



# Can chicken gelatin kill bugs?

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## BACKGROUND

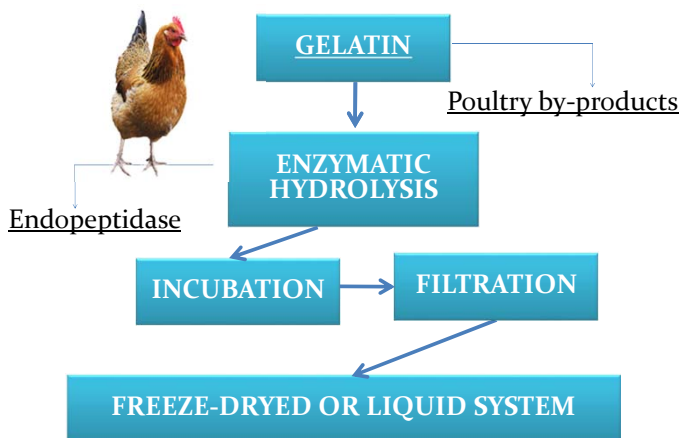
- The valorization of by-products is one of the main reasons to explore proteins/peptides functionality and bioactivity;
- Gelatin from by-products is one of the most popular biopolymers widely utilized in various industries for its unique properties;
- Therefore, gelatin hydrolysates with further incorporation of saccharides could extend their range of functions in food systems.

## OBJECTIVES

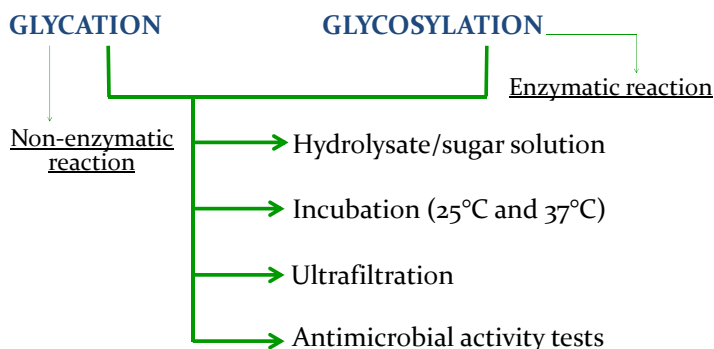
- Analyze antimicrobial activity of the different fractions obtained from glycated/glycosylated poultry gelatin hydrolysates;
- Identify the compound/compounds with antimicrobial activity. Is there any synergy between glycopeptides?

## OUR APPROACH

### 1. Hydrolysate preparation:



### 2. Incorporation of sugar:



## OUR APPROACH (cont'd)

### 3. Fractionation:

- Obtaining fractions from glycopeptides using FPLC (fast protein liquid chromatography).

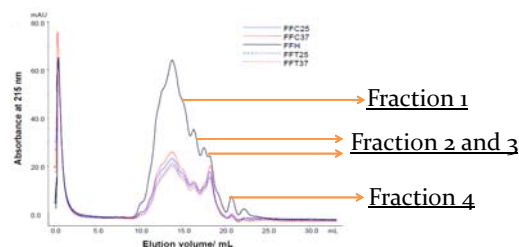
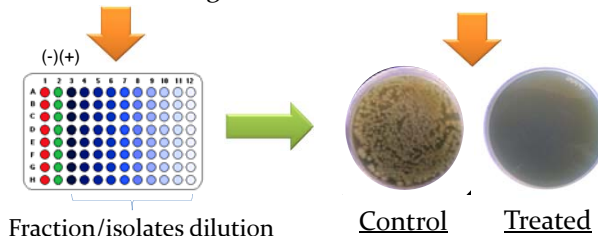


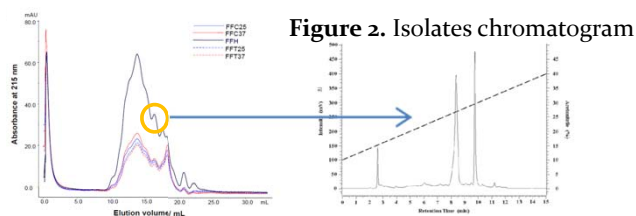
Figure 1. FPLC chromatogram (Hong P., et al 2013. Submitted paper)

### 4. Antimicrobial activity on *E.coli* and *B.subtilis*:

**MIC:** smallest amount to inhibit bacterial growth  
**MBC:** smallest amount to kill bacteria



### 5. Isolation and identification:



- Isolation of the different peptides/glycopeptides from the active fraction to analyze antimicrobial activity.

## WHAT TO EXPECT?

- Isolated glycopeptides from chicken gelatin that can act as preservatives in food systems to extend shelf life;
- Active compounds from chicken gelatin added to meat and dairy products to minimize food borne diseases by killing bacteria.

## ACKNOWLEDGEMENTS

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