Cuticular hydrocarbon divergence in the jewel wasp Nasonia

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Appendix S1

Species- and sex-specific distribution of CHC compounds

We identified a total of 50 CHC peaks in the two sexes of the four *Nasonia* species (Table S1). Out of these, 30 represented single CHC compounds, 17 were mixtures of two or more CHC compounds co-eluting into single peaks, and three peaks could not be unambiguously identified. In total, the peaks encompassed 75 different CHC compounds (Table S1). 14 were newly identified and added to the previously described compounds of *N. vitripennis*, in six we were able to determine previously ambiguous methyl group positions (Carlson *et al.*, 1999; Steiner *et al.*, 2006). Consistent with the vast majority of studies on hydrocarbons in other insect taxa (Blomquist & Bagneres, 2010), CHC with an odd-numbered carbon backbone were found to be far more numerous and dominant than CHC with an even-numbered backbone most likely due to their chemical properties (Carlson *et al.*, 1998) and biosynthetic origins (Howard & Blomquist, 2005). The results of our study suggest that the *Nasonia* CHC profile differences are mainly quantitative, although some compounds occur only in minute to non-detectable concentrations in certain species or sexes (Table S1). This is in agreement with previous studies showing that CHC profile differences in closely related insect species are generally quantitative (Lockey, 1988). Figure S2 represents a graphical overview of the CHC ratios, comparing males and females of the four species. The CHC compounds are organized in groups, categorized by their respective compound classes. They show how the sexes and each species are characterized by a distinctive CHC ratio distribution. Most ratios of the CHC compound classes appear to greatly fluctuate between species and sexes, e.g. alkenes are most prevalent in *N. vitripennis* males and found only in traces in the other groups, whereas monomethyl-branched alkanes are most abundant in *N. longicornis* males, reducing the portions of the other compound classes in turn (Fig. S2).

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