5th International Symposium on
Applied Engineering and Sciences (SAES2017)
14th–15th November 2017 | **MALAYSIA**
UNIVERSITI PUTRA MALAYSIA, SERDANG, SELANGOR

Poster code:

E1

Enzymatic Hydrolysis of *N.gaditana sp* for Bioactive Peptide Production

Nur Izzati Md Saleh[1,*], Wan Azlina Wan Ab Karim Ghani[1], Razif Harun[1], And Siti Mazlina Mustapa Kamal[2]

[1]Chemical and Environmental Engineering, Faculty of Engineering, Universiti Putra Malaysia, Malaysia

[2] Department of Food and Processing Engineering, Faculty of Engineering, Universiti Putra Malaysia, Malaysia

*Corresponding author's e-mail: nurizzatims@gmail.com,

Abstract. Microalgae Nannochloropsis gaditana (N.gaditana sp) was used as a starting material to produce microalgae protein hydrolysate (MPH) by protease enzyme. The effect of pH, temperature, enzyme concentration and substrate concentration on the degree hydrolysis (DH) were investigated. The screening of enzymatic hydrolysis reaction time was conducted from 1 hr and up to 48 hours. The enzymatic hydrolysis reactions were conducted for 24 hours for all set experiments based on the screening time. The maximum cleavage of peptide bonds occurred was found at pH 8 (DH=41.69%), temperature 55°C (DH=42.53%), enzyme concentration 0.3 mg/L (DH=43.96%) and substrate concentration 2 g/L (DH=58.70%). These results demonstrated that N.gaditana sp is rich in bioactive peptide which has the capability to be an antioxidant.

Keywords: Enzymatic hydrolysis, bioactive peptide, microalgae, degree hydrolysis, antioxidant