

## Hubungan polimorfisme gen MBL2 G161A dengan kerentanan karies = Association of MBL2 G161A gene polymorphism with caries susceptibility

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### Abstrak

Latar Belakang: Karies gigi adalah penyakit dan infeksi rongga mulut yang paling umum terjadi di dunia. Karies merupakan penyakit multifaktorial yang dipengaruhi oleh faktor hospes, agen, lingkungan dan waktu. Kondisi dari suatu hospes dipengaruhi oleh gen yang dimiliki hospes, seperti gen MBL2. Gen MBL2 menginstruksikan pembentukan kompleks protein yang akan berikatan dengan agen patogen dan bekerja sama dengan sistem imun menghancurkan agen patogen pada lingkungan oral. Penelitian mengenai polimorfisme gen MBL2 G161A pada penderita karies telah dilakukan di berbagai negara, akan tetapi penelitian tersebut belum pernah dilakukan di Indonesia. Oleh karena itu, penelitian ini dilakukan untuk mengetahui hubungan gen MBL2 G161A pada penderita karies di Indonesia.

Tujuan: Mengetahui hubungan antara polimorfisme gen MBL2 G161A pada penderita karies di Indonesia.

Metode: Analisis polimorfisme gen MBL2 G161A dilakukan dengan metode PCR-RFLP dengan enzim restriksi BanI.

Hasil: Dalam penelitian ini, pada kelompok karies ditemukan enam sampel dengan genotip GG, 29 sampel dengan genotip GA, dan 15 sampel dengan genotip AA. Sedangkan pada kelompok non-karies, ditemukan 43 sampel dengan genotip GG, tujuh sampel dengan genotip GA, dan tidak ditemukan genotip AA. Pada kelompok karies ditemukan 42 alel G dan 59 alel A, dan pada kelompok non-karies ditemukan 93 alel G dan 7 alel A.

Kesimpulan: Terdapat perbedaan bermakna pada distribusi polimorfisme gen MBL2 G161A antara kelompok karies dengan non-karies ( $p = 0.001$ ).

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Background: Dental caries is the most common disease and infection of the oral cavity in the world. Caries is a multifactorial disease that is influenced by host, agents, environment and time factors. The condition of a host is influenced by the host's genes, such as the MBL2 gene. The MBL2 gene instructs the formation of a protein complex that binds to pathogens and works together with the immune system to destroy pathogens in the oral environment. Research on the MBL2 G161A gene polymorphism in caries patients has been carried out in various countries, but such research has never been conducted in Indonesia. Therefore, this study was conducted to determine the relationship of the MBL2 G161A gene in caries patients in Indonesia.

Objective: To determine the relationship between the MBL2 G161A gene polymorphism in caries patients in Indonesia.

Methods: Analysis of the MBL2 G161A gene polymorphism was carried out by the PCR-RFLP method with the BanI restriction enzyme.

Results: In this study, in the caries group there were six samples with GG genotype, 29 samples with GA genotype, and 15 samples with AA genotype. Whereas in the non-caries group, there were 43 samples with GG genotype, seven samples with GA genotype, and no AA genotype. In the caries group found 42 G alleles and 59 A alleles, and in the non-caries group 93 G alleles and 7 A alleles were found.

Conclusion: There were significant differences in the distribution of the MBL2 G161A gene polymorphism between caries and non-caries groups ( $p = 0.001$ ).