

Biocompatibilities of Various Calcium Silicate Cements

Authors : Seok Woo Chang, Kee Yeon Kum, Kwang Shik Bae, WooCheol Lee

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

Conference Title : ICSRD 2020 : International Conference on Scientific Research and Development

Conference Location : Chicago, United States

Conference Dates : December 12-13, 2020