Evidence of microbial antagonism in volcanic tuff rock

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Abstract

A total number of 64 bacterial strains isolated from two volcanic tuff rock located in Teișani, Prahova and Malul Alb, Buzau areas were investigated for ability to producing factor with antagonistic activity (AF). From these, 59 strains have the ability to synthesis AF acting against other strains isolated from these ecosystems. Some of the strains (1-2 and 1-7 respectively, isolated from Malul Alb) are acting as antimicrobial against pathogenic strains Staphylococcus aureus and Lysteria monocytogenes. Fourier Transform Infrared Spectroscopy (FTIR) and X-Ray fluorescence (XRF) analysis revealed a chemically composition based on the compounds of silica, calcium, potassium, aluminum, iron and titanium as well as the presence of groups characteristic to organic compounds. A relatively high number of microbial strains as colony-forming units (CFU) were quantified at 7x10\textsuperscript{4} for the Teișani sample and 1.5x10\textsuperscript{5} for the Malul Alb sample per gram of rock.

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