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Biocompatibilities of Various Calcium Silicate Cements

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Abstract : Aim: The objective of this study was to compare the biocompatibilities and mineralization potential of ProRoot MTA and newly developed calcium phosphate based cement, Capseal. Materials and Methods: The biocompatibilities and mineralization-related gene expressions (Bone sialoprotein (BSP) and osteocalcin (OCN)) of ProRoot MTA and Capseal were also compared by a methylthiazol tetrazolium (MTT) assay and reverse transcription-polymerization chain reaction (RT-PCR) analysis on 1, 3, and 7 days, respectively. Empty rings were used as control group. The results were statistically analyzed by Kruskal-Wallis test with a Bonferroni correction. P-value of < 0.05 was considered significant. Results: The biocompatibilities of ProRoot MTA and Capseal were equally favorable. ProRoot MTA and Capseal affected the messenger RNA expression of osteocalcin and osteonectin. Conclusions: Based on the results, both ProRoot MTA and Capseal could be a useful biomaterial in clinical endodontics.

Keywords : biocompatibility, calcium silicate cement, MTT, RT-PCR
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