

## **Additional Opportunities of Forensic Medical Identification of Dead Bodies of Unkown Persons**

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**Abstract :** A number of chemical elements widely presented in the nature is seldom met in people and vice versa. This is a peculiarity of accumulation of elements in the body, and their selective use regardless of widely changed parameters of external environment. Microelemental identification of human hair and particularly dead body is a new step in the development of modern forensic medicine which needs reliable criteria while identifying the person. In the condition of technology-related pressing of large industrial cities for many years and specific for each region multiple-factor toxic effect from many industrial enterprises it's important to assess actuality and the role of researches of human hair while assessing degree of deposition with specific pollution. Hair is highly sensitive biological indicator and allows to assess ecological situation, to perform regionalism of large territories of geological and chemical methods. Besides, monitoring of concentrations of chemical elements in the regions of Kazakhstan gives opportunity to use these data while performing forensic medical identification of dead bodies of unknown persons. Methods based on identification of chemical composition of hair with further computer processing allowed to compare received data with average values for the sex, age, and to reveal causally significant deviations. It gives an opportunity preliminary to suppose the region of residence of the person, having concentrated actions of policy for search of people who are unaccounted for. It also allows to perform purposeful legal actions for its further identification having created more optimal and strictly individual scheme of personal identity. Hair is the most suitable material for forensic researches as it has such advances as long term storage properties with no time limitations and specific equipment. Besides, quantitative analysis of micro elements is well correlated with level of pollution of the environment, reflects professional diseases and with pinpoint accuracy helps not only to diagnose region of temporary residence of the person but to establish regions of his migration as well. Peculiarities of elemental composition of human hair have been established regardless of age and sex of persons residing on definite territories of Kazakhstan. Data regarding average content of 29 chemical elements in hair of population in different regions of Kazakhstan have been systemized. Coefficients of concentration of studies elements in hair relative to average values around the region have been calculated for each region. Groups of regions with specific spectrum of elements have been emphasized; these elements are accumulated in hair in quantities exceeding average indexes. Our results have showed significant differences in concentrations of chemical elements for studies groups and showed that population of Kazakhstan is exposed to different toxic substances. It depends on emissions to atmosphere from industrial enterprises dominating in each separate region. Performed researches have showed that obtained elemental composition of human hair residing in different regions of Kazakhstan reflects technogenic spectrum of elements.

**Keywords :** analysis of elemental composition of hair, forensic medical research of hair, identification of unknown dead bodies, microelements

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