

Dampak pemberian streptococcus mutans-binding salivary protein dari saliva subjek pelari dan nonpelari terhadap pembentukan biofilm streptococcus salivarius = The Inhibition effect of streptococcus mutans binding salivary protein from saliva of runners and non runners towards biofilm formation of streptococcus salivarius

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Abstrak

Latar belakang: Aktivitas fisik, salah satunya adalah berolahraga, dapat menunjang sistem kekebalan tubuh.

Tujuan: Menganalisis pengaruh Streptococcus mutans-binding salivary protein SMBSP yang diseleksi dari saliva subjek pelari dan nonpelari terhadap pembentukan biofilm Streptococcus salivarius.

Metode: Uji hambat sel dan protein pembentukan biofilm Streptococcus salivarius ATCC 9222T yang sebelumnya sudah terdapat Streptococcus mutans-binding salivary protein, diinkubasi selama 3 jam dan 24 jam dan dilihat berdasarkan nilai optical density setelah dilakukan uji pewarnaan Crystal Violet.

Hasil: Streptococcus mutans-binding salivary protein dari pelari dan nonpelari pada fase adhesi dan fase maturasi tidak mempengaruhi pembentukan biofilm Streptococcus salivarius. Peningkatan konsentrasi SMBSP pelari dan nonpelari menurunkan pembentukan biofilm S. salivarius. Nilai optical density OD biofilm uji SMBSP pelari dan nonpelari waktu inkubasi 24 jam lebih tinggi dibandingkan waktu inkubasi 3 jam.

Kesimpulan: Adanya Streptococcus mutans-binding salivary protein dari pelari dan nonpelari tidak berpengaruh dalam pembentukan biofilm Streptococcus salivarius. Konsentrasi Streptococcus mutans-binding salivary protein dari saliva subjek pelari dan nonpelari yang meningkat memiliki dampak menurunkan pembentukan biofilm Streptococcus salivarius. Adanya peningkatan waktu berpengaruh dalam menurunkan pembentukan biofilm Streptococcus salivarius.

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Introduction: Exercise, as an example of physical activities, can support the human immune system.

Purpose: Analyzing the effect of Streptococcus mutans binding salivary protein selected from runners and non runners in Streptococcus salivarius biofilm formation.

Method: Inhibitory test was used by adding the Streptococcus salivarius into Streptococcus mutans binding salivary protein, incubated in 3 and 24 hours, and checked using optical density score of Crystal Violet staining.

Result: The Streptococcus mutans binding salivary protein SMBSP taken from runners and non runners effected to the biofilm formation of Streptococcus salivarius. The increased concentration of Streptococcus mutans binding salivary protein taken from runners and non runners effected on decreasing optical density score of biofilm formation of S. salivarius. The increased duration of incubation effected on decreasing optical density score of biofilm formation of S. salivarius.

Conclusion: Streptococcus mutans binding salivary protein selected from subject runners and non runners did not give any effect in biofilm formation of Streptococcus salivarius. However, the increased concentration of the protein inhibited the biofilm formation of S. salivarius. The increased duration of incubation effected on decreasing optical density score of biofilm formation of S. salivarius.