# Examination of telomerase expression with immuno-hystochemistry techniques on some of cancer cells

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Abstrak

Objective: Cancer is a disease that gets serious attention in the medical world. This is due to the ever increasing number of patients and there has been no effective way to treat. Cancer cells have telomerase activity is relatively high compared to normal cells, so the cancer cells have the ability to continue to proliferate. Cancer cells undergo uncontrolled mitosis and have high telomerase activity compared to cells normal. Telomerase is an enzyme responsible for telomere length, a segment of DNA that is the tip of chromosomes in eukaryotic cells. Telomeres are associated with the process of aging and carcinogenesis. The purpose of this study was to determine the expression of telomerase in some cells such as breast cancer, cervical cancer, and lung cancer. Methods: The research method is experimental studies in several cancer cell cultures in the form of cell line. Cancer cells used were: HeLa (cervical cancer), MCF7 and T47D (breast cancer), WiDr (lung cancer), and Raji (lymphoma) with culture medium RPMI, DMEM, and M199. Vero cells is used (fibroblast cells) as a control (normal cells). Expression of telomerase enzyme was measured by the Immunohystochemistry (IHC) method. Results: The results showed that the cancer cells have activity/higher telomerase expression were highly significant ($p<0.01$) compared to normal cells (Vero cells). Similarly, the expression of telomerase in HeLa versus WiDr, WiDr versus T47D, T47D versus Raji, and Raji versus MCF7 also showed highly significant differences ($p < 0.01$). Telomerase expression between cancer cells that showed significant difference (HeLa cells versus Raji cells; HeLa cells versus MCF7 cell; T47D cells versus MCF7 cells) ($p < 0.05$). No significant difference was found in the group of HeLa cells versus T47D, WiDr versus Raji cells, and WiDr versus MCF7. Conclusions: It was concluded, that the cancer cells have telomerase expression of specific and different from each other, depending on the type of cell. T47D breast cancer cells have telomerase expression of the highest, followed by cervical cancer cells (HeLa). Lung cancer cells (WiDr) with cell lymphoma (Raji) has almost the same expression and both have lower expression.;