

CHEM**BIO**CHEM

Supporting Information

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Supporting Information

for

A Versatile Transport Network for Sequestering and Excreting Plant Glycosides in Leaf Beetles Provides an Evolutionary Flexible Defense Strategy

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Absolute amounts of the thioglucosides which were applied as equimolar mixtures were calculated after larval feeding, microinjections into the larval hemolymph and in vitro incubation of gut tissue or Malpighian tubules. Data are presented as nmol thioglucoside per mg secretion, hemolymph, frass, or tissue dry weight + 85% CI

Table 1. Composition of larval secretion and frass (nmol mg⁻¹ + 95% CI) after feeding on leafs painted with an equimolar thioglucoside mixture.

	8-OH-Ger-S-Glc	Thiosalicin	Phet-S-Glc
<i>P. cochleariae</i> secretion	13.98 + 4.89	1.31 + 0.78	0.41 + 0.30
<i>C. populi</i> secretion	0.29 + 0.13	29.84 + 14.68	1.96 + 0.73
<i>P. cochleariae</i> frass	4.55 + 2.25	14.82 + 5.94	2.42 + 1.40
<i>C. populi</i> frass	0.63 + 0.65	1.81 + 1.67	1.02 + 0.98

Table 2. Composition of larval secretion and frass (nmol mg⁻¹ + 95% CI) after microinjection of an equimolar thioglucoside mixture into larval hemolymph of *Phaedon cochleariae*.

	8-OH-Ger-S-Glc	Thiosalicin	Phet-S-Glc
<i>P. cochleariae</i> secretion 1 h	2.83 + 0.83	n.d. ^[a]	0.08 + 0.16
<i>P. cochleariae</i> secretion 6 h	3.32 + 1.27	0.30 + 0.36	0.10 + 0.09

<i>P. cochleariae</i> secretion 24 h	2.68 + 1.11	0.15 + 0.19	n.d. ^[a]
<i>P. cochleariae</i> secretion 48 h	2.63 + 0.74	n.d. ^[a]	n.d. ^[a]
<i>P. cochleariae</i> frass 1 h	5.19 + 1.69	3.16 + 1.34	7.96 + 2.20
<i>P. cochleariae</i> frass 6 h	9.49 + 6.16	15.75 + 6.58	13.35 + 6.17
<i>P. cochleariae</i> frass 24 h	0.60 + 0.48	4.00 + 1.85	1.96 + 1.72
<i>P. cochleariae</i> frass 48 h	0.44 + 0.29	2.05 + 0.78	1.88 + 1.01
[a] substance not detected			

Table 3. Composition of larval secretion and frass (nmol mg⁻¹ + 95% CI) after microinjection of an equimolar thioglucoside mixture into the hemolymph of *Chrysomela populi*.

	8-OH-Ger-S-Glc	Thiosalicin	Phet-S-Glc
<i>C. populi</i> secretion 1 h	0.002 + 0.004	0.34 + 0.16	0.02 + 0.01
<i>C. populi</i> secretion 6 h	0.008 + 0.009	0.51 + 0.36	0.05 + 0.04
<i>C. populi</i> secretion 24 h	0.01 + 0.00	0.70 + 0.24	0.04 + 0.02
<i>C. populi</i> secretion 48 h	0.01 + 0.00	0.92 + 0.53	0.03 + 0.02
<i>C. populi</i> frass 1 h	0.66 + 0.42	0.17 + 0.30	0.97 + 0.76
<i>C. populi</i> frass 6 h	0.27 + 0.15	0.08 + 0.06	0.66 + 0.45
<i>C. populi</i> frass 24 h	0.26 + 0.15	0.05 + 0.08	0.45 + 0.36
<i>C. populi</i> frass 48 h	0.26 + 0.09	0.01 + 0.01	0.39 + 0.13

Table 4. Accumulation of thioglucosides in the larval gut after in vitro incubation (nmol mg⁻¹ + 95% CI).

	8-OH-Ger-S-Glc	Thiosalicin	Phet-S-Glc
<i>P. cochleariae</i>	0.13 + 0.06	0.20 + 0.19	0.30 + 0.12
<i>C. populi</i>	0.11 + 0.01	0.14 + 0.08	0.07 + 0.03

Table 5. Accumulation of thioglucosides in the Malpighian tubules after in vitro incubation (nmol mg⁻¹ + 95% CI).

	8-OH-Ger-S-Glc	Thiosalicin	Phet-S-Glc
0.1 mM	0.47 + 0.22	0.35 + 0.54	1.84 + 0.61
0.5 mM	0.75 + .033	0.44 + 0.40	1.63 + 0.54
1.0 mM	3.98 + 2.12	0.78 + 0.32	4.92 + 2.55