

Kanok-orn Suwandumrong 2015: Antioxidant, Antibacterial and Anticancer Activities of Storage Proteins and Hydrolysates of rice. Master of Science (Biochemistry), Major Field: Biochemistry, Department of Biochemistry. Thesis Advisor: Assistant Professor Chonticha Tantitadapitak, Ph.D. 137 pages.

Rice is a staple food of Thai people and is also an economically important plant of Thailand. This research aimed to study antibacterial activity, antioxidation and anticancer activity of rice storage protein and their protein hydrolysate : pepsin and pepsin-trypsin prepared from rice Khoa Dok Mali 105 and Phitsanulok 2. The result indicated that some rice protein hydrolysates inhibited the growth of 5 strains of pathogenic bacterias to some extent. However, the hydrolysates could promoted 8 strains and did not affected 2 strains of pathogenic bacterias. Glutelin and its hydrolysates possessed antioxidant activity against DPPH[•], OH[•] and linoleic acid autooxidation. Glutelin hydrolysate (pepsin-trypsin) showed the most potent scavenging activity against OH[•] (IC₅₀ = 1.72 ug protein/ml) when compared with glutelin and glutelin hydrolysate (pepsin). In addition, glutelin hydrolysate (pepsin-trypsin) was capable of inhibiting Human Stomach Carcinoma cell line (KATOIII ATCC No.HTB103) but also inhibited Human Liver cell line (Chang), CLS No. 300139.

Student's signature

Thesis Advisor's signature