Pengaruh Streptococcus Mutans Binding Salivary Protein Yang Diisolasi Dari Subjek Pelari Dan Nonpelari Terhadap Pertumbuhan Biofilm Porphyromonas gingivalis Secara In Vitro = The Effect Of Streptococcus mutans Binding Salivary Protein From Runners And Non-Runners On The Growth Of Porphyromonas gingivalis Biofilm In Vitro

Putu Ayu Sawitri Octavira, author

Abstrak

ABSTRAK
Latar Belakang: Aktifitas fisik seperti berlari dapat mempengaruhi sekresi dan komposisi saliva, termasuk protein saliva di dalam rongga mulut, salah satunya protein SMBP. Protein saliva diketahui dapat memfasilitasi pertumbuhan biofilm bakteri. Tujuan: Mengetahui pengaruh protein Streptococcus mutans binding salivary protein yang diisolasi dari subjek pelari dan nonpelari terhadap pertumbuhan biofilm P. gingivalis. Metode: Studi eksperimental ini menggunakan teknik sampling purposive. Pemilihan subjek pelari dan nonpelari didasarkan riwayat lari dan pengukuran VO2max. Streptococcus mutans binding salivary protein diidentifikasi menggunakan SDS-PAGE. Streptococcus mutans binding salivary protein didapatkan melalui interaksi protein saliva pelari dan nonpelari dengan bakteri S. mutans. Uji biofilm pertumbuhan bakteri P. gingivalis ATCC 33277 menggunakan pewarnaan crystal violet. Data yang didapat kemudian dilakukan uji statistik menggunakan uji korelasi. Hasil: Protein SMBP memfasilitasi pertumbuhan biofilm P. gingivalis pada inkubasi 3 jam maupun 24 jam. Kesimpulan: Streptococcus mutans binding salivary protein yang diisolasi dari subjek pelari dan nonpelari memfasilitasi perumbuhan biofilm P. gingivalis.
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ABSTRACT
Background Physical activity such as running can affect salivary secretion and composition, including salivary proteins in the oral cavity, such as salivary protein SMBP. Salivary proteins are known to inhibit or facilitate the growth of bacterial biofilms. Salivary protein can facilitate or inhibit the growth of bacteria. Objective To determine the effect of Streptococcus mutans binding salivary protein towards the growth of Porphyromonas gingivalis biofilm. Methods This experimental study used purposive sampling and VO2max test to determine runners and non runners. Protein profile samples were identified using SDS PAGE. S. mutans salivary protein was obtained from binding of salivary protein and S. mutans. Biofilm assay P. gingivalis ATCC 33277 growth towards Streptococcus mutans binding salivary protein salivary protein was conducted using the dye crystal violet assay. The data was statistically analyzed using correlation test. Results Salivary protein of Streptococcus facilitate the growth of Porphyromonas gingivalis biofilm on incubation time 3 and 24 hours. Conclusion Salivary protein of Streptococcus mutans collected from runners and non runners facilitate the growth of Porphyromonas gingivalis biofilm.