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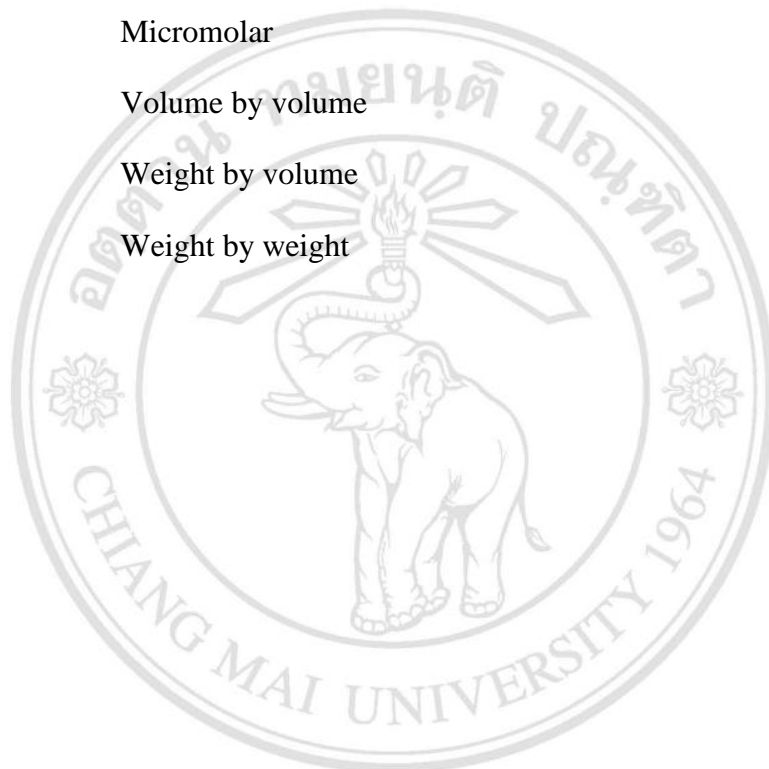
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LIST OF ABBREVIATIONS

| | |
|------------------|---|
| Å | Angstrom |
| A ₂₈₀ | Absorbance at 280 nanometer |
| A ₇₃₄ | Absorbance at 734 nanometer |
| ABTS | 2,2'-Azino-bis(3-ethylbenzothiazoline-6-sulfonic acid) diammonium salt |
| ACE | Angiotensin-I-converting enzyme |
| ANG-I | Angiotensin I |
| ANG-II | Angiotensin II |
| BHT | Butylated hydroxytoluene |
| cm | Centimeter |
| °C | Degree Celsius |
| Da | Dalton |
| DI | Deionized |
| DH | Degree of hydrolysis |
| Ferrozine | 3-(2-pyridyl)-5,6-diphenyl-1,2,4-triazine- <i>p,p'</i> -disulfonic acid monosodium salt hydrate |
| FRAP | Ferric reducing antioxidant power |
| g | Gram |
| g | G force |
| HAT | Hydrogen atom transfer |
| HHL | Hippuryl-L-histidyl-L-leucine |
| hr | Hour |

| | |
|----------|--|
| kcal/mol | Kilocalorie per mole |
| kg | Kilogram |
| LC-MS/MS | Liquid chromatography tandem mass spectrometry |
| M | Molar |
| MALDI | Matrix-assisted laser desorption/ionization |
| mg | Milligram |
| mg/mL | Milligram per milliliter |
| min | Minute |
| mL | Milliliter |
| mL/min | Milliliter per minute |
| mM | Millimolar |
| MS | Mass spectrometry |
| mU | Milliunit |
| MW | Molecular weight |
| m/z | Mass-to-charge |
| N | Normality |
| nm | Nanometer |
| ppm | Part per million |
| RAS | Renin-Angiotensin system |
| RNS | Reactive nitrogen species |
| S.D. | Standard Deviation |
| SET | Single electron transfer |
| TEAC | Trolox equivalent antioxidant capacity |
| TNBS | 2,4,6-trinitrobenzenesulfonic acid |

| | |
|---------------|---|
| TPTZ | 2,4,6-tri(2-pyridyl)-s-triazine |
| TOF | Time of flight |
| Trolox | 6-hydroxy-2,5,7,8-tetramethylchromane-2-carboxylic acid |
| μg | Microgram |
| μL | Microliter |
| μM | Micromolar |
| v/v | Volume by volume |
| w/v | Weight by volume |
| w/w | Weight by weight |



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ข้อความแห่งการริเริ่ม

วิทยานิพนธ์นี้ได้นำเสนอฤทธิ์ทางชีวภาพของเจลาตินไฮโดรไลสได้จากหนังปลานิลจากการย่อยด้วยเอนไซม์ย่อยโปรตีนทั้ง 6 ชนิด ไฮโดรไลสที่ได้จากการย่อยด้วยเอนไซม์จะถูกทดสอบฤทธิ์ในการต้านอนุมูลอิสระและฤทธิ์ในการต้านความดันโลหิตสูง ไฮโดรไลสที่มีฤทธิ์ดังกล่าวในระดับสูงจะถูกทำให้บริสุทธิ์เพื่อนำไปหาลำดับกรดอะมิโนด้วยเทคนิค MALDI-TOF/TOF แมสสเปกโตรเมตรีและศึกษาถึงความสัมพันธ์ระหว่างลำดับกรดอะมิโนกับแอนจิโอเทนซินคอนเวอร์ติงเอนไซม์

ข้าพเจ้าขอรับรองว่า เนื้อหาในวิทยานิพนธ์นี้เป็นของข้าพเจ้าซึ่งไม่เคยถูกนำเสนอเพื่อปริญาใด ๆ มาก่อน และข้าพเจ้าขอประกาศว่าวิทยานิพนธ์นี้ไม่มีการขัดแย้งทางผลประโยชน์ใด ๆ ทั้งสิ้น

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STATEMENTS OF ORIGINALITY

This thesis presented the bioactivity of gelatin hydrolysate from Nile tilapia skin hydrolyzed with six protease enzymes. All hydrolysate were evaluated for their antioxidant and antihypertensive activities. The most active hydrolysate was further purified before sequence analysis with MALDI-TOF/TOF MS. Besides, the interactions between the peptides and angiotensin-I-converting enzyme were investigated.

I can affirm that the content of this thesis is my own work and has never been proposed for any degree. I also declare that this thesis has no conflict of interest.



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