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[Cytotoxicity of anaerobic bacteria isolated from infected root canal].

[Article in Japanese]

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Bacteria in the infected root canal play an important role in the progression of the periapical lesion. The purpose of the present study was to investigate the cytotoxic effects of bacteria isolated from an infected root canal on the periapical lesion. Four obligately anaerobic bacteria were isolated and their sonic extracts (SE) were prepared. The cytotoxic assay of each SE for MC3T3-E1 cell was used with respect to the morphological cell changes and [3H]-thymidine uptake. The following results were obtained: 1. Four obligately anaerobic bacteria were identified as follows: *Porphyromonas asaccharolytica* (P. a.), *Fusobacterium nucleatum* (F. n.), *Eubacterium lentum* (E. l.), and *Peptostreptococcus micros* (P. m.). 2. The protein concentrations which induced the morphological cell changes differed in each SE. The SE from P. m. caused cell abnormalities at 10 micrograms protein/ml, F. n. and E. l., at 30 micrograms protein/ml, and P. a., at 100 micrograms protein/ml. 3. The inhibition of the incorporation of [3H]-thymidine into DNA was concentration-dependent. The SE of P. a. showed less cytotoxicity than the others at lower concentrations; 3, 10, 30 micrograms protein/ml. The SE from F. n. had more cytotoxicity at higher concentrations; 100, 300 micrograms protein/ml. These results suggest that these bacterial sonic extracts have a potential to cause morphological cell changes and inhibit the cell proliferation in different concentrations.

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