



Is spent hen a novel source of antihypertensive peptides?

Yuchen Gu, Qiyi Li, Jianping, Wu

Summary

Spent hen meat protein hydrolysates were digested by thermolysin actively inhibited angiotensin I converting enzyme. The 3 most potent peptide fractions were isolated and the peptide sequences were analyzed. Our study demonstrates that spent hen meat is a potent source of antihypertensive peptides.

Background

Around **one in three** people has raised blood pressure.

— from *World Health Statistics 2012*



22.7% of Canadian adults aged **20** years and older were living with diagnosed hypertension. **46%** of women and **38%** of men aged **60** or over are on drug therapy.

— from *Public Health Agency of Canada*



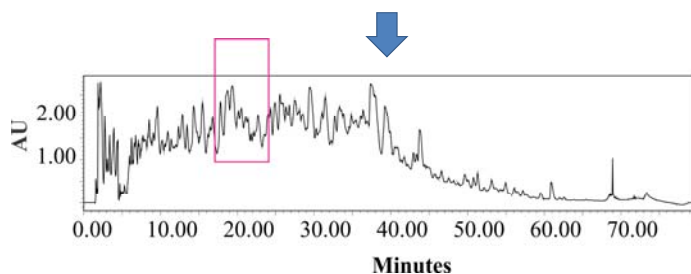
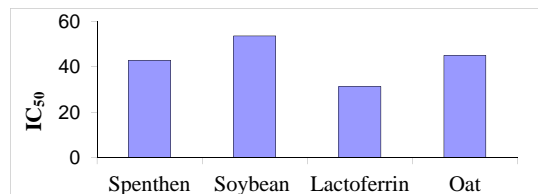
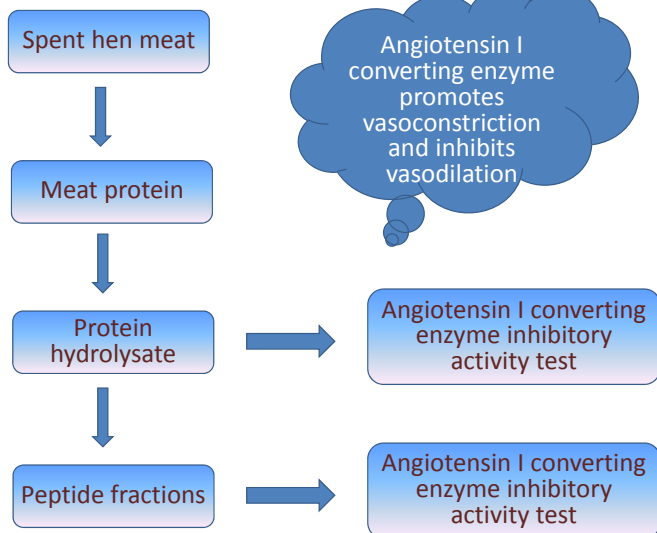
Utilization of spent hen

- a. Generally considered as byproduct of egg industry
- b. Low price because of its age and relative toughness

Our objective

- a. Identify novel antihypertensive peptides from spent hen meat
- b. Add economic value to spent hen meat

Our Approach



NYK	NYKHN	FI	LLHTQNTS
INYK	KHN	FL	LLHTQN
IINYK	YKHN	FMN	LLHTQNT

Figure 1. a. Comparison between spent hen protein hydrolysates and other food protein commodities regarding angiotensin I converting enzyme inhibitory activity. b. The high performance liquid chromatography of potent fraction of spent hen hydrolysate. c. Examples of peptides identified from potent peptide fraction.

Our Observations

- a. Spent hen meat protein showed a **comparable** angiotensin I converting enzyme inhibitory activity.
- b. The peptides identified from the most potent fractions of spent hen protein hydrolysates exhibited a certain level of similarity in their sequences.
- c. Some peptides identified from spent hen meat have been reported from other protein commodities to possess angiotensin I converting enzyme inhibitory activity.

What Does this mean?

Spent hen meat is a potent source of antihypertensive peptides and it can be applied to develop antihypertensive functional food.

Acknowledgements



Contact Information

Dr. Jianping Wu
University of Alberta
Phone: (780)492-6885
Email: jianping.wu@ales.ualberta.ca