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Cuticular hydrocarbon divergence in the jewel wasp *Nasonia*

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Table S1 CHC compounds identified from males and females of the four *Nasonia* species and *Trichomalopsis sarophagae* as well as their respective mean quantities[†].

CHC identification	RI	NG ♀	NG ♂	NL ♀	NL ♂	NO ♀	NO ♂	NV ♀	NV ♂	TS ♀	TS ♂
C29	2900	1.33 ± 0.79	1.13 ± 0.6	2.09 ± 0.98	1.68 ± 0.42	1.09 ± 0.16	1.03 ± 0.27	1.77 ± 0.42	1.14 ± 0.34	6.12 ± 1.24	7.76 ± 3.88
9-; 11-; 13-; 15-MeC29	2934	0.41 ± 0.28	0.04 ± 0.11	0.71 ± 0.26	0.12 ± 0.12	1.02 ± 0.23	0.27 ± 0.15	0.4 ± 0.15	0.01 ± 0.02	1.3 ± 0.36	1.49 ± 0.65
7-MeC29	2942	0.41 ± 0.14	0.2 ± 0.14	0.65 ± 0.13	0.54 ± 0.14	0.6 ± 0.11	0.41 ± 0.15	1.62 ± 0.48	0.44 ± 0.1	2.13 ± 0.39	5.77 ± 1.42
5-MeC29	2951	0.63 ± 0.25	0.22 ± 0.16	0.65 ± 0.23	0.45 ± 0.14	0.62 ± 0.13	0.45 ± 0.14	0.66 ± 0.2	0.3 ± 0.07	0.87 ± 0.25	2.12 ± 0.68
3-MeC29	2973	0.28 ± 0.32	0.07 ± 0.12	0.88 ± 0.3	0.34 ± 0.12	0.44 ± 0.22	0.16 ± 0.11	0.22 ± 0.12	0.02 ± 0.03	1.5 ± 0.34	0.74 ± 0.3
15,17-DiMeC29	2982	0.14 ± 0.08	0.03 ± 0.04	0.1 ± 0.04	0.03 ± 0.04	0.39 ± 0.2	0.18 ± 0.15	0.22 ± 0.14	0.05 ± 0.06	0.29 ± 0.13	0.36 ± 0.13
Unknown	2993	0.09 ± 0.11	0.39 ± 0.75	0.13 ± 0.17	0.14 ± 0.17	0.45 ± 0.53	0.62 ± 0.55	0.14 ± 0.18	0.16 ± 0.1	1.18 ± 0.18	0.88 ± 0.24
C30	3000	0.57 ± 0.13	0.65 ± 0.17	0.49 ± 0.15	0.52 ± 0.18	0.53 ± 0.15	0.46 ± 0.17	0.64 ± 0.1	0.5 ± 0.13	0.32 ± 0.1	0.42 ± 0.18
7-MeC30	3040	0.12 ± 0.1	0.27 ± 0.19	0.23 ± 0.12	0.52 ± 0.11	0.22 ± 0.12	0.31 ± 0.08	0.48 ± 0.13	0.4 ± 0.08	0.87 ± 0.12	1.57 ± 0.44
5-MeC30*	3049	0.08 ± 0.08	0.04 ± 0.05	0	0.09 ± 0.09	0.08 ± 0.06	0.07 ± 0.08	0.07 ± 0.07	0.07 ± 0.04	0.2 ± 0.09	0.09 ± 0.09
9-C31ene	3074	0.13 ± 0.14	0.11 ± 0.13	0	0	0.13 ± 0.07	0.3 ± 0.14	0.41 ± 0.26	2.37 ± 0.66	0.23 ± 0.09	0.16 ± 0.13
