PROTEOMIC SERUM PROFILE OF FARM WORKERS EXPOSED TO PESTICIDES

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Brazil is the largest pesticide consumer in world and the management of these chemicals on tomato growing can promote pathological affections thus worsen the farm workers health. The objective of this work was to quantitatively analyze the proteomic profile of blood serum of agricultural workers exposed to pesticides in a city of Minas Gerais. Blood was collected to obtain the serum for acetylcholinesterase enzyme (EC 3.1.1.7) and posterior proteomics analysis. Based on acetylcholinesterase reference values, workers were classified into two groups. Group 1 showing changes in this enzyme, while the group 2 remained unchanged. To verify the quantitative profile of proteins expressed in blood, serum depletion of albumin and immunoglobulin proteins was performed using the ProteoPrep® kit (Sigma). The proteins were quantified by the Bradford method. Two-dimensional electrophoresis was carried out and for isoelectric focusing was applied 75 ug protein of each sample in immobilized pH tapes 3 to 10. In the second dimension, the proteins were separated by SDS-PAGE 10% concentration, and then were observed with colloidal Coomassie. The gels were scanned on Image Scan (GE Healthcare) and images analyzed in the Image Master 2D Platinum v 7.0 (GE Healthcare). The pl range observed was from 4 to 10. Eleven common spots were present in both groups. The exclusive spot number in group1 was 1, and the exclusive spots in group 2 were 2. The results suggest that exposure to pesticides by farm workers can promote the expression of different proteins in blood serum, these may work as biomarkers for pesticide poisoning.

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