

Evaluation of the expression of pro and anti-inflammatory cytokines and growth factors after stimulation with different irrigation agents

Paulo Rogério Nunes Barbosa,¹ Milena do Valle Tomaz,¹ Luciana Moura Sassone,¹ Raphael Hirata Junior¹

¹School of Dentistry, Rio de Janeiro State University (UERJ), RJ, Brazil

No endodontic auxiliary chemical solutions fills all the requirements considered ideal, especially for biocompatibility, since all solutions used have some degree of cytotoxicity. The aim of this study was to investigate the effect of auxiliary chemical solutions; sodium hypochlorite 5.25% (NaOCl), chlorhexidine 2% (CHX), chitosan 0.2%, etidronic acid 18% (HEBP) and grape seed extract 6.5% (GSE); in subcytotoxic concentrations, on the expression of pro and anti-inflammatory cytokines, when in contact with human lymphoma lineage, differentiated into human macrophages, “*human macrophage-like*” U937. The cytotoxic and subcytotoxic concentrations of each solution were determined using

mouse cells fibroblasts (L929), by the MTT cell viability test. The subcytotoxic concentrations, of the auxiliary chemical solutions, were maintained in contact with the U937 cells and the expression of 7 pro-inflammatory cytokines were analyzed. The substance with the lowest cytotoxic activity was the GSE, followed by HEBP, NaOCL, CHX and chitosan. The HEBP was a chemical agent that showed better results in modulating the expression of pro-inflammatory cytokines, but all the auxiliary chemical substances were able to induce the expression of various pro-inflammatory cytokines.

Keywords: Chitosan; Cytokines; Etidronic acid; Grape seed extract; Root canal irrigants

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1. Paulo Rogério Nunes Barbosa - ORCID: 0000-0003-0270-8072. E-mail: paulo96nunes@hotmail.com
 2. Milena do Valle Tomaz - ORCID: 0000-0001-9616-7785. E-mail: milenavtomaz@gmail.com
 3. Luciana Moura Sassone - ORCID: 0000-0002-6181-7490. E-mail: lucianasassone@gmail.com
 4. Raphael Hirata Junior - ORCID: 0000-0003-3091-6020. E-mail: rhiratajunior@gmail.com
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