



Title: Isolation and Purification of Bacterial Strains from Treatment Plants for Effective and Efficient Bioconversion of Domestic Wastewater Sludge

Author: Jalal, K.C.A., Md. Zahangir Alam, Suleyman A. Muyibi and P. Jamal

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Abstract: Forty six bacterial strains were isolated from nine different sources in four treatment plants namely Indah Water Konsortium (IWK) sewage treatment plant, International Islamic University Malaysia (IIUM) treatment plant-1,-2 and -3 to evaluate the bioconversion process in terms of efficient biodegradation and bioseparation. The bacterial strains isolated were found to be 52.2% (24 isolates) and 47.8% (22 isolates) in the IWK and IIUM treatment plants respectively. The results showed that the higher microbial population ( $9-10 \times 10^4$  cfu mL<sup>-1</sup>) was observed in the secondary clarifier of IWK treatment plant. Only the gram-staining identification was done in the strains isolated from IWK treatment plant not to be determined from IIUM. Among the isolates from IWK, 10 isolates of gram-positive bacillus (GPB) and gram-positive cocci (GPC), 10 isolates of gram-negative bacillus (GNB) and rest were both or undetermined. Gram-negative cocci (GNC) were not found in the isolates from IWK.