

ABSTRACT

**CORRELATION BETWEEN MONOCHROMATIC AND POLICHROMATIC
LIGHT ON COLONY FORMING UNIT OF ESCHERICHIA COLI**

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Background : The question of whether visible light spectrum exposure affect the metabolism of bacteria still remain uncertain. The objective of this study was to assess the relationships between physical signal in the form of different visible light spectrum and the number of colony forming unit of bacteria.

Methods : The type of this research was True Experimental research with post-test only control group design. This research was conducted at Medical Microbiology Laboratory of Medical Faculty of Airlangga University using *Escherichia coli* ATCC 25922 bacteria and consist of six groups. Six groups were one control group and five treatment groups (illuminated by light). The treatment group was divided into five groups, each of treatment group was illuminated by different visible light color from Light Emitting Diode (LED) lamps with 180mW/LED, they were blue, green, yellow, red and white light for 24 hours inside incubator with 37° C to then count the number of colonies growing on Mac Conkey media.

Results : No significant differences were observed between the groups in term of colony forming unit.

Conclusion : No significant colony number differences among every group.

Key words : Visible light, *Escherichia coli*, colony forming unit.