

Up-regulation of a transferrin gene in response to fungal infection in *Solenopsis invicta*

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The cDNA of a gene with significant homology to insect transferrins was identified and sequenced from *Solenopsis invicta*. Translation of the open reading frame yielded a protein with a molecular mass of 77.3 kDa and pI value of 5.66, characteristics consistent with transferrin proteins. Quantitative PCR was used to examine the expression of the *S. invicta* transferrin. Among different developmental stages selected, early pupae exhibited the highest expression level, with significantly lower expression levels in late larvae, queens, and workers. Expression was induced in worker ants exposed to varying doses of *Beauveria bassiana* conidia. Killed conidia did not elicit an inductive response. Worker ants exposed to juvenile hormone exhibited a significantly lower relative expression of *S. invicta* transferrin compared with an untreated control. However, expression of *S. invicta* transferrin was not significantly different in ants exposed to 20-hydroxyecdysone. Genes, like the *S. invicta* transferrin, responding to pathogen attack may provide a unique approach for the discovery of microbial control organisms from fire ants.

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