Abstract:

The aim of the present study was to compare the cytotoxicity and biocompatibility of the epoxy resin based AdSeal and the methacrylate resin based Hybrid Root Seal endodontic sealers. Extracts of the sealers were placed in contact with BHK-21 fibroblasts and the cytotoxicity was evaluated using the MTT assay at 24 and 72 hours. While the biocompatibility was evaluated by implanting the sealers in the subcutaneous tissues of rats and the tissue reaction was scored at 1, 2, and 4 weeks. Results showed that the cytotoxicity of both materials was concentration-dependent and did not significantly change from 24 to 72 hours. The high concentrations of both materials were significantly more toxic than the control, while no significant difference existed between both materials and the control in very high dilutions. On the other hand, the initial inflammatory reaction observed at 1 week for both materials significantly decreased by 4 weeks. AdSeal elicited greater inflammatory reaction than Hybrid Root Seal at all evaluation periods, but this was of no statistical significance. Therefore, it was concluded that both materials were considered biocompatible.