Title:	NMR-based Metabolomics Study of Age-related Immune Response of Drosophila melanogaster
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Abstract:	As a model organism, Drosophila Melanogaster, since the beginning of the last cen- tury has been widely used in scientific experiments, ranging from those of genetics, to neural circuits. This project aims to use them in order to study the changes in the ies metabolites over the course of their life cycle. Flies grown to be resistant against the bacteria, Psuedomonas entomophilia were chosen and grown over several generations, and subsequently, infected with a dead strain of the bacteria. The infected ies were then frozen over three stages of their life cycle, viz. young, moderate and old, for further analysis of the metabolites produced as an immune response to the infection, and how they vary across stages, with the help of Nuclear Magnetic Resonance, NMR. NMR spectroscopy is an analytical technique, applied for identification of a sam- ple's constituents, by determining the change in their atoms' nuclei spin under an externally applied magnetic field, which yields a spectra. Considering its functioning, it could be ideal to identify small, light-weighted compounds, like ies' metabolites. For this project, after conducting 1D and 2D experiments, data collected was sub- jected to several multivariate statistical analyses, like PCA, OPLS-DA and ANOVA. These analyses will allow for understanding the fine differences in metabolites across the three stages and identifying significant metabolites produced triggered by the infection.
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