

OL 9 - Chewing-gum Containing Chitosan Effectively Inhibits the Growth of Cariogenic Bacteria

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We have already reported that chitosan inhibited growth of the cariogenic bacteria in vitro. This study was designed to evaluate whether chewing-gum containing chitosan effectively inhibited the growth of oral bacteria (total bacteria, total Streptococci, Streptococcus mutans) in saliva. Fifty healthy subjects, ranging in age 19 to 32 years, were recruited from the staffs and students of Nagasaki University School of Dentistry. For the slab chewing-gum study, the subjects chewed during five minutes and had a rest during five minutes. Each subject chewed 8 pieces of gums supplemented with or without chitosan for total 80 minutes. Two different types of chewing-gums were examined with at least one week as a rest period between treatments. This in vivo study was carried out by the double blind comparison test. Oral bacteria were significantly decreased in chitosan group. Especially, the number of Streptococcus mutans was maintained at about 20% level compared with that before gum-chewing, even at one hour after gum-chewing. These findings suggest that the supplementation of chitosan to chewing-gum is effective method to decrease the number of cariogenic bacteria for situations difficult to brush tooth such as the go-out and outside training.