APEC 2023 Abstract Format for Submission

Title:
- 14pt, Bold, Times New Roman, Single line spacing; Text alignment: center
- **Up to 15 words**
- Capitalize the first letter of each word except prepositions and articles, unless they are the first word in the title

Authors' name:
- 12pt, Regular, Times New Roman
- Single line spacing; Text alignment: center
- **Presenter** should be indicated by a superscript triangle "▲".
- **Corresponding Aut**hor should be indicated by a superscript asterisk **"*"**.
- Authors' Affiliation should be indicated by a superscript number after their name.

Affiliation, City, Country:
- 10pt, Regular, Times New Roman, Single line spacing, Text alignment: center
- Multiple affiliations should be numbered and indicated by a superscript number before the affiliation.

Corresponding Author's email:
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Text
- 12pt, Regular
- Times New Roman
- Single line spacing
- Text alignment: left
- **Up to 250 words**

Brief Statements should be included in text
- 12pt, Bold, Underline,
- **Research Paper / Clinic Topic:** Objectives, Materials and Methods, Results and Discussion, Conclusions (optional)
- **Case Report:** Introduction, Case Presentation, Discussion, Conclusions (optional)

Keywords
- 12pt, Regular
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- **2 - 6 keywords**

Physical and Biocompatible Properties of Injectable Biphasic Hyaluronic Acid Gel with Lovastatin for Pulp Regeneration

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Objective: To enhance vascularization and dentinogenesis in pulp regeneration, the injectable biphasic hyaluronic acid hydrogels with lovastatin were developed and their physical biocompatible properties were investigates in this study. **Materials and Methods:** The 2% crosslinked hyaluronic acid (cHA) using BDDE was synthesized and then mixed with different ratio of 2% non-crosslined hyaluronic acid (HA) to form the biphasic hyaluronic acid hydrogel (biHAG). The Lova@biHAGs were prepared by mixing the biHAG with Lovastatin-PLGA nanoparticles, which was produced using Ho et al method. The residual of BDDE, rheology, viscosity, lovastatin releasing behavior and cytotoxicity of materials were investigated. **Results and Discussion**: No residual BDDE was found in HAG. The increase of HA and addition of Lovastatin-PLGA in biHAG did not alter the G' modulus. However, the increase of HA would cause the significant decrease of viscosity result in the better injectable properties. Meanwhile, the addition of Lovastatin-PLGA had mild effect on viscosity. In addition, Lova@biHAG presented the slow releasing behaviors of lovastatin and more HA content reached the plateau of lovastatin releasing earlier than those with less HA content. All biHAG and Lova@biHAG presented the good cell viability in WST-1 assay and the low cell death in LDH test. **Conclusions:** The content of HA in biHAG did not affect their modulus and biocompatibility, but changed their viscosity and the releasing behavior of lovastatin. HAG80 with the mixing ratio of HAG and HA equal to 80:20 may be the proper hydrogel for pulp regeneration.

Keywords: BDDE, hyaluronic acid, injectable, pulp regeneration, statin

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Funding: If any, please mentioned here
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