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Production, isolation, screening and extraction of polyhydroxybutyrate (PHB) from *Pseudomonas* sps. and *E. coli* using treated sewage sample

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Improper disposal of plastics has threatened natural environment worldwide. Conventional petrochemical plastics due to their excessive molecular size are resistant to biodegradation and are persistent in soil for long time. To overcome this problem, the production of eco-friendly products such as biodegradable plastics becomes inevitable. Polyhydroxybutyrate (PHB) which is produced by bacteria provides an alternative to petrochemical plastics. PHBs are polyesters that are accumulated as intracellular granules which are stored form of carbon and energy materials. PHBs are attracting considerable attention as biodegradable plastics due to their good barrier properties. These polymers exhibit thermoplastic and elastomeric features in addition to other interesting properties, such as biodegradability and biocompatibility, which make them promising industrial materials. The present study aims at the isolation and production of PHB from *Pseudomonas* sps. and *E. coli*. Treated sewage samples were collected from, Sewage Treatment Plant, Pragathi Nagar, Kukatpally, Hyderabad, for isolation of PHBs from *Pseudomonas* sps. and *E. coli*. PHB granules are identified by Sudan black B staining and standard curve of PHB is studied by double beam UV-Vis Spectrophotometer. Present investigation revealed the utilization of treated sewage sample for bioplastic production which draws solution for proper disposal of treated sewage water. The medium used for the PHB isolation and production was simple and cost effective. Information regarding these studies will be elucidated in the presentation.

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Titer on chip: New analytical tool for influenza vaccine potency determination

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Titer on Chip (Flu-ToC) is a new technique for quantification of influenza hemagglutinin (HA) concentration. In order to evaluate the potential of this new technique, a comparison of Flu-ToC to more conventional methods was conducted using recombinant HA produced in a baculovirus expression system as a test case. Samples from current vaccine strains were collected from four different steps in the manufacturing process. A total of 19 samples were analysed by Flu-ToC (blinded), single radial immunodiffusion (SRID), an enzyme-linked immunosorbent assay (ELISA), and the purity adjusted bicinchoninic acid assay (paBCA). The results indicated reasonable linear correlation between Flu-ToC and SRID, ELISA, and paBCA, with regression slopes of log-log plots being 0.91, 1.03, and 0.91 respectively. The average ratio for HA content measured by Flu-ToC relative to SRID, ELISA, and paBCA was 83%, 147%, and 81% respectively; indicating nearly equivalent potency determination for Flu-ToC relative to SRID and paBCA. These results, combined with demonstrated multiplexed analysis of all components within a quadrivalent formulation and robust response to HA strains over a wide time period, support the conclusion that Flu-ToC can be used as a reliable and time-saving alternative potency assay for influenza vaccines.

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