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The antimicrobial activity of an atmospheric pressure, room-temperature plasma in a simulated root canal infected with *Enterococcus faecalis* XINCAI ZHOU, ZILAN XIONG, YINGUANG CAO, XINPEI LU, DEXI LIU, DEPARTMENT OF STOMATOLOGY, TONGJI HOSPITAL, TONGJI MEDICAL COLLEGE TEAM, LOW-TEMPERATURE PLASMA LAB, HUAZHONG UNIVERSITY OF SCIENCE AND TECHNOLOGY TEAM — The antimicrobial activity of an atmospheric pressure, room-temperature plasma jet on the simulated root canals infected with *Enterococcus faecalis* is studied. The samples are divided randomly into 12 experimental groups and one control group. All experimental groups exhibited a significant reduction in viable bacteria compared with the control group (P<0 .01). The largest reductions were obtained in Group 9 (Plasma jet containing 5.25% sodium hypochlorite sterilization for 12 min after irrigating root canals with 1 ml sterile physiologic saline) and Group 12 (Plasma jet sterilization for 12 min after irrigating root canals with 1 ml sterile physiologic saline), 6.21 and 5.62 log reductions, respectively. It is concluded that the plasma jet containing 5.25% sodium hypochlorite, as well as the plasma jet only, can effectively sterilized the simulated root canals.

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