

Quantification of Alpha Particle Emission in Human Blood Samples in the City of Najaf, Iraq

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This research focused on the evaluation of emission of alpha particles rate E_{α} from human blood samples using nuclear track detector (CR-39, UK) from different areas of the city of Najaf (Najaf district + Kufa + Alhaidariya) and the districts Manathira. This study found that the alpha particle emission rate increased with increasing the dry weight of the blood sample. The emission rate of alpha particles in female blood samples was 0.0340 mBq/cm^2 , which is slightly higher than the emission rate of alpha particles in male blood samples (0.0336 mBq/cm^2). Whereas the emission rates of alpha particles in the blood of the city of Najaf samples ($0.0341 \text{ m Bq cm}^{-2}$) slightly larger than the emission rates of alpha particles in the district Manathira ($0.0336 \text{ m Bq cm}^{-2}$). The rate of emission of alpha particles in the blood of smokers is higher than non-smokers. Overall, concluded that the emission of alpha particle rates is low. Which there is no clear increase in these rates by comparison conducted with global research, so the blood samples free of radioactive environmental contamination from alpha particles in the studied blood samples.

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