7-C31ene	3083	0.02 ± 0.03	0.03 ± 0.05	0	0	0.06 ± 0.04	0.1 ± 0.06	0.14 ± 0.06	0.45 ± 0.15	0.04 ± 0.05	0.07 ± 0.08
C31	3100	12.88 ± 2.27	14.21 ± 1.47	9.16 ± 1.87	9.02 ± 0.8	8.34 ± 1.01	10.83 ± 2.39	10.02 ± 1.6	10.29 ± 2.46	13.06 ± 2.44	9.88 ± 3.58
9-; 11-; 13-; 15-MeC31	3131	6.57 ± 0.69	3.61 ± 0.98	6.5 ± 1.13	3.49 ± 0.69	6.75 ± 0.6	4.38 ± 0.5	8.08 ± 0.59	2.69 ± 1.23	9.58 ± 0.85	0.58 ± 1.09
7-MeC31	3141	6.49 ± 0.93	12.69 ± 2.78	9.33 ± 1.49	23.33 ± 2.03	6.57 ± 0.74	12.22 ± 1.85	9.98 ± 1.39	15.2 ± 1.7	11.85 ± 1.62	31 ± 3.37
5-MeC31	3149	4.89 ± 0.58	6.52 ± 0.58	3.83 ± 0.47	7.92 ± 0.72	4.65 ± 0.6	6.3 ± 0.86	3.77 ± 0.63	6.43 ± 0.65	5.83 ± 0.67	8.7 ± 0.9
9,21-; 11,15-DiMeC31	3158	0.38 ± 0.17	0.07 ± 0.1	0.46 ± 0.15	0	0.59 ± 0.19	0.18 ± 0.16	0.95 ± 0.49	0.07 ± 0.09	1.15 ± 0.15	0.08 ± 0.27
7,11-DiMeC31	3167	1.03 ± 0.35	0.47 ± 0.3	1.94 ± 0.43	1.26 ± 0.17	1.35 ± 0.1	1 ± 0.19	1.55 ± 0.21	0.93 ± 0.22	3.04 ± 0.31	2.1 ± 0.81
7,23-DiMeC31 (+ traces of 3-MeC31)	3175	6.2 ± 1.29	4.67 ± 1.46	5.78 ± 1.43	3.72 ± 0.48	4.51 ± 0.61	3.56 ± 0.5	4.53 ± 0.65	2.65 ± 0.26	8.18 ± 2.32	4.76 ± 1.79
7,9-DiMeC31*	3177	1.89 ± 0.59	1.33 ± 0.6	1.26 ± 0.66	2.45 ± 0.14	2.36 ± 0.25	1.85 ± 0.22	1.31 ± 0.17	2.53 ± 0.49	1.21 ± 1.46	3.56 ± 1.61
5,25-DiMeC31	3187	0.09 ± 0.09	0.19 ± 0.14	0.25 ± 0.11	0.69 ± 0.08	0.21 ± 0.04	0.29 ± 0.08	0.37 ± 0.05	0.62 ± 0.17	0.37 ± 0.34	1.1 ± 0.74
3,15-DiMeC31	3197	1.57 ± 0.43	0.9 ± 0.14	0.93 ± 0.12	0.6 ± 0.15	1.34 ± 0.08	0.84 ± 0.12	0.88 ± 0.06	0.67 ± 0.09	1.44 ± 0.34	0.71 ± 0.24
7*-; 8-MeC32*	3234	0.89 ± 0.19	0.57 ± 0.18	0.96 ± 0.2	0.48 ± 0.16	0.62 ± 0.21	0.41 ± 0.11	0.87 ± 0.22	0.24 ± 0.12	0.87 ± 0.27	0.81 ± 0.17
5*-; 6-MeC32	3244	0.1 ± 0.08	0.35 ± 0.17	0.05 ± 0.09	0.57 ± 0.29	0.29 ± 0.13	0.42 ± 0.15	0.29 ± 0.14	0.46 ± 0.16	0.13 ± 0.14	0.37 ± 0.2

