

Carbon transfer from dissolved organic carbon to the cladoceran

A mesocosm study illuminated possible transfer pathways for dissolved organic carbon from the water column to zooplankton. Organic carbon was added as ^{13}C enriched glucose to 15 mesocosms filled with natural lake water. Stable isotope analysis and phospholipid fatty acids-based stable isotope probing were used to trace the incorporation of ^{13}C into the cladoceran *Bosmina* and its potential food items. Glucose- ^{13}C was shown to be assimilated into phytoplankton (including fungi and heterotrophic protists), bacteria and *Bosmina*, all of which became enriched with ^{13}C during the experiment. The study suggests that bacteria play an important role in the transfer of glucose- ^{13}C to *Bosmina*. Furthermore, osmotic algae, fungi and heterotrophic protists might also contribute to the isotopic signature changes observed in *Bosmina*. These findings help to clarify the contribution of dissolved organic carbon to zooplankton and its potential pathways.

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