

OR151

Bumblebee gut microbiota diversity and their interaction with parasites

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I will present an overview of the diversity of the gut bacteria in European and North American bumblebee species and compare it to the honeybee microbiota. Bumblebees harbor species specific communities, but community composition is less stable than in honeybees and may contain high representations of environmental bacteria in some species. I will look in more detail at the strain diversity of two of the main core gut symbionts, *Snodgrassella alvi* and *Gilliamella apicola*. Symbiont phylogenies match with host phylogeny, but not with geography, but both host switching and horizontal gene transfer can also be found. To look at the potential functional significance of the microbiota, I looked at the interactions of gut bacteria with the trypanosomatid parasite *Crithidia bombi*. Germ-free individuals of both the European bumblebee species *Bombus terrestris*, and the North American species *Bombus impatiens* are highly susceptible to parasitic infections compared to individuals containing a complex microbiota. Furthermore, microbiota from different colonies appear to interact with parasite genotypes in a specific manner. Inoculations with pure cultures of different isolated members of the gut microbiota suggested *Snodgrassella alvi* as the main taxon reducing parasite loads.