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Proteins Produced by a Vermicompost Bacterium During the Breakdown of Toxic Fluorinated Chemicals

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Per- and polyfluoroalkyl substances (PFAS) are a family of chemicals known for their unique properties, including oil and water repellency. Today, they are found in products ranging from Teflon frying pans to military fire-fighting foams. Their chemical structure that gives them these unique characteristics also cause them to be extremely resilient and long-lasting in the environment. PFAS bioaccumulate in the tissues of organisms, and evidence shows that they cause an array of health problems. Currently, there is no known method of removing PFAS from the environment. *Gordonia* sp. strain NB4-1Y is a bacteria that has been shown to use PFAS as a nutrient source. The proteins produced by NB4-1Y when given PFAS can inform us on how it is breaking these tough chemicals down, and can potentially provide researchers with a mechanism to base bioremediation methods off of. I will isolate and identify proteins of interest that are produced by NB4-1Y when given different PFAS, and will build a database of these NB4-1Y proteins that researchers can access to further understand how we can remove these chemicals from the environment.