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## Characterization of microbial diversity influenced by natural radon source in soil environment

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Radon is an inert gas with no color and odor having a half-life of 4 days, which is a radioactive element produced by the decay of Uranium. Recently, public interest about indoor radon presence has been increased over decade. In general, high concentrations radon is generally known to be making deleterious effects on plants, animals and humans, which can cause cell viability disruption, cell morphological changes or hormonal disorders. On the contrary, lower concentration of radon may nevertheless improve crop growth while disabling pest activity. This study shows how much of lower level concentrations of radon in natural soils affect microbial community and their diversity with regard to basal soil physicochemical characteristics. Microorganisms exposed to low radioactivity, such as low-level radon, can have strong viability and high biodiversity. Soil physicochemical parameters such as pH, electrical conductivity, moisture content and soil particle size were measured according to Korean Standard Analytical Methods for Soils. Gas phase of radon concentration was measured for 1 hour (FRD-400, FT-Radon Lab., Korea) while the concentration of it has been varied in lower, equal and greater level compared to the natural source of radon origin in the field. In the meantime, colony enumeration, dehydrogenase activity and identification of species were performed. In the long run, there were relatively greater extent of diversity and population density being observed when microbes were exposed to relatively lower or equal level compared to the natural origin. In response, they revealed higher enzymatic activity under the given lower level radon exposure.

### Biography

Kyu Yeon Lee has been studying on the neutralization ability of acid soil and the environmental impacts and decomposition mechanisms of micro pollutants such as medicines and micro-plastics in Soil Groundwater Laboratory of Inha University. Also, investigating on the characteristics of microbial diversity in natural radon soil environments verifying microbial differences at various radon concentration conditions.

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