

{rokbox title=|Sampling stations in the North Atlantic :: Image: Authors|
thumb=|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-aurine-major-carbon-and-energy-source-marine-prokaryotes-clifford-et-al-2019-thumb.jpg|}images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-aurine-major-carbon-and-energy-source-marine-prokaryotes-clifford-et-al-2019.jpg{/rokbox}

Elisabeth L. Clifford, Marta M. Varela, Daniele De Corte, Antonio Bode, Victor Ortiz, Gerhard J. Herndl, **Eva Sintes**, 2019. [Taurine Is a Major Carbon and Energy Source for Marine Prokaryotes in the North Atlantic Ocean off the Iberian Peninsula.](#)
Microb Ecol (2019), pp 1–14. <https://doi.org/10.1007/s00248-019-01320-y>

Abstract: Taurine, an amino acid-like compound, acts as an osmoprotectant in many marine metazoans and algae and is released via various processes into the oceanic dissolved organic matter pool. Taurine transporters are widespread among members of the marine prokaryotic community, tentatively indicating that taurine might be an important substrate for prokaryotes in the ocean. In this study, we determined prokaryotic taurine assimilation and respiration throughout the water column along two transects in the North Atlantic off the Iberian Peninsula. Taurine assimilation efficiency decreased from the epipelagic waters from $55 \pm 14\%$ to $27 \pm 20\%$ in the bathypelagic layers (means of both transects). Members of the ubiquitous alphaproteobacterial SAR11 clade accounted for a large fraction of cells taking up taurine, especially in surface waters. Archaea (Thaumarchaeota + Euryarchaeota) were also able to take up taurine in the upper water column, but to a lower extent than Bacteria. The contribution of taurine assimilation to the heterotrophic prokaryotic carbon biomass production ranged from 21% in the epipelagic layer to 16% in the bathypelagic layer. Hence, we conclude that dissolved free taurine is a significant carbon and energy source for prokaryotes throughout the oceanic water column being utilized with similar efficiencies as dissolved free amino acids.

Keywords: Dissolved free taurine, Open ocean, Turnover rates, North Atlantic, Prokaryotic metabolism