

Group 1	Group 2	H	p-value	q-value
Comparison group 1: <i>Apis mellifera</i> vs. <i>Centris decolorata</i> (adults)				
Chao1				
<i>Apis mellifera</i> (n=6)	<i>Centris decolorata</i> (n=10)	0.011765	0.913627	0.913627
Shannon				
<i>Apis mellifera</i> (n=6)	<i>Centris decolorata</i> (n=10)	7.952941	0.004801	0.004801
Comparison group 2 : <i>Centris decolorata</i> females, males, larvae, and brood cell provisions				
Chao1				
gut <i>C. decolorata</i> female (n=6)	larva (n=2)	1.000000	0.317311	0.425447
	gut <i>C. decolorata</i> male (n=4)	0.045455	0.831170	0.831170
	brood cell provision (n=7)	5.897959	0.015158	<u>0.090951</u>
larva (n=2)	gut <i>C. decolorata</i> male (n=4)	0.857143	0.354539	0.425447
	brood cell provision (n=7)	2.142857	0.143235	0.286470
gut <i>C. decolorata</i> male (n=4)	brood cell provision (n=7)	4.321429	0.037635	<u>0.112906</u>
Shannon				
gut <i>C. decolorata</i> female (n=6)	larva (n=2)	2.777778	0.095581	0.143371
	gut <i>C. decolorata</i> male (n=4)	1.136364	0.286422	0.343706
	brood cell provision (n=7)	9.000000	0.002700	0.016199
larva (n=2)	gut <i>C. decolorata</i> male (n=4)	0.214286	0.643429	0.643429
	brood cell provision (n=7)	4.200000	0.040424	<u>0.080848</u>
gut <i>C. decolorata</i> male (n=4)	brood cell provision (n=7)	7.000000	0.008151	0.024453

Supplementary Table 1. Results of alpha diversity differences analyses using Chao1 and Shannon indices. In bold are shown the significant results. The alpha diversity of comparison group 1 (*Apis mellifera* vs. *Centris decolorata*) shows significant differences in diversity using Shannon (p-value=0.004801) but no difference in richness using Chao1 (p-value=0.913627). Concerning comparison group 2 (*Centris decolorata* categories), brood cell provision microbiota shows significant differences both in diversity using Shannon (p-value=0.0027) and richness using Chao1 (p-value=0.008151) with other groups (gut of *C. decolorata* female and male). In addition, the brood cell provision microbiota also shows significant differences in terms of diversity using Shannon index with larva (p-value=0.040424). However, the q-values (adjusted p-values) that account for the percentage of false positive should rather be considered in the case of the larvae group, given its low sample size. All the q-value contradicting the p-value are underlined.

Attention of the reader is drawn to all the groups with samples size $n < 5$ (sample size ≥ 5 being an assumption of Kruskal-Wallis test). For those samples, the H statistic is less well approximated to the chi-square distribution. Therefore, the null hypothesis (rejected when H is larger than the critical cutoff point in chi-square distribution) cannot be accurately tested. These results should thus be confirmed with greater sampling size.