

## ANTIBIOTICS SUSCEPTIBILITY OF BACTERIA ISOLATED FROM COSMETICS PACKAGES

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Cosmetics are preparations consisting of natural or synthetic substances for external use on various parts of the body. Although containing preservatives in its composition, such products are prone to secondary contamination by opportunistic bacteria, such as the oxidase-positive Gram-negative group which is responsible for the process of cosmetics deterioration as well as skin, eyes or mucosa infections in costumers. The study aimed to isolate strains of Gram-negative non-fermentative bacteria from cosmetics packages and to test their susceptibility to antibiotics used in the antipseudomonal empirical scheme. Strains were isolated from cosmetic products packages discarded in sterile collectors disposed at three beauty salons in the city of Cabedelo-PB. The packages were handled under aseptic conditions with a swab and then transferred into test tubes filled with nutrient broth containing nystatin (50mg/L) which were and incubated at 37 °C for 48h. After growth was evidenced by turbidity, diluted aliquots were transferred into flasks containing asparagine broth and incubated overnight. Isolates were obtained by spreading onto agar surface. Complementary assay using a biochemical tests kit, Bactray III®, was carried out for the identification of Gram-negative non- fermentative bacteria. A susceptibility test was performed, using the disk diffusion and those following antibiotics (in mg.mL<sup>-1</sup>): Ciprofloxacin 5, Gentamicin 10, Imipenem 10, Meropenem 10, Norfloxacin 10, Polymyxin 300 and Sulfonamide 300. A total of 13 strains were isolated from shampoo, hair moisturizer, straightening cream and bleaching cream packages, identified as *Burkholderia cepacia*, *Pseudomonas aeruginosa* and *Aeromonas hydrophila*. Among them, 6 (three *B. cepacia*, two *P. aeruginosa* and one *A. hydrophila*) showed resistance at least for two classes of antibiotics: carbapenems (17%), quinolones (33%), sulfonamides (33%), and surprisingly polymyxins (67%). Only one strain of *P. aeruginosa* was resistant to a single antibiotic, norfloxacin. Some antibiotics potentiated the effect of other and overlapping zones were observed. On the other hand, some resistant colonies growth was established in the inhibition zones whose antibiotics were active. Results highlight a concern as well as a discussion on the risk of multi-drug resistant opportunistic pathogens found in cosmetics.

**Key-words:** Secondary contamination. Gamaproteobacteria. Microbial resistance. Beauty salons.

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