

Yoghurt and Grana cheese are dental caries-protective agents

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Milk proteins are precursors of many different biologically active peptides such as antihypertensive, antioxidative, antimicrobial, immunomodulatory, opioid and mineral carriers mainly the caseinophosphopeptides (CPPs) (1). They are phosphorylated casein-sequences produced by digestion of α_{s1} -, α_{s2} - and β -casein *in vitro* or in the digestive tract as well as by proteolytic activity of lactic bacteria in dairy product as cheese (2) and yoghurt (3). CPPs exhibit anti-caries activity relates to their ability to localize high levels of amorphous Ca^{2+} phosphate on tooth surface and, as a consequence, depress demineralization of first level lesions and enhance remineralization of tooth enamel (4, 5).

In this work were reported the *in vitro* results regarding the ability to prevent demineralization and promote remineralization of dental enamel of CPPs from yoghurt and Grana cheese compared to synthetic ones.

To this aim human molars were submitted to demineralisation by dipping in a) lactic acid solution (0.1M pH 4.8 and pH 3.97), b) lactic acid solution (0.1M) added with 1% (w/v) of synthetic CPPs (pH 4.8), c) lactic acid solution (0.1M) added with 10% (w/p) of Grana cheese (pH 4.8) and d) solution of yoghurt (pH 4.8 and pH 3.97).

Effects of these procedures were evaluated by quantitative (change in molar weight after demineralization procedure) and qualitative analysis by scanning electron microscopy (SEM). In each solution calcium level decreases due to calcium-CPPs transport from solutions to teeth while SEM analysis shows protective effects of dairy and synthetic CPPs. These results indicate that CPPs are a valid preventive system against first level demineralization of enamel and foods naturally rich in CPPs can be successfully used for caries prevention.

References

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