ANALISIS PERBEDAAN MARKA GEN PENUAAN MMP-9 PADA RNA SEL FIBROBLAS YANG DIINDUKSI ULTRAVIOLET B

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ABSTRAK

Latar Belakang: Penuaan merupakan penurunan fungsional organ yang bergantung pada waktu. Baik faktor eksternal maupun internal berkontribusi pada penuaan. Matriks metaloproteinase 9 merupakan salah satu metaloenzim proteolitik kompleks yang berperan pada degradasi matriks ekstraselular pada kulit maupun organ lainnya. Ultraviolet B adalah salah satu ultraviolet yang dapat mempercepat terjadinya penuaan. Manusia sering terpapar sinar ultraviolet B melalui sinar matahari. **Metode:** Penelitian dilakukan dengan desain penelitian eksperimental, *true experimental* dengan menggunakan *posttest-only control design*. Hasil data yang didapatkan kemudian diolah menggunakan SPSS dengan uji kenormalan Shapiro Wilk dan uji ANOVA. Hasil signifikan apabila didapatkan p-value < 0,05. **Hasil:** Hasil uji ANOVA yang menunjukkan nilai Sig < 0,05 sehingga didapatkan peningkatan tetapi tidak signifikan. **Kesimpulan:** Terjadi peningkatan marka gen penuaan MMP-9 yang secara statistik tidak signifikan pada RNA sel fibroblas yang tidak diinduksi UVB dan diinduksi UVB dalam waktu pajanan 24 menit, 48 menit, dan 96 menit.

Kata kunci: Matriks metaloproteinase 9, penuaan, ultraviolet B.

ANALYSIS OF MMP-9 AGING GENE MARKERS DIFFERENCE IN FIBROBLASTS CELL RNA INDUCED BY ULTRAVIOLET B

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ABSTRACT

Background: Aging is a time-dependent decline in organ function. Both external and internal factors contribute to aging. Matrix metalloproteinase 9 is one of the complex proteolytic metalloenzymes that plays a role in the degradation of the extracellular matrix in the skin and other organs. Ultraviolet B is one of the ultraviolets that can accelerate aging. Humans are often exposed to ultraviolet B rays through sunlight. Method: The study was conducted with an experimental research design, true experimental using a posttest-only control design. The data obtained were then processed using SPSS with the Shapiro Wilk normality test and the ANOVA test. Significant results if the p-value <0.05 is obtained. Results: The results of the ANOVA test showed a Sig value <0.05. Thus, the results were increased but statistically not significant. Conclusion: There was an increase in the MMP-9 aging gene marker which was statistically insignificant in the RNA of fibroblast cells that were not induced by UVB and induced by UVB in exposure times of 24 minutes, 48 minutes, and 96 minutes.

Keywords: Matrix metalloproteinase 9, aging, ultraviolet