
Bioaccumulation and role of UV-absorbing compounds in two marine crustacean species from Patagonia, Argentina

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Experiments were conducted during summer and winter, 2000, and summer 2001 to determine the bioaccumulation and role of UV-absorbing compounds in two crustacean species—the amphipod *Amphitoe valida* and the isopod *Idothea baltica*—from the mid-littoral of the Patagonia coast (Argentina). Macroalgae constituting the diet for these species differed in the concentration of UV-absorbing compounds, from high amounts in the rhodophyte *Polysiphonia* sp. to almost null in chlorophyte species (*i.e.*, *Enteromorpha* sp. and *Codium* sp.). Consequently, transferring and bioaccumulation of these compounds, identified as the mycosporine-like amino acids (MAAs) Porphyra-334 and Shinorine, varied in the crustaceans according to their algal diet, being high when feeding on *Polysiphonia* sp. Survival experiments carried out with crustaceans feeding on poor and rich-MAA diets demonstrated that the role of these compounds in *A. valida* and *I. baltica* was different. In *A. valida*, and based on a significantly higher survival in those individuals feeding on the rhodophyte, MAAs seem to provide an effective protection against UV-B radiation (280–320 nm). In *I. baltica*, mortality was not significantly different in individuals feeding on rich and poor MAA diets. However, judging from the comparatively high amounts of MAAs in eggs/embryos, these compounds might provide protection to the progeny rather than to adult organisms.