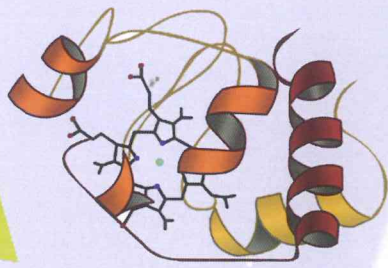
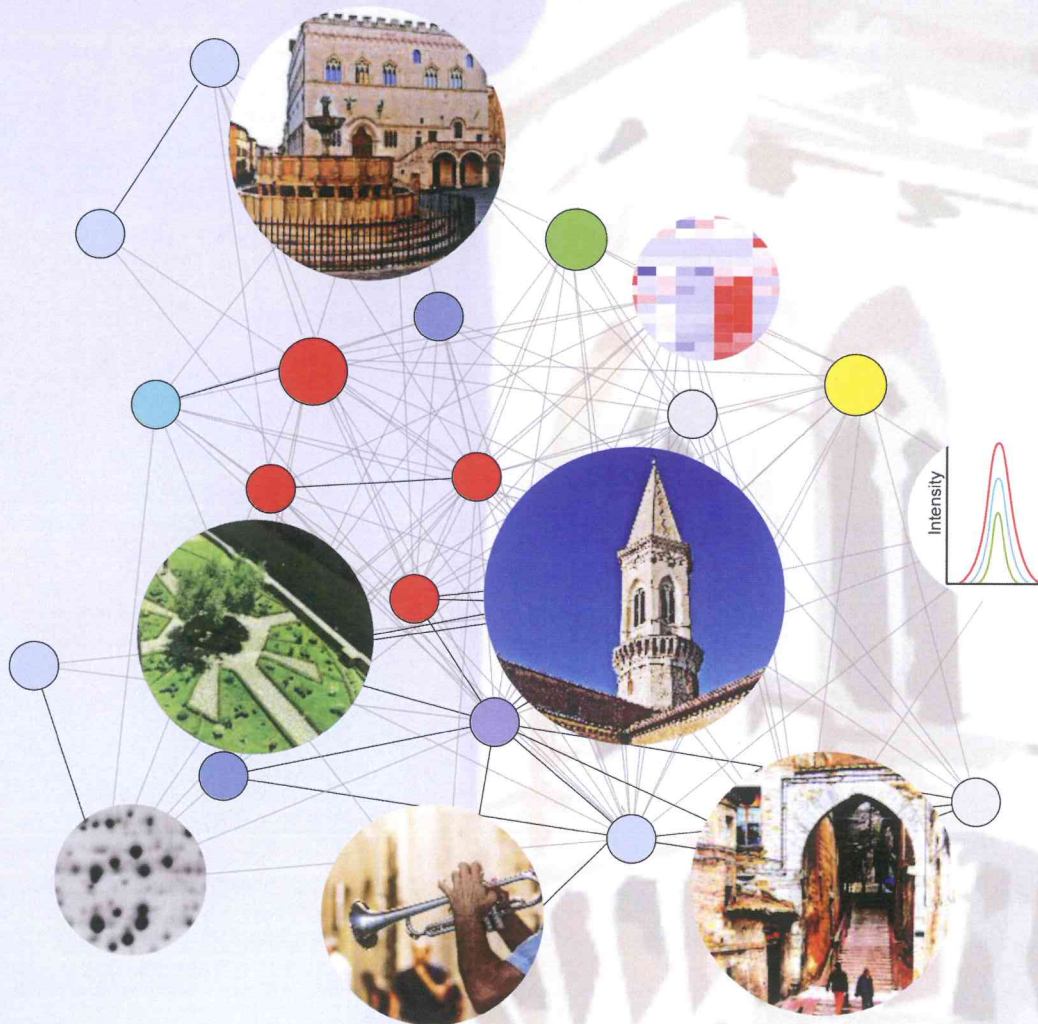


ItPA



Italian Proteomics Association XI Annual conference Perugia 2016, May 16th-19th



UNIVERSITÀ DEGLI STUDI
DI PERUGIA



dsa3



P-I-04

Influence of two different Varroa treatments on the most abundant proteins of honey bee hemolymph

Enea Ferlizza^{a*}, Riccardo Cabbri^a, Giulia Andreani^a, Elisa Bellei^b, Aurora Cuoghi^b, Emanuela Monari^b, Gloria Isani^a

^a Department of Veterinary Medical Sciences, University of Bologna, Ozzano, Italy

^b Department of Diagnostic, Clinical and Public Health Medicine, University of Modena and Reggio Emilia, Modena, Italy

One of the main biotic threats to honey bees (*Apis mellifera*) is the ectoparasitic mite *Varroa destructor*. A highly effective acaricide treatment is needed to obtain successful wintering of the colonies. The two main techniques, brood interruption and brood removal, rely both on obtaining a broodless period to treat on phoretic mites only. Little is known on the impact of the abovementioned treatments on the colony and there is a real need for biomarkers to assess honey bee health status and welfare. Particularly promising seems to be the evaluation of vitellogenin in the hemolymph of a pool of bees; this glycolipoprotein is the main hemolymph protein, already proposed as a colony vitality parameter in other studies.

Therefore, the aim of this research was to evaluate the effect of the abovementioned techniques on vitellogenin and other abundant hemolymph proteins.

Two groups (brood interruption, BI; brood removal, BR) of five colonies each underwent acaricide treatment. Hemolymph from 30 bees was sampled and pooled for each colony at four critical timepoints. All samples underwent SDS-PAGE. Preliminary 2DE was also performed. The most abundant protein bands and spots were excised from the gels, trypsin-digested and analysed by mass spectrometry for protein identification.

Vitellogenin was successfully isolated and identified by mass spectrometry. Our data are confirmatory of the abundance of this protein in the hemolymph of worker bees and differences were found depending on the treatment. Apolipoporphins, transferrin, hexamerin, major royal jelly and prophenoloxidase were also identified as major components of honey bee hemolymph.

* *Corresponding Author*: Enea Ferlizza

Dept. of Veterinary Medical Sciences – University of Bologna

Via Tolara di sopra, 50, 40064 Ozzano (BO) Italy

Tel.: +39 051 2097023

E-mail address: enea.ferlizza2@unibo.it