Fight the Bite: Identifying Aerobic and Anaerobic Bacteria Commonly Found in the Oral Cavities of Shark Populations Located in Beaufort County, South Carolina, in Order to Better Prescribe Antibiotics to Shark Bite Patients

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The central focus of this study was to determine the bacterial composition of the oral cavities of Sphyrna tiburo and Negaprion brevirostris populations native to Beaufort County, South Carolina, and to determine the sensitivity of these bacteria to different antibiotics in order to better prescribe treatment to shark bite victims. It was predicted that if bacteria found in the mouths of local shark populations are identified and their antibiotic sensitivity is determined, then it will be possible to determine the best kind of antibiotic to prescribe to shark attack victims. The mouths of eleven sharks, 8 Sphyrna tiburo and 3 Negaprion brevirostris, were swabbed. The collected bacteria were then transferred to marine agar petri dishes, and incubated for twenty-four hours at 23°C. The eighty-two isolated bacteria were then identified using gram-stain and shape, their hemolytic capabilities were determined, and their sensitivity to five different antibiotics was determined. The results showed that of the 82 isolated bacteria, 47% were gram-negative, while the other 53% were gram-positive. Similarly, 56% of the bacteria were coccus, 23% were coccobacillus, and the final 21% were bacillus. Additionally, of the 82 bacterial isolates, 80 grew on blood agar. Of the 80 isolates that grew on the blood agar, 33 displayed alpha hemolysis, 18 displayed beta hemolysis, and 29 displayed gamma hemolysis. In terms of antibiotic sensitivity testing, Chloramphenicol appears to have been the most efficient, as it affected 100% of the isolates and produced an average zone of inhibition radius of 14.1 mm +/- 4.8 mm.

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