OMICS Group Conferences
Accelerating Scientific Discovery

World Congress on
Biotechnology

BIOTECHNOLOGY-2011
doi:10.4172/jpb.1000240

Cloning and Expression of an Organophosphate Degrading Gene (opdK) from a Novel Bacterium *Kocuria sp*

N. Nagavardhanam and Z. Vishnuvardhan

Dept. of Botany and Microbiology, Acharya Nagarjuna University, Nagarjunanagar-522 510, A.P, India

Eight bacterial isolates (Y_1-Y_8) capable of degrading organophosphate pesticide were screened from contaminated agricultural soils. Isolate Y4 is found to be very effective in hydrolyzing (800mg/L) chlorpyrifos in M9 mineral medium. Morphological, cultural and biochemical analysis in combination with molecular characterization using PCR amplification of 16S rRNA of Y_4 isolate revealed that it belongs to genus *Kocuria* showing 65% similarity with *K.rosea*. The report forms the first evidence that *Kocuria* degrades chlorpyrifos. The organophosphate hydrolyzing gene (named opdK) was amplified by using specific primers. It was further purified and ligated into pre-digested PUC19 vector. The ligated product was transferred into *E.coli* DH5α. The coding region of opdK gene was sub cloned into vector pRSETA and over expressed in *E.coli* BL 21. The study revealed that the cloned opdK gene was very effective in expression in *E.coli* BL 21.

Biography

N. Nagavardhanam, M.Sc., M.Phil., (Ph.D) is a Botany lecturer in CH.S.D.St.Theresa's Autonomous college for women, Eluru, A.P, INDIA. At present pursuing Ph.D under Faculty Development Program in Acharya Nagarjuna University, A.P (INDIA) under the research supervision of Prof. Z.Vishnuvardhan, HOD, Dept. of Botany and Microbiology.