Isolation and characterization of pyrene degrading bacteria from Antarctic soil.

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Pyrene is a polycyclic aromatic hydrocarbon (PAHs) that has been shown to be harmful to a variety of organisms, including humans. PAHs are compounds that are always generated during combustion, but they are present in a variety of environments, including the atmosphere, ground, and hydrosphere, and there is concern about their chronic effects on human health and wildlife. Bioremediation is considered as a solution to this environmental problem which removes environmental pollutants through the natural etabolism activities of bacteria. The purpose of this study is to isolated pyrene-degrading strains suitable for bioremediation in Antarctic environment. In this study, various pyrene-degrading bacteria were isolated and compared in terms of pyrene degradation. Experiments were conducted at 15 ºC, with an initial pyrene concentration of 200 mg/L, and the amount of pyrene degradation was confirmed. Pyrene degradation was confirmed in all strains studied. Future plans include more detailed characterization of the bacteria and optimization of salt concentration, temperature, ph concentration, etc. to improve the amount of decomposition.