

Protein expression on Cr resistant microorganism using electrophoresis method

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Abstrak

Fatmawati U, Suranto, Sajidan. 2009. Protein expression on Cr resistant microorganism using electrophoresis method. Nusantara Bioscience 1: 31-37. Hexavalent chromium (Cr(VI)) is known as toxic heavy metals, so the need is reduced to Cr(III) is much less toxicity. *Pseudomonas aeruginosa*, *Pseudomonas putida*, *Klebsiella pneumoniae*, *Pantoea* sp. and *Saccharomyces cerevisiae* are resistant Cr(VI) microorganism and have ability to reduce Cr(VI). The aim of this research is to know ability of microorganism to reduce Cr(VI) and to know protein band pattern between Cr(VI) resistant microorganism and non resistant microorganism which inoculated on LB broth. SDS-PAGE was used to indentify protein expression. While, Cr(VI) concentration was identified by 1.5 diphenylcarbazide method. The quantitative data was analyzed by two factorial ANOVA that continued with DMRT at 1% level test. The qualitative data i.e. protein expression analyzed by relative mobility (Rf). The results showed that the ability of microorganisms to reduce Cr(VI) at initial concentration of 0.5 ppm, 1 ppm, 5 ppm and 10 ppm may vary, the average percentage of the ability of each microorganism in reducing Cr(VI) is *P. putida* (65%) > *S. cerevisiae* (64.45%) > *P. aeruginosa* (60.73%) > *Pantoea* sp. (50.22%) > *K. pneumoniae* (47.82%) > without microorganisms (34.25%). The adding microorganisms have significantly influenced toward reduction of Cr(VI). The SDS-PAGE shows that protein expression between resistant and not resistant microorganisms are no different, but resistant microorganisms have more protein (protein band is thicker).