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FUNCTIONAL SCREENING OF MICROBIOTA IN INDIAN CURRENCY NOTES AND COINS

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Abstract

Indian currency notes (5 INR, 10 INR, 20 INR denominations) were collected from Srivilliputtur (meat shop, pharmaceuticals, tea shop), Tuticorin (temple, bus conductor) and Madurai (chicken shop). Similarly, Indian currency coins (5 paisa, 10 paisa, 1 INR, 2 INR and 5 INR coins) were collected from Sivakasi (fish market, meat shop, grocery, bus conductor, oil shop, hotel, college, public toilet, sanitary worker). The coins were soaked in saline (1%) and the saline was swabbed on tryptone soy broth. Bacterial colonies growth was observed. The bacterial colonies were further screened using *Pseudomonas* broth, EMB broth and mannitol salt broth. Bacterial colonies were identified as pathogens such as *Pseudomonas*, *Escherichia coli* and *Staphylococcus*. The bacterial colonies were identified using Gram staining and further biochemical tests such as MRVP, catalase, indol, citrate, TSI, urease, starch hydrolysis, methyl red, litmus and antibiotic resistance test. Moreover, fungi and yeast were isolated using YM, potato dextrose and sabouard dextrose agar. Currency notes were placed on blood agar and bacterial colonies further screened using mannitol salt agar. Bacterial colonies were identified as pathogens such as *Staphylococcus* and further confirmed using Gram staining. Biochemical tests such as VP, catalase and urease were performed. Bacterial colonies were identified as pathogens such as *Escherichia coli*, *Streptococcus*, *Enterococcus*, *Helicobacter pylori*, *Proteus mirabilis*, *Pseudomonas* and *Klebsiella pneumoniae*. Fungi and yeast were isolated using czapek yeast extract agar and creatine sucrose agar. Fungi were identified as *Aspergillus* and *Penicillium*. This study shows that Indian currency notes and coins are potential carrier of pathogens.

Keywords: Bacteria; Currency; Coins; Pathogens