

**TITLE:** ANTIMICROBIAL SUSCEPTIBILITY AND ENTEROTOXIN-ENCODING GENES IN *STAPHYLOCOCCUS* SPP. RECOVERED FROM KITCHEN EQUIPMENT OF A UNIVERSITY HOSPITAL IN RIO DE JANEIRO, BRAZIL

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**ABSTRACT:**

One of the most significant risk factors in food processing is the cross-contamination between food and its preparation surfaces. This study was conducted to determine the occurrence of antimicrobial resistance and enterotoxin-encoding genes (EEG) in *Staphylococcus* spp. recovered from equipment used to prepare hospital meals, in a university hospital in Rio de Janeiro, Brazil. Sixty samples were collected from semi-industrial equipment (one blender and one mixer). *Staphylococcus* species were identified by classical methods. Antimicrobial susceptibility testing was carried out by the disk diffusion method. Resistance genes and SCCmec types were detected by PCR. From the forty isolates of *Staphylococcus* spp. identified, eight were identified as *Staphylococcus aureus*. Thirty-two (80%) *Staphylococcus* spp. isolates were resistant to at least one antimicrobial agent. Genetic determinants of resistance were detected: *erm* gene [*S. epidermidis* (n=2); *S. hominis* (n=1)], *mecA* gene [*S. epidermidis* (n=2)] and *aa(6')-aph(2'')* gene [*S. caprae* (n=1), *S. epidermidis* (n=2), *S. hominis* (n=1), *S. pausteri* (n=1), *S. simulans* (n=2)]. The presence of at least one EEG in 83% (n = 33) of the isolates was identified. Two strains of *S. epidermidis* were methicilin resistant (MRSE) by disk diffusion and harbouring SCCmec type IV. *Staphylococcus* spp. contaminated some hospital kitchen's equipment, indicating that hygiene procedures should be improved in the evaluated kitchen. Our results showed the presence of MRSE and *Staphylococcus* spp. MDR in the blender and mixer used in the hospital kitchen. Results also indicate that meals can be a vehicle to disseminate multiresistant *Staphylococcus* spp., including MRSE, and those also harbouring EEG. Therefore, the meals prepared with these equipments may potentially disseminate bacteria with important resistance mechanisms inside the hospital, especially because some of these foods do not follow a heat treatment afterwards.

**Keywords:** hospital diets, *Staphylococcus* spp., kitchen equipment, antimicrobial resistance, enterotoxin.

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