

## ABSTRAK

Hidayatullah, Furqan. 2013. **Efek Antibodi Telomerase Pada Sel Kanker Leher Rahim :**

**Pendekatan Secara Biomolekular.** Tugas Akhir, Program Studi Pendidikan Dokter

Fakultas kedokteran Universitas Brawijaya. Pembimbing : Prof. Dr. dr. M Rasjad Indra,

Ms

Kanker leher rahim merupakan salah satu kanker dengan angka kematian tertinggi di Indonesia. Hingga saat ini belum ditemukan pengobatan yang adekuat pada kanker leher rahim. Telomerase merupakan molekul yang terdapat pada kanker leher rahim. Ditemukan aktifitas telomerase lebih dari 95% pada kanker leher rahim. Telomerase tidak ditemukan pada sel normal, telomerase berperan sangat aktif dalam pembelahan sel kanker. Pengobatan kanker leher rahim melalui penghambatan protein telomerase diharapkan dapat menjadi suatu terapi yang spesifik dan memberikan efek samping yang minimal pada sel normal. Tujuan penelitian ini adalah menghasilkan antibodi poliklonal dan mengujicobakannya pada sel HeLa. Produksi antibodi menggunakan vektor kelinci, antibodi yang dihasilkan kelinci dipurifikasi menggunakan metode SAS. Antibodi selanjutnya dideteksi menggunakan metode *Western Blotting* dan *ELISA*. Antibodi diujicobakan pada sel HeLa dan diamati menggunakan immunositokimia dan aktifitas proliferasinya diamati menggunakan MTT assay. Hasilnya terdapat pita pada western blotting pada berat molekul 58 Kda dan juga hasil ELISA menunjukkan adanya kesamaan titer antibodi dengan konsep imunologi. Immunositokimia menunjukkan adanya peningkatan ikatan antigen antibodi setiap kali dosis antibodi ditingkatkan. Hasil MTT assay menunjukkan terdapat penurunan aktifitas proliferasi sel HeLa pada dosis optimum 2  $\mu$ L dengan  $p=0.032$ . kesimpulan dari penelitian ini adalah antibodi telomerase berpotensi untuk dikembangkan sebagai suatu pengobatan kanker leher rahim.

Kata kunci : telomerase, antibodi telomerase, ELISA , Western Blotting, Immunositokimia, MTT assay

## ABSTRACT

Hidayatullah, Furqan. 2013. **Telomerase Antibody Effect On Cervical Cancer Cell:**

**Biomolecular Approach.** Final assignment, Medical program, Faculty of Medicine, Brawijaya University. Supervisor: Prof. Dr. dr. M Rasjad Indra, Ms

Cervical cancer is one of the most deadly cancer in Indonesia, it has the highest mortality rate among others cancers. Cervical cancer therapy has not been found. Telomerase is known as one of the most important molecule in cervical cancer, it is found more than 95% in cervical cancer cell. However, telomerase is not found in normal human cell. Telomerase is known as a molecule that has some critical rules in cell proliferation. Cervical cancer treatment based on telomerase inhibition is believed to be one of the best solution to treat cervical cancer beside of that telomerase is not found in normal human cell therefore it can minimize the side effect of cancer treatment. This research are aims to produce polyclonal telomerase antibody and to see if there is any effect of telomerase antibody in Hela cell culture. Antibody was produce using two rabbits, rabbit's serum was collected and purified using SAS (Saturated ammonium sulfate). Antibody was detected using western blotting and ELISA. Telomerase antibody effect in hela cell line was observed using immunocytochemistry and MTT assay method. The result are there is a band shows in 58 kda using western blotting, ELISA shows same graphic of telomerase antibody titer and immunology titer. Immunocytochemistry shows there is an increasases binding site of telomerase and telomerase antibody in hela cell as many as telomerase antibody added. MTT assay shows there is a decreases number of hela cell proliferation as many as antibody doses increases. MTT assay suggest that hela cell's proliferation is significantly decreased at 2 $\mu$ l of antibody dose ( $p= 0.032$ ). This research suggest that telomerase antibody has a potention to be developed as human cervical cancer treatment.

Keyword: telomerase, telomerase antibody, ELISA, Western Blotting, Immunocytochemistry, MTT assay

