**Dear Prof Eliav,**

**Thank you very much for your response.**

**Please find kindly the answers to the queries below in \*bold.**

 Abstract

In the abstract, although restricting the text to the main information, it is important to pay attention to some details. The manufacturer of the materials used in the experiments should be reported whenever possible, since for a correlative area reader, for example, who does not know the material in advance, be explicit that it is not an experimental material. In abstract, line 3, I recommend the citation of the materials manufacturer in parentheses.

Even about that information, the cement’s manufacturers are also not reported on the materials and methods session. Manufacturers are being cited in the introduction when talking about these materials, but in the same way, manufacturers should be cited in the materials and methods session to clarify the materials used in the present study.

**\*The manufacturer’s details has been added in the abstract, Introduction and the materials and methods in the revised manuscript.**

 **Introduction**

 When it is said: “*It has been widely considered that endodontically treated teeth are more susceptible to fracture than vital teeth [1,2].”,*that it is several authors or works agreeing with a given information, therefore, two works do not represent this. I suggest adding at least two more relevant and recent papers to support this.

**\*Two more references have been added in introduction in the revised manuscript.**

 On page 3, where it is written: “The main composition of ProRoot MTA is **C3S, C2S, C3A, C3AF**& Bi**2**O**3**.” and “The main composition of OrthoMTA III is **3CS, 2CS**, CaHPO**4.**2H2O & ZrO2”,I do not understand if they are abbreviations of the molecular formulas of the products formed in the reactions. I suggest explaining this more clearly, including the compounds names. Also put superscript numbers in molecular formulas.

**\* The full names of the chemical compounds have been added in the revised manuscript**

 On page 4, in last paragraph of Introduction, the term is somewhat unusual in scientific writing, and can be replaced by a language more accessible to readers.

**\* The term has been revised into scientific terminology in the revised manuscript.**

 **Materials and Methods**

In this session of materials and methods there are paragraphs with different letter size. Correct and standardize according to guidelines for authors.

**\* The font size has been corrected and standardized in the revised manuscript.**

 The citations are incorrect in the following text:

 Page 3: “The hydration reactions of OrthoMTA III can be explained as follows:[20]“

Page 5: “Finally the canals were flushed with 5 ml of PBS solution (pH 7.4) for one minute.21”

Page 5: “Periodontal ligament (PDL) simulation was performed by the modified method of Soares et al.22”

**\*The citation 21 has been corrected and two new references have been added. However, the original citation 20 and 22 are correct.**

About the perfomed test: “*Vertical loads were transmitted to the roots using a 4-mm-diameter steel ball attached to a steel cylinder fitted on to the universal testing machine. Each acrylic block with its embedded root was fitted on a steel jig in a central position in such a way that, the steel ball could descend onto the center of the coronal root end and contact the radicular dentin without contacting the filling material.”*Is there an ISO standard used for this test? It would be ideal to report the standard used for the mechanical test. Sometimes ANSI ADA standards are also employed.

**\* There is no ISO standard for evaluating the fracture resistance of root filled teeth.**

Page 6: correct the select text: ”All the specimens were stored at 37 o C”…

**\* The selected text has been corrected in the revised manuscript.**

**Discussion**

Page 9: “*In the present study, fracture resistance of teeth obturated with ProRoot MTA and a novel MTA cement known as OrthoMTA III was evaluated.”*

There is no need to repeat, in this session, what was evaluated in your study, since it has already been described previously. It becomes redundant and runs away from what really matters in the discussion.

**\* The above mentioned sentence has been deleted from the discussion in the revised manuscript.**

Considering the text on page 10: “*During the OrthoMTA III setting reaction, high pH will be decreased to almost neutral value. As the result of this reaction, enough end product of water (H2O) can be produced and supply the humidity to dentin through dentinal tubules. The toughness of dentin in the hydrated state is significantly higher than in the dehydrated state [26].Earlier studies have suggested that, the fluid filled dentinal tubules could function to hydraulically transfer and dissipate the occlusal forces applied to teeth [27,28]. From the perspective of theoretical mechanics, the structural stability of dentine is a function of mineralization and of moisture content [29]. The presence of water in the hydrated dentine resulted in a stress strain response characteristic of tough material, while the loss of free water resulted in stiffening and response characteristic of brittle material [30].”*

In the hydration reactions shown in the text, in both cements 3Ca(OH)2formation occurs as a product and its interaction with hydroxyapatite and water formation is only shown for OrthoMTA III. However, in the hydration reaction (A) of ProRootMTA, 3Ca(OH)2formation also occurs. Why was the interaction of this product with hydroxyapatite not considered in this case? Since it was considered that the presence of water in the dentin compromised the results of the tests, but chemically it could be formed in both cases of cements used, how this would explain a better response of one or another cement?

**\* In both the cements (ProRoot MTA and OrthoMTA III) calcium hydroxide is formed. However, the end product of water which is formed is higher for OrthoMTA III compared to ProRoot MTA.**

Considering the text: “*Long time calcium hydroxide [Ca(OH)2] intracanal medicament will weaken the dentin dramatically and cause the root fracture[35].One of end products of hydration of MTA is Ca(OH)2.”*

Since Ca(OH)2is a product of MTA hydration in both cements used, it is not clear why Ca(OH)2is consumed only in OrthoMTA III. If in both cases there may be interaction with the hydroxyapatite, this would not explain the difference between the fracture strength of the two cements tested. I suggest that questions about chemical reactions be clarified.

**\* Even though calcium hydroxide is formed in both MTA cements tested in this study, the pH of OrthOMTA III reduces drastically to neutral pH after its setting when compared to ProRoot MTA. This reduction in pH causes lesser damage to the root dentin. Hence, the fracture resistance of teeth treated with OrthoMTA III was superior than teeth treated with ProRoot MTA.**

**Conclusion**

Some consideration regarding the clinical relevance of their findings should be reported here.

**\* Conclusion has been modified in the revised manuscript.**

**Kind regards**