



# Bioactive peptides from spent hens

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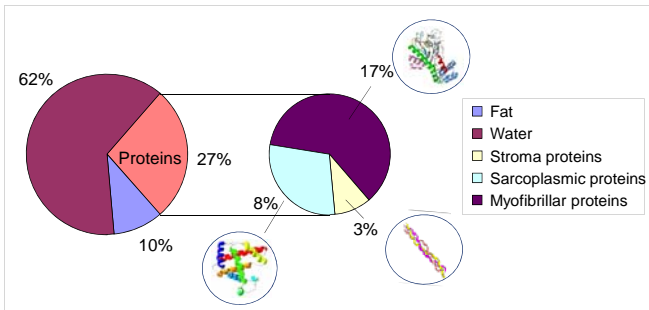
## Summary

Spent hens are seen as a by-product or a waste product from the egg industry. Finding methods of utilization, other than disposal or conventional food and feed uses, is of great interest. In this study, we hypothesize that spent hens can be used as a good resource of bioactive peptides.

## Background

Many proteins and peptides have anti-hypertensive properties, opioid activities, immunomodulatory activities, mineral sequestering properties, and antioxidant, and antimicrobial activities.

Extract from chicken soup or extract is a well-known extremely nutritious food with various medical efficacies. As a nitrogen-rich food commodity, it is very likely that the release of amino acid and peptides under boiling/cooking process may constitute the major bioactive food components in the chicken soup that is responsible for the reported health benefits.



**Figure 1.** Composition of chicken meat

Generally, chicken meat proteins are grouped into three categories based on their solubility, including sarcoplasmic proteins, myofibrillar proteins and stroma proteins (connective tissue proteins).

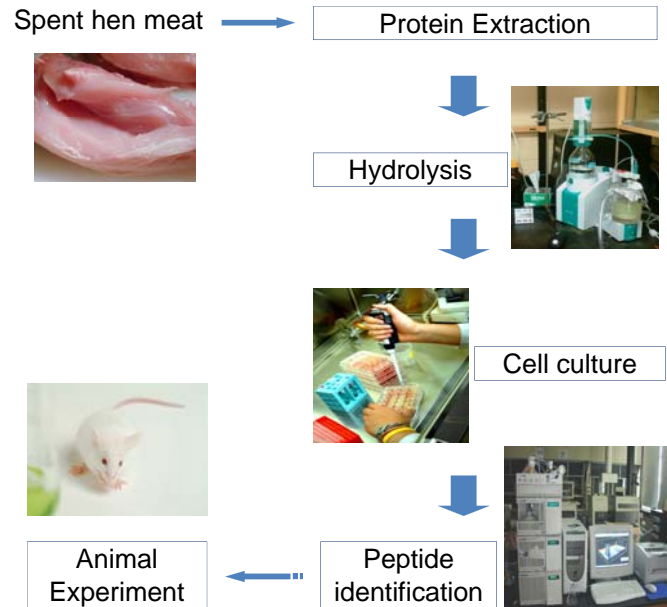
## Objectives

- To determine the effects of different pre-treatment conditions on first-step protein extraction;
- To develop a practical procedure for peptide production;
- To evaluate peptides bioactivities.

## Methodology

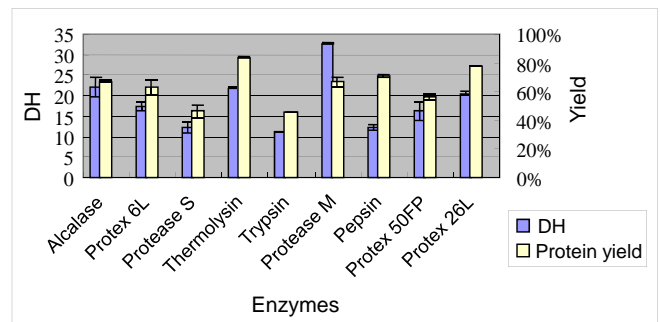
To study the production of bioactive peptides from spent hens, spent hen carcass are imported as the original material. Meat are then separated for further study.

The main practices are shown in the flow chart.



## Our Observations

Different degree of hydrolysis and protein yield were obtained from hydrolysates derived from spent hen meat slurry samples hydrolyzed with different enzymes.



**Figure 2.** Hydrolysis degrees of different enzymes

## What does this mean?

We expect that, with this study, we can benefit the egg industry by generating additional revenue instead of a liability, improving animal welfare, and being environmentally-responsible.

## Acknowledgement

This project is supported by Alberta Livestock and Meat Agency (ALMA).

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