Kapasitas ekstrak Temulawak (Curcuma xanthorrhiza Roxb) sebagai anti Streptococcus mutans dalam menghambat demineralisasi email (in vitro)

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Abstrak

Xanthorrhizol yang di isolasi dari Temulawak dapat mempertahankan pH model biofilm in vitro selama 4 jam. Diketahui KBM ekstrak Temulawak terhadap S. mutans 25%.
Tujuan : Menganalisis efek ekstrak Temulawak 25% terhadap demineralisasi email yang terpapar biofilm S.mutans.
Metode : Model biofilm diperoleh dengan mengkultur S.mutans yang sudah ditanam dalam TYS broth selama 24 jam pada 6 well ?plate yang telah dilapisi pelikel. Ekstrak Temulawak dipaparkan pada model biofilm pada berbagai durasi antara 1-48 jam. Pengukuran pH menggunakan pH universal indicator. Model biofilm juga ditumbuhkan pada permukaan sample gigi. Pemaparan Ekstrak Temulawak dilakukan pada jam ke 16-20. Uji kekerasan mikro menggunakan indenter Knoop sebelum dan sesudah perlakuan.
Hasil : Sampai dengan jam ke 4, pH model biofilm yang terpapar Ekstrak Temulawak 25% tidak mengalami penurunan pH. Tidak terlihat efek Ekstrak Temulawak terhadap kekerasan permukaan email.
Kesimpulan : Ekstrak Temulawak 25% mampu menghambat penurunan pH biofilm, tetapi tidak berpengaruh terhadap demineralisasi email.
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Xanthorrhizol isolated from Java turmeric is able to maintain the pH of biofilm model in vitro for 4 hours. It was known that MBC of Java turmeric extract was 25%.
Purpose: To analyse the effect of 25% Java turmeric extract on email demineralization exposed to S. mutans biofilm.
Methods: Biofilm model was obtained by culturizing S. mutans which was cultured on TYS Broth during 24 hours on 6 well- plates which was layered by pellicle. Java turmeric Extract was added to biofilm model at various duration between 1-48 hours. pH measurement using pH universal indicator. Biofilm model was also cultured at tooth sample surface. Java turmeric extract was added at 16-20 hours. Micro hardness test was conducted using Knoop indenter before and after the intervention.
Result : After 4 hours, the pH of biofilm model which was exposed to Java turmeric 25% was not decreasing. No difference was found on the enamel micro hardness between experiment and control groups.
Conclusion : Java turmeric 25% is able to prevent reduction of biofilm pH, but does not have effect on enamel demineralization.