The Microbiome and Isotopic Fractionation

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The paper explores the effect the microbiome has on the observed nitrogen isotopic comosition of gut contents. Using germ free and conventionalized mice, developmental differences in both the bulk and the individaul amino acid $\delta^{15}N$ of gut contents are documented. Further, the involvement of ammonia from microorganisms that populate the gut in the biosynthesis of host protein will be discussed. These results provide one source of proof that even in the transfer of food to consumer, there are intervening organisms that are involved in the fractionation processes. As food choice is known to alter not only the microbial consortia of the gut, but also the physiology of the organ (Daniel et al, 2014), we can anticipate ongoing complexity in interpreting the isotopic composition of consumer tissues.

Daniel, Hannelore, et al. "High-fat diet alters gut microbiota physiology in mice." *The ISME journal* 8.2 (2014): 295.