

## Polimorfisme Gen Vitamin D Receptor TaqI (rs731236) pada Penderita Karies = Vitamin D Receptor TaqI (rs731236) Gene Polymorphism in Caries Patients

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### Abstrak

Latar Belakang: Vitamin D Reseptor (VDR) merupakan protein yang mengatur fungsi vitamin D biologis. Vitamin D berperan penting dalam pembentukan gigi, terutama ketika kalsifikasi email dan dentin, serta berperan dalam menjaga keseimbangan fosfat dan ion kalsium, yang merupakan faktor penting dalam perlindungan gigi. VDR. aktivitas protein dipengaruhi oleh gen VDR. Karies merupakan penyakit multifaktorial, dimana faktor Genetika juga berperan dalam mempengaruhi tingkat kerentanan seseorang terhadap karies. Adanya polimorfisme pada gen VDR diduga mempengaruhi tingkat kerentanan pejamu terhadap karies melalui perubahan yang terjadi pada metabolisme kalsium. Tujuan: Untuk mendeteksi keberadaan polimorfisme gen VDR TaqI (rs731236) di penderita karies di Indonesia. Metode: 100 bahan biologis yang disimpan dalam bentuk DNA diambil dari sampel darah, terdiri dari 50 sampel karies dan 50 sampel kontrol dianalisis menggunakan teknik PCR-RFLP. Analisis RFLP dilakukan dengan menggunakan enzim restriksi TaqI. Analisis statistik dilakukan dengan menggunakan uji eksak Fisher dan uji Koreksi kontinuitas. Hasil: Pada penelitian ini ditemukan kelompok karies bahwa tidak ada sampel yang memiliki genotipe CC, 4 sampel memiliki genotipe CT, dan 46 sampel memiliki genotipe TT. Selain itu, terdapat 4 alel C dan 96 alel T. Genotipe dan alel polimorfik lebih banyak ditemukan pada kelompok karies (100% dan ). 96%) dibandingkan dengan kelompok kontrol (88% dan 84%). Kesimpulan: Polimorfisme gen VDR TaqI (rs731236) ditemukan pada pasien karies. Ada perbedaan yang signifikan dalam distribusi genotipe dan alel dari VDR TaqI. polimorfisme gen (rs731236) antara pasien karies dan kelompok kontrol ( $p < 0,05$ ).

.....Background: Vitamin D Receptor (VDR) is a protein that regulates the biological function of vitamin D. Vitamin D plays an important role in tooth formation, especially when calcification of enamel and dentin, and plays a role in maintaining the balance of phosphate and calcium ions, which are important factors in tooth protection. VDR. protein activity is influenced by the VDR gene. Caries is a multifactorial disease, where genetic factors also play a role in influencing a person's level of vulnerability to caries. The presence of polymorphisms in the VDR gene is thought to affect the level of host susceptibility to caries through changes that occur in calcium metabolism. Objective: To detect the presence of the VDR TaqI gene polymorphism (rs731236) in caries sufferers in Indonesia. Methods: 100 biological materials stored in the form of DNA were taken from blood samples, consisting of 50 caries samples and 50 control samples were analyzed using PCR-RFLP technique. RFLP analysis was performed using the restriction enzyme TaqI. Statistical analysis was performed using Fisher's exact test and continuity correction test. Results: In this study, the caries group found that none of the samples had the CC genotype, 4 samples had the CT genotype, and 46 samples had the TT genotype. In addition, there were 4 C alleles and 96 T alleles. Genotypes and polymorphic alleles were more commonly found in the caries group (100% and ). 96%) compared to the control group (88% and 84%). Conclusion: VDR TaqI gene polymorphism (rs731236) was found in caries patients. There were significant differences in the genotype and allele distribution of the VDR TaqI. gene polymorphism (rs731236) between caries patients and control group ( $p < 0.05$ ).