ONLINE ISSN : 1881-3984
PRINT ISSN : 1344-6606

Food Science and Technology Research
Vol. 7 (2001) , No. 3 pp.262-264

[PDF (292K)] [References]

In vitro Bacteriostatic Effects of Dietary Polysaccharides

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(Received: May 2, 2001)
(Accepted: June 16, 2001)

The antimicrobial action of dietary polysaccharides on eight food-borne pathogenic bacteria were examined. Among the polysaccharides, the carrageenans showed the most pronounced inhibitory effect, the growth of all the bacterial strains except *Listeria monocytogenes* being significantly inhibited by them, particularly by ι-carrageenan. A growth-inhibition experiment using *Salmonella enteritidis* showed that the inhibitory effect of the carrageenans was not bactericidal but bacteriostatic. The removal of sulfate residues eliminated the bacteriostatic effect of ι-carrageenan, suggesting that the sulfate residue(s) in carrageenan played an essential role in this effect. The results of the present study suggest that dietary polysaccharides, and particularly carrageenans, may act as effective preservatives in various types of processed food.

Keywords: carrageenan, pectin, sulfated polysaccharide, antimicrobial activity, *Salmonella enteritidis*

[PDF (292K)] [References]

doi:10.3136/fstr.7.262

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