The Evaluation Nano Calcium Silicate Cements Performance for Palpation

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***Abstract*—**Root canal therapy includes cases of dental treatment that causes complications such as infectious of bone. Therefore, a substance that can also combined excellent sealing with appropriate tissue response is necessary.

In recent years, studding on the addition of various calcium silicate cement base for making these cements bioactive as a root canal filling materials is done ; however, influence of addition tri-calcium phosphate on the reform Bioactivity and other properties of these cements in this article was not research yet, which revealed that adding calcium phosphate significantly affects the properties of silicate cement in a positive way.

After the cement powder components were mixed with double distilled water, complex physical and chemical reactions happen that in this reactions, the silicates of the cement products hydrations and with solving phosphate compounds and precipitate calcium phosphate such as hydroxyapatite, a hard solid mass produce.

SEM images of composite cement shows the spherical particles of hydroxyapatite after one day immersed in SBF. The results showed that calcium phosphate phase is a resource for encourage and accelerate the apatite layer on the surface of the composite cement. The researchers reported that the hydrolysis of α-TCP after 15 days was completed.

As a result, cement made in this study with more tests can used for dental procedures. This cement has ability to setting itself, high strength, biocompatibility and the ability of inject.

Keywords: *nano calcium silicate, cement, composite, biocompatibility*