

## CHARACTERIZATION OF OSTEOMYELITIS MICROBIOME USING SPECIFIC GROWTH MEDIA

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### ABSTRACT

Osteomyelitis is an inflammation of the bone caused by microbial infection. The objective of the study is to characterise the microbiome from osteomyelitis with the hypothesis that osteomyelitis is induced by polymicrobial infection. To identify the microbiome, sample was initially isolated from pin site of orthopaedic patients with osteomyelitis using sterile swab. Following that, the sample was inoculated into nutrient broth and incubated at 37° C for 24 h aerobically. Later, the sample was cultured on CHROMagar, mitis salivarius agar (MSA) and lactobacillus specific agar (LSA) for identification of *Candida* species, *Streptococcus* species and *Lactobacillus* species, respectively. Gram-staining was conducted to identify its phenotype under light microscope. Finally, disc diffusion test was conducted on each isolate to assess its sensitivity towards nystatin, amphotericin B, gentamicin and tetracyclin. Based on the study, only *Candida albicans* and *Streptococcus* species were identified. *Candida albicans* and *Streptococcus* species were isolated from the sample with *C. albicans* exhibited resistance to amphotericin B, gentamicin and tetracyclin while *Streptococcus* species were resistance to nystatin, amphotericin B and tetracyclin. In conclusion, osteomyelitis is induced by polymicrobial infection, with the microbial isolates possess various susceptibility towards common antimicrobial agents.

**Keywords:** Osteomyelitis, polymicrobial infection, disc diffusion assay

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