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Extended Abstract
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Clinical Oncology 2020: Effect of Antagonis Mirna to repress MIR-324-5P function and decrease Ovarian Cancer cell line proliferation - Ysrafil, Gadjah Mada University, Indonesia

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Background MicroRNAs are short-sequence RNAs that regulate gene expression by targeting mRNAs. Recent studies reveal that there is a group miRNA that plays important role on worsening of ovarian cancer prognosis because the expression are very hight (oncomiRNA). miR-325-5p is an oncomiRNA that upregulated in ovarian cancer cell. The miRNA known play important role in apoptotic of ovarian cancer.

Objective aim of this study is to develop microRNA targeted therapy by targeting miRNA-324-5p function use antimiR-324-5p.

Method Chitosan nanoparticle was used to antimiR-324-5p delivery on SKOV3 cell line. Cytotoxicity effect of antimiRNA was assessed by MTT Assay. Anticancer mechanism study was conduct by in silico analysis use online bioinformatic tools miRTaRBase and StarmiRDB that combine with Genecard to predict target gene of antimiR and validate by qPCR.

High-throughput sequencing was used to screen out the differentially expressed lncRNAs between 20(S)-Rg3-treated and non-treated SKOV3 cells. The levels of lncRNA H19 and miR-324-5p were manipulated in SKOV3 and A2780, and the glucose consumption, lactate production and PKM2 protein level were detected. Dual-luciferase reporter assay and RIP were utilized to verify the direct binding of H19 to miR-324-5p and miR-324-5p to PKM2. Cell proliferation was examined by CCK8 and colony formation assay. Nude mice subcutaneous xenograft tumor models were established to evaluate the impact of miR-324-5p on tumor growth in vivo.

Results The results of qPCR analysis showed, endogenous miRNA-324-5p decreased after 24 hour transfection of antagonis miRNA. Furthermore, the MTT assay results showed that antimiRNA was able to inhibit SKOV3 cell proliferation (80 nM 31,87% $P < 0,05$). An Insilico analysis found that miR-324-5p can regulate BCL2 and prove by validation result reveal that antimiR can decrease mRNA BCL2 expression.

Conclution In sumary we conclude that antimiR-324-5p can act as microRNA based therapy to decrease ovarian cancer proliferation.

Keyword: antimiR-324-5p, SKOV3, Ovarian Cancer, Chitosan Nanoparticle

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