**Foraging and vitellogenin gene expression patterns in eusocial sweat bees using qRT-PCR**

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Both the foraging (for) and vitellogenin (vg) genes are associated with differences in behaviours between castes of social insects. These two genes are involved in foraging and egg-laying behaviour, which is one of the major hallmarks of caste differentiation in primitively eusocial sweat bees, such as Lasioglossum laevissimum. We hypothesize that in L. laevissimum, actively foraging individuals have high expression levels of for, while non-foragers have low levels, and that individuals with ovary development will have high expression of vg, while individuals with no developed ovaries will have low levels. To investigate this hypothesis, we designed a quantitative RT-PCR (qRT-PCR) study aimed at comparing expression patterns in queens and workers. As a baseline we evaluated for and vg expression in newly eclosed males with respect to eight control genes (actin, arginine kinase, EF-1alpha, GAPDH, RpL13, Rpl32, RpP2, and RpS5); for and vg gene expression levels were similar in heads, thoraces, and abdomens. We then analysed summer workers (females) caught on the wing; for expression levels were highest in thoraces and lowest in abdomens, while vg expression was similar across tissues. Comparisons between queens and workers will likely reveal caste-specific patterns in for and vg gene expression.