

Pengaruh ekstrak etanol temulawak terhadap viabilitas streptococcus mutans dan aggregatibacter actinomycetemcomitans (kajian dental biofilm studi in vitro) = The effect of curcuma xanthorrhiza ethanol extract to the viability of streptococcus mutans and aggregatibacter actinomycetemcomitans dental biofilm research in vitro study

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Abstrak

Temulawak memiliki efek antibakteri. *S. mutans* dan *A. actinomycetemcomitans* merupakan bakteri penyebab karies dan penyakit periodontal. Tujuan: Membandingkan efek ekstrak etanol temulawak terhadap viabilitas biofilm *S. mutans* dan *A. actinomycetemcomitans* single dan dual species dalam berbagai fase pembentukan. Metode: Model biofilm diinkubasi selama 4 jam, 12 jam, dan 24 jam, kemudian dipapar ekstrak etanol temulawak 0,5%-25%. Hasil: Viabilitas biofilm single species *S. mutans* lebih rendah ( $p < 0,05$ ) dibanding kelompok biofilm lain. Tidak ada perbedaan bermakna ( $p > 0,05$ ) antara viabilitas biofilm single species *A. actinomycetemcomitans* dan biofilm dual species. Kesimpulan: Ekstrak etanol temulawak lebih efektif menurunkan viabilitas biofilm single species *S. mutans*.

*Curcuma xanthorrhiza* has antibacterial property. *S. mutans* and *A. actinomycetemcomitans* cause caries and periodontal disease. Aim: Comparing *Curcuma xanthorrhiza* ethanol extract's to the viability of *S. mutans* and single and dual-species *A. actinomycetemcomitans* biofilm in different formation phases. Methods: Biofilm models were incubated for 4, 12, and 24 hours, then exposed to 0.5%-25% *Curcuma xanthorrhiza* extract. Result: Single species *S. mutans* biofilm's viability was significantly lower than other biofilm groups ( $p < 0.05$ ). Viability of single-species and dual-species *A. actinomycetemcomitans* biofilm showed no significant difference ( $p > 0.05$ ). Conclusion: *Curcuma xanthorrhiza* ethanol extract is more effective in decreasing the single-species *S. mutans* biofilm's viability.