

## Comparative analysis of Residual Quantities of Imidazole in Natural Honey

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**Background.** Honey is one of the most significant foods since it contains many essential nutrients for the human body. Honey is made by bees, which are the primary producers of honey. Bees are identical to other organisms that can be infected with bacteria, fungi, or a variety of other illnesses and pathogens, that may threaten to many bees and consequently affecting natural honey production.

Veterinary medicines are used in the treatment of bees by beekeepers and are also considered one of the methods for reducing the annual death rate of bees due to diseases or other forms of infection, taking into account whether or not these medicines meet the European Union standards for veterinary medicines.

Chemical residues of veterinary medicines such as Imidazole derivatives, Terramycin, Apistan, Fumagilin, etc are used in the treatment of bees and are one of the issues that may cause an increase in the chances of bee population changes, or one of the problems that may cause issues at the consumer level, as well as in the event that the residues of the medicines are transferred to the beehives directly or indirectly through placing these veterinary drugs in the diet of bees.

The aim of the work was estimation of the existence of Imidazole group compounds: Clotrimazol as well as Metranidazol in the two samples of honey both from the main supermarkets in the capital city of Armenia-Yerevan.

**Material and methods.** For identifying and quantifying of imidazole derivatives, we used a modern technique to determine those residues in honey by HPLC. The experiment were based on dissolving of 200 mg of two different samples of honey separately in 5 ml of water in glass flask; 0.1 g of Metranidazole was dissolved in 5 ml of water in glass flask; 0.05 g of

Clotrimazole was dissolved in 5 ml of acetonitrile. For the experimental analyses we used the Shimadzu LC system, which consists from the Controller CBM - 20A, Pump A-LC-20AD, Autosampler –SIL-20 A, Oven, CTO-20A, PDA-SPD-M20A HPLC was containing the column C18 with pore size 5mcm , size parameters of the column were equal to 4.6\*250mm.

**Results and conclusions.** The analyses of honey were performed by HPLC system and wavelength equal to 237 nm and 220 nm were applied. The main peak of Clotrimazole in our applied conditions appeared at 2.2 minute. The peak of Metranidazole in settled by us conditions appeared at 0.8 minute. After addition of Metranidazole into the solution of honey it appeared on the chromatogram at 0,4 minute. After addition of Clotrimazole into the solution of honey it appeared on the chromatogram at 0,8 minute. The peak of honey was appearing later than mentioned medicines. Both samples of honey didn't contain Clotrimazole as well as Metranidazole.

**Key words:** honey, Imidazole, Metranidazole, Clotrimazole, HPLC