Table S1 (cont.)

CHC identification	RI	NG ♀	NG ♂	NL ♀	NL ♂	NO ♀	NO ♂	NV ♀	NV ♂	TS ♀	TS ♂
4-MeC32*	3261	1.28 ± 0.2	1.11 ± 0.73	1.79 ± 0.36	0.73 ± 0.17	1.24 ± 0.43	1.00 ± 0.53	1.00 ± 0.24	0.38 ± 0.13	1.47 ± 0.49	0.8 ± 0.22
9-C33ene	3273	0.33 ± 0.15	0.2 ± 0.16	0.4 ± 0.2	0.08 ± 0.09	0.34 ± 0.17	0.41 ± 0.28	0.3 ± 0.13	2.15 ± 0.7	0.04 ± 0.11	0
7-C33ene	3281	0.21 ± 0.22	0.13 ± 0.13	0.02 ± 0.05	0.03 ± 0.05	0.33 ± 0.26	0.37 ± 0.2	0.34 ± 0.15	1.39 ± 0.55	0.29 ± 0.25	0.13 ± 0.19
C33	3300	0.9 ± 0.16	1.38 ± 0.29	0.44 ± 0.1	0.45 ± 0.09	0.62 ± 0.07	1.21 ± 0.38	0.48 ± 0.11	1.6 ± 0.3	0.25 ± 0.1	0.14 ± 0.09
9*-; 11-; 13-; 15-MeC33	3330	10.22 ± 1.11	6.98 ± 0.49	10.15 ± 1.26	6.05 ± 0.39	9.89 ± 0.61	6.64 ± 0.43	7.94 ± 0.71	3.59 ± 0.39	6.91 ± 0.66	3.22 ± 0.51
7-MeC33	3339	1.38 ± 0.25	3.63 ± 0.73	1.37 ± 0.1	3.49 ± 0.62	1.4 ± 0.26	3.21 ± 0.59	1.26 ± 0.2	3.93 ± 0.3	0.74 ± 0.33	0.96 ± 0.16
7,19-; 11,15-; 11,21-; 13,17-; 15,19-DiMeC33	3356	5.42 ± 0.46	4.84 ± 0.33	8.53 ± 0.75	5.37 ± 0.41	7.97 ± 0.62	6.8 ± 0.51	7.79 ± 1.5	3.57 ± 0.91	5.83 ± 0.93	2.39 ± 0.57
7,23-DiMeC33	3370	1.47 ± 0.39	2.14 ± 0.51	1.92 ± 0.55	4.59 ± 2.39	2.2 ± 0.3	2.99 ± 0.38	3.65 ± 1.37	3.3 ± 2.95	0.98 ± 0.61	1.63 ± 1.16
5,9-DiMeC33	3376	6.52 ± 0.65	6.04 ± 1.06	5.73 ± 0.89	5.09 ± 2.49	7.94 ± 0.67	6.5 ± 0.6	5.07 ± 1.14	8.97 ± 4.69	3.39 ± 0.81	2.1 ± 0.7
3,15-; 3,17-DiMeC33	3396	1.83 ± 0.32	1.52 ± 0.3	1.42 ± 0.26	0.64 ± 0.3	1.86 ± 0.23	1.28 ± 0.35	1.37 ± 0.23	2.1 ± 0.68	0.92 ± 0.26	0.36 ± 0.28
3,7,11-; 5,9,13-; 5,9,21-TriMeC33*	3422	1.85 ± 0.9	0.99 ± 0.67	0.59 ± 0.34	1.68 ± 0.65	0.71 ± 0.56	1.82 ± 1.02	0.73 ± 0.12	0.8 ± 0.37	0.4 ± 0.25	0.08 ± 0.14
3,7,11,15-TetraMeC33	3453	4.2 ± 0.8	3.65 ± 0.77	1.74 ± 0.22	0.72 ± 0.16	2.61 ± 0.3	1.95 ± 0.37	1.34 ± 0.24	0.65 ± 0.22	0.68 ± 0.31	0.23 ± 0.15
10-MeC34*	3477	0.61 ± 0.27	0.49 ± 0.22	0.5 ± 0.16	0.15 ± 0.12	0.65 ± 0.2	0.44 ± 0.3	0.26 ± 0.15	0.77 ± 0.3	0.18 ± 0.17	0.03 ± 0.09
11-; 13-; 15-; 17-MeC35	3524	2.62 ± 0.5	2.41 ± 0.18	2.74 ± 0.36	1.82 ± 0.24	2.3 ± 0.32	2.2 ± 0.4	2.67 ± 0.34	1.93 ± 0.26	0.69 ± 0.32	0.38 ± 0.16
7-MeC35	3534	0.42 ± 0.21	0.74 ± 0.19	0.23 ± 0.2	0.26 ± 0.1	0.31 ± 0.12	0.5 ± 0.1	0.12 ± 0.11	0.87 ± 0.18	0	0
11,15-; 13,17-; 15,19-DiMeC35	3549	5.69 ± 1.11	5.33 ± 0.71	8.04 ± 0.99	4.36 ± 0.56	7.6 ± 0.42	6.73 ± 0.74	6.38 ± 1.2	2.29 ± 0.39	2.33 ± 0.73	0.7 ± 0.41
