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Radiological characterization of drinking and mineral waters in Slovenia

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It is well known that water contains dissolved radionuclides from uranium and thorium decay chains. Their concentrations are variable and depend on the nature of the aquifer rock types and the prevailing lithology. Quantitative information about the activity concentrations of critical alpha emitting radionuclides in the food and drink is important in the study of cumulative radiation effects on human life. Measurements of their levels in drinking water are therefore important to estimate the potential exposure of the public.

Due to postulation that the dose coefficient is always related to a specific radionuclide the aim of our study was to determine the activity concentrations of ^{238}U , ^{234}U , ^{226}Ra and ^{210}Po in drinking and mineral waters from different geological or lithological background areas all over the country. For determination of investigated radionuclides alpha-particle spectrometry was applied. On the basis of radionuclide activity concentration the contribution of each particular radionuclide to internal radiation doses from drinking and mineral water for different groups of people (children, adults) was assessed.

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