ABSTRAK

Yasmin, Aulia. 2015. ***Pengaruh Kadar Glukosa terhadap Ekspresi Protein AdhO36 Outer Membrane Protein (OMP) Salmonella* Typhi**. Tugas Akhir, Program Studi Pendidikan Dokter Fakultas Kedokteran Universitas Brawijaya, Malang. Pembimbing : (1) Dr. dra. Sri Winarsih, APT, Msi (2) dr. Hidayat Sujuti, PhD, SpM

Demam tifoid yang disebabkan *Salmonella* Typhi merupakan salah satu penyakit infeksi terbanyak yang menyebabkan rawat inap penderita di Indonesia. Diperlukan penelitian untuk mengetahui faktor-faktor yang mempengaruhi patogenesitas dari *S.*Typhi. Kadar Glukosa merupakan salah satu faktor yang mempengaruhi patogenesitas dari bakteri. *S.* Typhi diketahui memiliki molekul adhesin pada *Outer Membrane Protein* (OMP) dengan berat molekul 36 kDa yang bernama AdhO36. Faktor adhesin ini berfungsi untuk perlekatan bakteri pada sel hospes. Penelitian ini bertujuan untuk mengetahui pengaruh kadar glukosa terhadap ekspresi protein AdhO36 OMP *Salmonella* Typhi. Perlakuan glukosa diberikan pada lima kelompok bakteri yaitu 40 mg/100mL, 80 mg/100mL, 160 mg/100mL, 240 mg/100mL dan 320 mg/100mL. Hasil elektroforesis OMP pada lima kelompok bakteri tersebut menunjukkan peningkatan ketebalan pita protein, dimana semakin tinggi kadar glukosa makin tebal protein yang terekpresi. Ketebalan pita protein OMP 36 kDa dibaca menggunakan program Corel Photo Paint 11. Hasil analisis statistik menunjukkan perbedaan yang tidak bermakna (ANOVA, p = 0,559), namun secara deskriptif terlihat ada trend peningkatan ketebalan protein OMP 36 kDa pada perlakuan konsentrasi glukosa yang makin besar. Kesimpulan penelitian ini adalah peningkatan kadar glukosa cenderung meningkatkan ekspresi protein AdhO36 *S.* Typhi.

Kata Kunci : AdhO36, Kadar Glukosa, OMP, *Salmonella* Typhi.

ABSTRACT

Yasmin, Aulia. 2015. ***The Effect of Glucose Concentration to the AdhO36 Protein Expression of Outer Membrane Protein (OMP) Salmonella* Typhi**. Final Assignment, Medical Program, Faculty of Medicine, Brawijaya University. Supervisors: (1) Dr. dra. Sri Winarsih, Msi, APT (2) dr. Hidayat Sujuti, PhD, SpM.

Typhoid fever caused by *Salmonella* Typhi is one of the most infectious disease which causes patient hospitalization in Indonesia. It needs some research to determine factors contributed to the pathogenicity of *S.* Typhi. Glucose concentration is known has an effect to the pathogenicity of bacteria. Currently, *S.* Typhi known has an adhesin molecule in Outer Membrane Protein (OMP) with molecular mass of 36 kDa named AdhO36. Adhesin has function to adhere the bacteria to host cell. This study aimed to know the influence of glucose concentration to the AdhO36 *S.* Typhi protein expression. Changing of glucose concentration was given to the 5 groups of bacteria, which were: 40 mg/100mL, 80 mg/100mL, 160 mg/100mL, 240 mg/100mL and 320 mg/100mL. The result of the OMP electrophoresis showed there was the increasing of protein band, the higher glucose concentration followed the thicker of AdhO36 expression. Then, the electrophoresis processed with Corel Photo Paint 11 to know the ”means” number or numeric number from thickening of AdhO36. The result of *one-way* ANOVA analysis showed that there is no significant differences between groups (p = 0,559), but descriptively there was increased thickening on protein OMP 36 kDa followed by increased glucose consentration. The conclusion of these study was glucose concentration tend to increase AdhO36 protein expression.

Keyword : AdhO36, Glucose Concentration, OMP, *Salmonella* Typhi.