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AtzABC Catabolic Gene Probe from Novel Atrazine-Degrading Rhodococcus Strain Isolated from a Nigerian Agricultural Soil

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ABSTRACT

A batch enrichment technique was used to isolate atrazine-degrading *Rhodococcus* sp strain from an agricultural land with history of atrazine application in Bauchi state, Northeastern Nigeria. The strain was identified on the basis of physiological, biochemical and 16S r RNA gene sequencing. Growth studies and HPLC analysis showed that the strain has potential of atrazine degradation. An investigation into the catabolic genes Atz ABC, which transform atrazine to cyanuric acid, confirms the chromosomal DNA of strain to harbor BC genes, as compared with the positive control, *Rhodococcus jostii* RHA1. The strain does not possess the Atz A in all catabolic gene probe carried out. The isolation and characterization of the *Rhodococcus* sp strain showed that catabolic genes may have evolved from a single origin with widespread global distribution, with possible potential in atrazine bioremediation.

KEYWORDS

Enrichment; Catabolic Genes; Bioremediation; Atrazine

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