INTISARI

Penemuan suatu metode baru untuk dapat mendeteksi secara dini kanker ovarium secara sensitif, spesifik, dan non invasif merupakan kunci dalam keberhasilan pencegahan dan terapi. Selain itu diperlukan pula strategi *targeted therapy* yang dapat meningkatkan keberhasilan manajemen kanker ovarium. MikroRNA (miRNA) diketahui memiliki peran dalam menghambat dan mendegradasi mRNA sehingga mempengaruhi perkembangan kanker. Pengembangan pengobatan dengan miRNA merupakan pendekatan yang menjanjikan, sehingga dilakukan pengembangan terapi menggunakan mikroRNA sintesis, *mimic* dan *antagonist* mikroRNA. Penelitian ini bertujuan untuk mengetahui pengaruh pemberian *mimic* miR-155-5p terhadap mikroRNA yang *downregulation* dan *antagonist* miR-324-5p terhadap mikroRNA yang *upregulation* serta pengaruhnya terhadap proliferasi, apoptosis, dan migrasi sel kanker ovarium SKOV3. Isolasi RNA dilakukan menggunakan *miRCURY RNA Isolation Kit Cell and Plants*. Sintesis cDNA menggunakan *universal* cDNA *synthesis kit* II. Kultur sel yang sudah ditransfeksi dengan *mimic*, *antagonist*, serta kombinasinya dilakukan kuantifikasi mikroRNA dengan qPCR, uji kinetika proliferasi dengan MTT *assay*, uji apoptosis dengan flowsitometri, dan uji migrasi dengan *wound healing assay*. Hasil penelitian ini menunjukkan bahwa pemberian *mimic* miR-155-5p dapat meningkatkan jumlah ekspresi miR-155-5p endogen sebanyak 128,59 kali, pemberian *antagonist* miR-324-5p menurunkan ekspresi miR-324-5p endogen sebanyak 47,29 kali, sehingga dapat menghambat proliferasi sel, menginduksi apoptosis sel, dan menghambat migrasi sel SKOV3.

Kata kunci: kanker ovarium, SKOV3, mikroRNA *mimic* miR, *antagonis* miR

ABSTRACT

The discovery of a new method to detect early ovarian cancer sensitively, specifically, and noninvasivelly werw the key to be success in prevention and therapy. Beside, it was also required the targeted therapy strategy that can increase the successful of ovarian cancer management. MicroRNA has a role in inhibit and degrade mRNA so it affected the cancer development. The development of a treatment with microRNA is a promising approach, so it was done to develop the therapy using synthetic microRNA, mimic and antagonist. The aims of the study were to find out the influence of giving mimic miR-155-5p towards the downregulation microRNA and antagonist miR-324-5p towards upregulation microRNA that influenced towards the proliferation, apoptosis, and migration of ovarian cancer cells SKOV3. The isolation of RNA was done using miRCURY RNA Isolation Kit Cell and Plants. The synthesis of cDNA was done using universal cDNA synthesis kit II. Cell culture was already be transfection using mimic, antagonist, and combination were done by quantifying the qPCR, proliferation kinetics assay was done using the MTT, apoptosis assay was done using the flow cytometry, and cell migration was done using wound healing assay. The result of the study showed that the giving of the mimic miR-155-5p could increase the number of expression miR-155-5p as much as 128,59X, the giving of the antagonist miR-324-5p could increase the number of expression miR-324-5p as much as 47,29X, it could inhibit cell proliferation, induce apoptosis, and inhibit cell migration SKOV3.

Keywords : ovarian cancer, SKOV3, microRNA, mimic, antagonist