

ABSTRAK

Outer membrane protein mempunyai susunan lebih kompleks dibandingkan dengan membrane sitoplasma. *Outer membrane protein* mempunyai peran penting terhadap virulensi bakteri gram negatif yang menyebabkan patogenitas terhadap sebuah infeksi. Pada proses sonikasi, didapatkan target isolat *outer membrane protein*. Pada penelitian ini, untuk isolasi *outer membrane protein* (OMP) menggunakan 2 surfaktan yang berbeda yaitu *sarcosyl* dan *triton x-100*. Pemurnian protein dapat dilakukan dengan ammonium sulfat dikarenakan memiliki daya larut yang tinggi. Tujuan dari penelitian ini adalah untuk mengetahui perbandingan metode isolasi menggunakan *sarcosyl* dan *triton x-100* terhadap visualisasi pita protein yang terlihat pada elektroforesis metode SDS-PAGE. Jenis penelitian ini menggunakan eksperimental laboratorium. Bakteri yang digunakan dalam penelitian ini yaitu bakteri *klebsiella pneumoniae* yang diambil dari stok isolat bakteri BBLK Surabaya. Penelitian dilakukan di laboratorium gastroenteritis ITD Unair Surabaya pada bulan Mei 2024. Hasil dari penelitian ini adalah adanya perbedaan pita protein yang terbentuk antara menggunakan *sarcosyl* dengan menggunakan *triton x-100*. Pada crude *sarcosyl* didapatkan 9 pita yang berukuran kisaran 95-15 kDa sedangkan pada crude *triton x-100* didapatkan hasil 8 pita yang berukuran kisaran 130-15 kDa. Pada pemurnian *sarcosyl* didapatkan 2 pita berukuran 48 dan 36 kDa sedangkan pemurnian *triton x-100* didapatkan hanya 1 pita berukuran 48 kDa sehingga ada perbedaan antara isolasi menggunakan *sarcosyl* dan menggunakan *triton x-100*.

Kata kunci: *klebsiella pneumoniae*, *outer membrane protein*, pemurnian protein, sonikasi, *sarcosyl*, *triton x-100*, Elektroforesis SDS-PAGE

ABSTRACT

Outer membrane proteins have a more complex arrangement compared to the cytoplasmic membrane so that protein patterns can be seen. Outer membrane proteins have an important role in the virulence of gram-negative bacteria which causes pathogenicity in an infection. In the sonication process, the target outer membrane protein isolate was obtained. In this research, for the isolation of outer membrane protein (OMP) two different surfactants were used, namely sarcosyl and triton x-100. Protein purification can be done with ammonium sulfate because it has high solubility. The aim of this research is to compare the isolation methods using sarcosyl and triton x-100 on the visualization of protein bands seen in the SDS-PAGE electrophoresis method. This type of research uses laboratory experiments. The bacteria used in this research were klebsiella pneumoniae bacteria taken from the BBLK Surabaya bacterial isolate stock. The research was conducted in the ITD Unair Surabaya gastro lab in May 2024. The results of this research were that there were differences in the protein bands formed between using sarcosyl and using triton x-100. In crude sarcosyl, 9 bands were obtained, while in crude triton x-100, 8 bands were obtained. In the purification of sarcosyl, 2 bands were obtained, while in the purification of triton x-100, only 1 band was obtained, so there is a difference between isolation using sarcosyl and using triton x-100.

Keywords : *klebsiella pneumoniae, outer membrane protein, protein purification, sonication, sarcosyl, triton x-100, SDS-PAGE Electrophoresis*