7,15-; 7,19-; 7,23-DiMeC35	3563	0.89 ± 0.2	1.95 ± 0.36	0.86 ± 0.11	1.57 ± 0.36	1.16 ± 0.13	1.85 ± 0.22	1.99 ± 0.23	4.92 ± 1.24	0.33 ± 0.22	0.34 ± 0.3
5,17-DiMeC35	3572	2.68 ± 0.74	3.14 ± 0.5	3.34 ± 0.37	2.51 ± 0.41	3.04 ± 0.19	2.84 ± 0.44	2.97 ± 0.53	3.98 ± 0.68	0.97 ± 0.46	0.44 ± 0.35
5,9,x-TriMeC35*	3603	0.58 ± 0.18	0.63 ± 0.2	0.4 ± 0.15	0.22 ± 0.17	0.62 ± 0.13	0.49 ± 0.24	0.61 ± 0.23	0.75 ± 0.35	0.12 ± 0.15	0
Unknown	3625	0.57 ± 0.21	0.5 ± 0.14	0.21 ± 0.06	0.09 ± 0.07	0.31 ± 0.12	0.28 ± 0.22	0.24 ± 0.1	0.16 ± 0.08	0.2 ± 0.15	0.04 ± 0.09
Unknown	3638	0.58 ± 0.24	0.53 ± 0.14	0.25 ± 0.09	0.09 ± 0.08	0.41 ± 0.17	0.36 ± 0.29	0.36 ± 0.14	0.07 ± 0.08	0.09 ± 0.1	0
15-; 17-; 19-MeC37	3721	0.36 ± 0.18	0.36 ± 0.12	0.26 ± 0.09	0.14 ± 0.06	0.33 ± 0.16	0.37 ± 0.22	0.33 ± 0.08	0.27 ± 0.09	0.05 ± 0.05	0.01 ± 0.03
11,25-; 11,27-DiMeC37	3745	1.14 ± 0.45	1.15 ± 0.36	1.63 ± 0.47	0.82 ± 0.23	1.53 ± 0.41	1.48 ± 0.35	1.91 ± 0.5	0.54 ± 0.19	0.33 ± 0.18	0.06 ± 0.08
7,21-DiMeC37	3764	0.15 ± 0.11	0.38 ± 0.17	0.08 ± 0.08	0.14 ± 0.11	0.22 ± 0.12	0.42 ± 0.23	0.44 ± 0.1	0.99 ± 0.35	0.04 ± 0.05	0.03 ± 0.05
5,15*-; 5,17-DiMeC37*	3768	0.65 ± 0.26	0.62 ± 0.17	0.65 ± 0.2	0.35 ± 0.16	0.79 ± 0.29	0.73 ± 0.27	0.56 ± 0.23	0.55 ± 0.23	0.14 ± 0.14	0.02 ± 0.04

[†]Identifications of CHC compounds, retention indices (RI), and their mean relative abundances (%) as well as standard deviations (\pm %) for each respective sex and species are given.

CHC compounds were identified based on their retention indices and respective mass spectra, where possible (Carlson *et al.*, 1998). Asterisks (*) indicate newly identified compounds, numbers in bold newly characterized methyl group positions not previously reported in *N. vitripennis* (Carlson *et al.*, 1999; Steiner *et al.*, 2006).

NV = *N. vitripennis* ($N_f = 19$, $N_m = 13$), NG = *N. giraulti* ($N_f = 18$, $N_m = 14$), NO = *N. oneida* ($N_f = 17$, $N_m = 11$), NL = *N. longicornis* ($N_f = 17$, $N_m = 11$), TS = *Trichomalopsis sarcophagae* ($N_f = 14$, $N_m = 12$). N_f refers to the sample size for females, N_m to the sample size for males, 150 CHC profiles analyzed in total for obtaining sex- and species-specific means and standard deviations.

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