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## **AN ENTOMOLOGICAL STUDY OF THE TRANSFER OF MELATONIN, NICOTINE, AND ZERANOL FROM TISSUE TO MAGGOT**

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Throughout daily life humans consume substances that are metabolized by the body and eventually secreted. When death occurs metabolism stops and substances are trapped inside the body for a limited amount of time. If the body is left out, eventually flies and other bugs will make their way to it and lay eggs. When the eggs hatch, maggots begin to eat the tissue of the body. Since the tissue contains the consumed substances they should be transferred to the maggots. This is important in forensics because any substances that have dissipated from the tissue of the body may still be found in the maggots. If the maggots are collected they can be analyzed to determine what substances they contain. Knowing what can and cannot be transferred is important, as well as knowledge of how long it will take different substances to dissipate from the body. To imitate dead human tissue, skinned pig muscle was soaked in solutions of melatonin, nicotine, and zeranol (an animal steroid). Maggots were introduced and allowed to feed on the tissue for 72 hours. Samples of maggots were collected

every 12 hours, as well as a sample of tissue at the beginning and end of the experiment. All samples were digested in nitric acid. Analysis on the GC-MS of each sample was compared to standards to identify the substances they contained.