

TINJAUAN PUSTAKA: PENGARUH *CHITOSAN* DALAM MENGHAMBAT PERTUMBUHAN BAKTERI RONGGA MULUT

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ABSTRAK

Latarbelakang: Keberhasilan perawatan saluran akar secara langsung dipengaruhi oleh kemampuan mengeliminasi mikroorganisme dan produknya dari sistem saluran akar. Bahan-bahan *dressing* yang digunakan oleh dokter gigi secara umum memiliki daya hambat terhadap bakteri, namun tidak bertahan lama, menimbulkan nekrosis, serta peradangan pada pulpa. Oleh karena itu, dikembangkan bahan alternatif yang memiliki efek antibakteri. *Chitosan* sebagai biomaterial di Kedokteran Gigi dapat dipertimbangkan karena memiliki daya antibakteri, bersifat alami, *biocompatible*, dan *biodegradable*. **Tujuan:** untuk mengetahui pengaruh *chitosan* dalam menghambat bakteri rongga mulut. **Metode:** Jenis dan rancangan ini adalah penelitian kepustakaan (*library research*) dengan perolehan data atau informasi dari mesin pencarian jurnal Google Scholar, Pubmed, dan EBSCO dengan *keyword antibacterial, biomaterial, chitosan, deasetilasi, infection, oral*. **Hasil:** dari hasil telaah pustaka diperoleh artikel sebanyak 15 artikel sebagai sumber referensi penelitian ini. *Chitosan* merupakan modifikasi senyawa kitin yang banyak terdapat dalam kulit luar hewan golongan *crustaceae*. Senyawa kitosan diperoleh dengan tahapan deproteinasi, demineralisasi, depigmentasi, dan deasetilasi 3 tahap. Kandungan *chitosan* berupa gugus *aminopolysacharida* dan enzim *lysosim* memiliki peran penting dalam menghambat pertumbuhan bakteri. Konsentrasi *chitosan* yang dapat digunakan sebagai konsentrasi hambat minimum (KHM) adalah kitosan, 1%, 5%, 10% dan 22,5%, sedangkan pada nanokitosan pada konsentrasi 1%, 2%, dan 22,5%. **Kesimpulan:** *Chitosan* mampu menghambat bakteri rongga mulut seperti bakteri *Streptococcus mutans*, *Staphylococcus aureus*, dan *Enterococcus faecalis*.

Kata Kunci: antibakteri, biomaterial, kitosan, deasetilasi, infeksi, rongga mulut

LITERATURE REVIEW: THE EFFECT OF *CHITOSAN* IN INHIBITING THE GROWTH OF MOUTH

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ABSTRACT

Background: The success of root canal treatment is directly influenced by the ability to eliminate microorganisms and their products from the root canal system. *Dressing* used by dentists generally have an inhibitory effect on bacteria, but do not last long, causing necrosis and inflammation of the pulp. Therefore, alternative materials have been developed that have antibacterial effects. Chitosan as a biomaterial in Dentistry can be considered because it has antibacterial properties, is natural, *biocompatible*, and *biodegradable*. **Purpose:** to determine the effect of *chitosan* in inhibiting oral bacteria. **Methods:** This type and design is a *library research* by obtaining data or information from search engines for journals Google Scholar, Pubmed, and EBSCO with the *keywords antibacterial, biomaterial, chitosan, deacetylation, infection, oral*. **Results:** From the results of the literature review, 15 articles were obtained as a reference source for this research. *Chitosan* is a modified chitin compound that is widely found in the outer skin of *crustaceans*. Chitosan compound was obtained by deproteination, demineralization, depigmentation, and deacetylation in 3 stages. The content of *chitosan* in the form of groups *aminopolysacharida* and the enzyme *lysosim* has an important role in inhibiting bacterial growth. *Chitosan* concentrations that can be used as minimum inhibitory concentrations (MIC) are chitosan, 1%, 5%, 10% and 22.5%, while nanochitosan at concentrations of 1%, 2%, and 22.5%. **Conclusion:** *Chitosan* is able to inhibit oral bacteria such as *Streptococcus mutans*, *Staphylococcus aureus*, and *Enterococcus faecalis*.

Keywords: *antibacterial, biomaterial, chitosan, deacetylation, infection, oral*