Identification Of Nitroaromatics-Degrading Bacteria. (S03-deng195531-Poster)

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Abstract:

Eight bacteria capable of using either 2,4,6-trinitrotoluene (TNT) or hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) as a sole N source were isolated from soil and were tentatively identified. Among the 8 isolates, two were gram-positive, two cocci, 5 rods and one fibrous. All isolates were capable of using glucose, lactose, and mannitol, but only isolates 5, 6, and 8 produced CO2 with glucose. Isolate 5 was the only bacterium that was capable of producing alcohol and various acidic end products. All eight isolates produced catalase. Only isolates 7 and 8 were capable of utilizing starch, while isolates 4, 5, and 8 were capable of casein hydrolysis. All isolates, with the exception of isolate 5, produced lipase for fat hydrolysis. Tryptophanase was not produced by any of the bacterial isolates. Isolates 1, 2, and 3 produced urease. Results from gram stain, morphology, biooxidation tests, and hydrolysis tests along with 16S rDNA sequences suggest that isolate 2 is a Sinorhizobium, isolate 3 belongs to Streptomyces, both isolates 5 and 6 are Bacillus, isolate 7 is a Pseudomonas, and isolate 8 appears to be an actinomyces. Isolates 1 and 4 remain unidentified.

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