**Revised manuscript entitled:** "**Freeze-thawing method to prepare chitosan-poly (vinyl alcohol) hydrogels without crosslinking agents and diflunisal release studies"**.

## Answers to Reviewer #2

First of all, we would like to thank the amendments suggested. We have taken into account all the corrections received because we have found them very useful.

Considering the requested corrections, we have made the following changes in the manuscript; all of them are highlighted in red in the document:

Major Concerns:

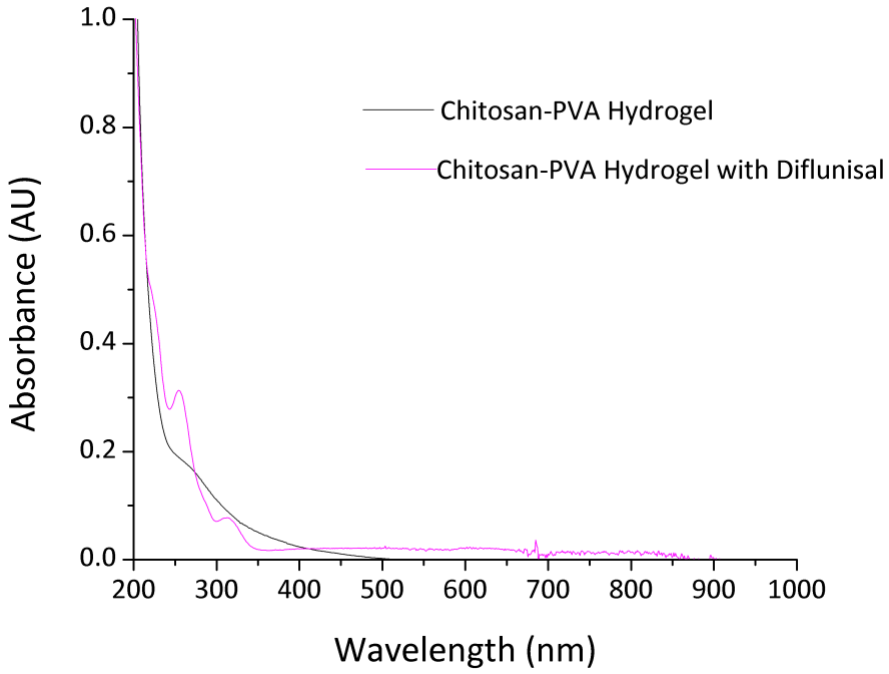
1. **The FTIR-ATR spectra did not bring any relevant information.**
   FT-IR is a basic characterization for polymeric materials in order to put in evidence the components present in the samples. In this case, even if it is a basic characterization, the FT-IR spectra have not been eliminated, because required by other reviewer, FT-IR spectra of pure chitosan and PVA were added to the Figure 2 as controls.

2. **The gel fraction % is necessary**
   Generally, the gel fraction determination it is made in order to know the percentage of gel remaining after a swelling process, which is related to a degradation process or a dissolution of the polymers, in the short time. This determination it could be made under different conditions depending the purpose of the study, for example a) swelling the hydrogel in a solvent inert to all the hydrogel components, b) swelling the hydrogel in a solvent selective to one of the hydrogel components. However, this characterization was not the objective of our study. In our case, it could be observed (in the swelling graphs) that this could be happened at environ 120 hours of swelling. However, our drug charge and drug release studies were carried out at maximum 30 hours.

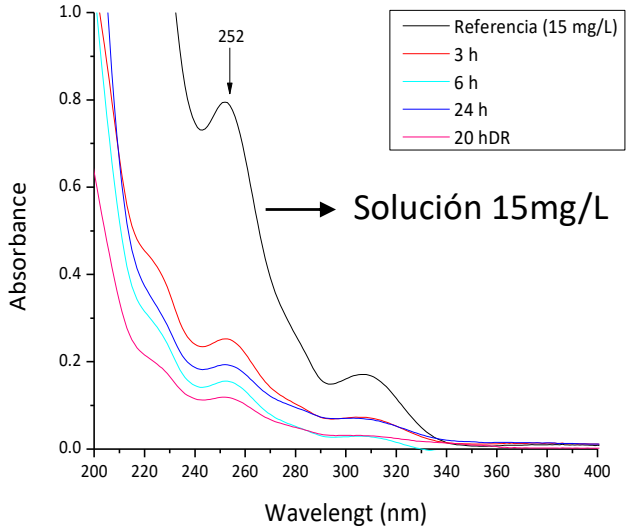
3. **The drug release and the drug charge are not so clear, how did you do that? With dialysis? Filtered? How did you know that Chi exudates are not present? Or PVA?**
   In order to explain better the drug release and the drug charge, Section 6 has been restructured (lines 176-217).

   **Please, show the UV/Vis Spectrum.**

In the next figure are shown the UV/Vis Spectrum of buffers solutions after immersion of: a) chitosan-PVA hydrogels without drug , b) chitosan-PVA hydrogels with diflunisal. It could be observed that no chitosan or PVA signals were detected by Uv-Vis, neither another signal that could present any interference in the diflunisal determination.




Also, are presented the UV-Vis spectrums obtained during the drug loading studies for one of the sample, were neither interference of hydrogel components was presented.




4. **<u>In the Discussion part it is not clear the differences obtained among the processes condition used. Please, Put references in this part.</u>**

   As recommended, in this section (lines 322-368), some phrases concerning the results were eliminated. Indeed, some paragraphs were added focusing the discussion on the critical steps in the protocol, the significance and modifications of the method as well as the limitations. The corresponding citations were inserted.