in active anoxygenic phototrophic bacteria. Microscopic analysis revealed that different morphotypes of filamentous *Chloroflexus*-like bacteria were abundant in the photic zone of the microbial mat. Microbial mat uptake rates of ^{14}C-labeled glucose and bicarbonate were quantified under different light conditions. Parallel microsensor measurements were done to evaluate and compare respiration rates under the different light conditions. In conclusion we have found that the *Chloroflexus*-like bacterial community of the hypersaline microbial mats from Lake Chiprana tends to prefer heterotrophic nutrition over autotrophy.