Hydrogeochemical characteristics in the basin area of the ”Rovni” accumulation - influence of the natural radionuclides

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The hydrogeochemical prospecting covered 110 km² of basin surface area of ”Rovni” accumulation. Among the water flows the most significant rivers are Sušica and Jablanica, which are mostly cut in into the limestones of Mesozoic in age. The area incorporated in the eco-geochemical research is built of Palaeozoic and Mesozoic sediments, and Quaternary material. According to geological-structural characteristics of the terrain, of special significance is the presence of pyroclastic material (tuff, volcanic breccia) as well as limestones (T²) and bauxite ore bodies within. Average values of natural radionuclides content in bauxite are: 2.24 g/t for 238U, 14.82 g/t for 232Th and 0.14% for 40K [1].

Hydrogeochemical research of radioactive elements in bauxite were conducted for all four seasons. Average uranium content for all four seasons varies within the interval 0.21 -0.26 g/l; Ra <0.05-0.09 Bq/l and Rn 0.1- 4.7 Bq/l [1].

Real time monitoring of bone metabolism in multiple myeloma (MM) would help clinicians detect MM onset earlier than is currently possible. A biomarker detecting incipient or asymptomatic bone destruction would help evaluate the efficacy, timing, and duration of bone-specific therapies. Naturally occurring Ca isotope ratios in serum may be such a biomarker.

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