

## Polimorfisme Gen Transferrin Receptor TFRC (rs3817672) pada Penderita Karies = Transferrin Receptor TFRC (rs31787672) Gene Polymorphism in Caries Patients

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### Abstrak

Latar Belakang: Karies gigi adalah penyakit dan infeksi rongga mulut yang paling umum terjadi di dunia. Karies merupakan penyakit yang multifaktorial yang dipengaruhi oleh faktor host, agent, lingkungan dan waktu. Kondisi dari suatu host dipengaruhi oleh gen yang dimiliki host, seperti gen TFRC rs3178762. Gen TFRC rs3178762 menginstruksikan pembentukan kompleks protein yang akan berikatan dengan patogen dan bekerja sama dengan sistem imun menghancurkan patogen pada lingkungan oral. Penelitian mengenai polimorfisme gen TFRC rs3178762 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 TFRC rs3178762 pada penderita karies di Indonesia. Tujuan: Mengetahui hubungan antara polimorfisme gen TFRC rs3178762 pada penderita karies di Indonesia. Metode: Analisis polimorfisme gen TFRC rs3178762 dilakukan dengan metode PCR-RFLP dengan enzim restriksi MspI. 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 kontrol, 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 kontrol ditemukan 93 alel G dan 7 alel A. Kesimpulan: Terdapat perbedaan bermakna pada distribusi polimorfisme gen TFRC rs3178762 antara penderita karies dengan kelompok kontrol ( $p = 0.001$ ).

.....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 Gen TFRC rs3178762 gene. The Gen TFRC rs3178762 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 Gen TFRC rs3178762 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 Gen TFRC rs3178762 gene in caries patients in Indonesia. Objective: To determine the relationship between the Gen TFRC rs3178762 gene polymorphism in caries patients in Indonesia. Methods: Analysis of the Gen TFRC rs3178762 gene polymorphism was carried out by the PCR-RFLP method with the MspI 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 control 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 control group 93 G alleles and 7 A alleles were found.

Conclusion: There were significant differences in the distribution of the Gen TFRC rs3178762 gene polymorphism between caries and control groups ( $p = 0.001$ ).