

## Pengaruh nano silver fluoride terhadap viabilitas streptococcus mutans dalam berbagai fase pembentukan biofilm = The effect of nano silver fluoride to the viability of streptococcus mutans in various phases of biofilm formation

Novia Khoirunnisa, author

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### Abstrak

Latar Belakang: Nano Silver Fluoride NSF memiliki efek antibakteri terhadap Streptococcus mutans bakteri penyebab karies.

Tujuan: Menganalisis pengaruh NSF terhadap viabilitas S.mutans dalam berbagai fase pembentukan biofilm.

Metode: Biofilm S.mutans diinkubasi selama 4 jam fase adhesi, 12 jam fase akumulasi aktif dan 24 jam fase maturasi pada suhu 37 C. Ketiga model biofilm dipapar NSF dengan konsentrasi Ag 0,4 F- 2,26, Ag 0,9 F- 2,26, Ag 1,4 F- 2,26, Ag 1,9 F- 2,26 selama 1 jam. Persentase viabilitas dinilai dengan menggunakan MTT assay.

Hasil: Tidak ada perbedaan bermakna  $p > 0,05$  antara viabilitas biofilm pada fase adhesi, fase akumulasi aktif, ataupun fase maturasi.

Kesimpulan: NSF mampu menurunkan viabilitas biofilm S.mutans dalam berbagai fase pembentukan.

.....Background: Nano Silver Fluoride NSF has antibacterial effect against Streptococcus mutans that cause dental caries.

Objective: To analyze the effect of NSF on the viability of S.mutans in various phases of biofilm formation.

Methods: S.mutans biofilm was incubated for 4 hours adherence phase, 12 hours active accumulation phase and 24 hours maturation phase at 37 C then exposed by NSF at concentration Ag 0,4 F 2,26, Ag 0,9 F 2,26, Ag 1,4 F 2,26, Ag 1,9 F 2,26 for 1 hour. The percentage of viability was tested with MTT assay.

Result: Biofilm viability of S.mutans in various phases showed no significant difference  $p > 0,05$ .

Conclusion: NSF can reduce the viability of S.mutans in various phases of biofilm formation.