



Antioxidant activity and quantitative analysis of Thiamine from some types of rice for its application as nourishing skin cream

Kannika Pongsakul¹, Sajjaporn Suachaowna¹, Pranorm Khaomek² and Chandrladda Chotratanadilok^{1*}

¹*Department of Industrial Chemistry, Faculty of Applied Science, King Mongkut's University of Technology North Bangkok, Thailand*

²*Department of Chemistry, Faculty of Science, Rangsit University, Thailand*

*e-mail: chandrladda.c@sci.kmutnb.ac.th

The potential of a variation of rice species for their antioxidant activity was investigated. Five species of rice including Khao Hom Mali, Khao Hom Nin, Riceberry, Khao Luem Pua, and Khao Sangyod were extracted by 95% Ethanol to compare the antioxidant activity. All crude extracts were analyzed by DPPH radical scavenging assay compared with vitamin C. The IC₅₀ values founded for Khao Luem Pua, Khao Sangyod, Riceberry, and Khao Hom Nin were 5.30, 11.71, 13.36, and 13.68 mg L⁻¹, respectively. The IC₅₀ of vitamin C was 2.90 mg L⁻¹. On the other hand, the antioxidant activity of Khao Hom Mali was not found at concentration 500 mg L⁻¹. The analysis of Thiamine was performed under HPLC using standard addition method. The Thiamine contents in crude extract for Khao Hom Mali, Khao Hom Nin, Riceberry, Khao Luem Pua, and Khao Sangyod were 8.90, 38.48, 75.71, 16.80, and 95.15 mg per 100 g rice sample, respectively. The crude extract from Khao Luem Pua was added in skin cream at 0.2% by weight as an ingredient. The moisture content on the skin was 21.22-73.35% after applying this cream with 25 volunteers. There was no skin irritation when it was applied on inside part of the tested arm.

Keywords: Antioxidant activity; Thiamine; DPPH method; nourishing skin cream