



Articles of Significant Interest in This Issue

Soman Poisoning Alters Fecal Bacterial Biota and Urine Metabolites

Organic derivatives of phosphorus-containing acids have a wide range of applications in modern society, but they are in excessive use for the control of agricultural and household pests throughout the world and pose a serious health threat to communities. Getnet et al. (e00978-18) described an altered fecal bacterial biota and urine metabolome that follows intoxication with soman, a lipophilic G class chemical warfare nerve agent, demonstrating that fecal bacterial biota and urine metabolites are two separate biospecimens rich in surrogate indicators suitable for monitoring organophosphorus exposure. Assays developed around these observations can be used to enable better diagnostics and administration of neuroprotective therapies of the future.

Particle Size of Dietary Fibers Can Be of Importance

Prebiotic dietary fibers are known to improve the gastrointestinal health of both humans and animals in many different ways. Wheat bran is a readily available by-product of flour processing and is a highly concentrated source of both soluble and insoluble dietary fiber. Vermeulen et al. (e01343-18) showed that applying only 1% of wheat bran, which was reduced in particle size, reduces the concentration of *Enterobacteriaceae* while stimulating the butyrate-producing community. This could imply that in future intervention studies, both in animals and humans, one should take the particle size of dietary fibers into account.

Vector Competence of *Borrelia turicatae* Differs Based on Geographical Populations of *Ornithodoros turicata*

Tick-borne pathogens are emerging throughout the United States, but little is known regarding vector competence. Studies by Krishnavajhala et al. (e01505-18) evaluated vector colonization and transmission of the tick-borne relapsing fever spirochete *Borrelia turicatae*. In this tick-pathogen system, the authors assessed the colonization and transmission from geographically isolated populations of *Ornithodoros turicata* ticks. They discovered that while the tick populations were colonized similarly with *B. turicatae*, successful vector transmission and infection of the murine host significantly differed. This work poses important questions regarding the interplay between tick salivary glands and successful transmission of *B. turicatae*.

Gut Microbes Utilize Dietary Fats for Growth

While a substantial amount of dietary fats escape absorption in the human small intestine and reach the colon, the ability of resident microbiota to utilize these dietary fats for growth has not been investigated in detail. Agans et al. (e01525-18) show that human gut microbes are able to maintain a complex community when supplied with dietary fatty acids as the only nutrient and carbon sources. Such fatty acid-based growth promotes specific microbiota members but resulted in reduced production of short-chain fatty acids and antioxidants, which might potentially have negative health consequences on the host.