

# Analisis Korelasi Metilasi DNA dengan Ekspresi mRNA Nerve Growth Factor (NGF) pada Sampel Darah Menstruasi Wanita Endometriosis = Correlation Analysis of DNA Methylation and mRNA Expression of Nerve Growth Factor (NGF) in Menstrual Blood Samples of Women with Endometriosis

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## Abstrak

Nerve Growth Factor (NGF) diketahui memiliki konsentrasi yang cenderung lebih tinggi pada wanita endometriosis dibandingkan dengan wanita tanpa endometriosis. Metilasi DNA pada daerah promotor NGF diyakini sebagai salah satu penyebab meningkatnya konsentrasi NGF pada wanita endometriosis. Penelitian ini dilakukan untuk mengetahui korelasi antara metilasi DNA dengan ekspresi mRNA NGF pada darah menstruasi wanita endometriosis. Sebanyak 10 sampel darah menstruasi dari masing-masing wanita endometriosis dan wanita tanpa endometriosis digunakan dalam penelitian ini. Tingkat metilasi DNA NGF dihitung menggunakan Methylation-specific Polymerase Chain Reaction (MSP-PCR), kemudian intensitas pita yang muncul diukur menggunakan software ImageJ. Nilai ekspresi mRNA NGF dihitung menggunakan Quantitative Real-Time Polymerase Chain Reaction (qRT PCR). Analisis korelasi, selanjutnya, dilakukan menggunakan aplikasi SPSS. Hasil penelitian menunjukkan bahwa tingkat metilasi DNA NGF memiliki tendensi yang rendah pada darah menstruasi wanita endometriosis sebesar 35,27%. Ekspresi relatif mRNA NGF menunjukkan tendensi peningkatan 19,229 lebih tinggi pada darah menstruasi wanita endometriosis. Tingkat metilasi DNA dan ekspresi mRNA NGF tidak menunjukkan perbedaan baik pada darah menstruasi wanita endometriosis maupun wanita tanpa endometriosis dengan nilai  $p > 0,05$ . Korelasi metilasi DNA dengan ekspresi mRNA NGF pada darah menstruasi wanita endometriosis tidak dapat dianalisis karena data yang tersedia sangat terbatas.

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Nerve Growth Factor (NGF) is known to have higher concentrations in women with endometriosis compared to women without endometriosis. DNA methylation in the NGF promoter region is believed to cause the increase of NGF concentrations in women with endometriosis. This study is conducted to determine the correlation between DNA methylation and mRNA expression of NGF in menstrual blood of women with endometriosis. A total of 10 menstrual blood samples from women with endometriosis and women without endometriosis were used in this study. DNA methylation level of NGF was measured using Methylation-specific Polymerase Chain Reaction (MSP-PCR) and the intensity of the bands were subsequently measured using ImageJ software, while mRNA expression values of NGF were measured using Quantitative Real-Time Polymerase Chain Reaction (qRT PCR). Furthermore, the correlation analysis was performed using the SPSS application. The results exhibited that the methylation level of NGF shows a low tendency in menstrual blood of women with endometriosis of 35.27%. The relative mRNA expression of NGF showed a tendency to increase 19,229-fold higher in menstrual blood of women with endometriosis. The DNA methylation level and mRNA expression of NGF showed no difference in both menstrual blood of women with endometriosis and women without endometriosis with  $p$  value  $> 0,05$ . The correlation between DNA methylation and mRNA expression of

NGF in menstrual blood of women with endometriosis could not be analyzed because of very limited data.