

Grytten, J., A. A. Scheie, and E. Giertsen. 1988. Synergistic antibacterial effects of copper and hexetidine against *Streptococcus sobrinus* and *Streptococcus sanguis*. *Acta Odontol.Scand.* 46:181-183.

Abstract: The aim of this study was to determine whether a combination of copper and hexetidine had a synergistic antibacterial effect against *Streptococcus sobrinus* OMZ 176 and *S. sanguis* 10556. Concentration ranges of the test agents alone and in combination were prepared by serial dilutions in microtiter trays with brain-heart infusion (BHI) broth as the bacterial growth medium. After incubation at 37 degrees C for 24 h, the minimum inhibitory concentration (MIC), corresponding to the lowest concentration showing no visible growth, was determined. Evaluated by the fractional inhibitory concentration index, a strong synergistic effect ranging from 0.39 to 0.40 was observed. A similar effect was also demonstrated by growth curves, which were constructed on the basis of growth in BHI broth with addition of MIC/4 of each agent alone or MIC/8 of each agent in combination. A probable explanation for these findings is that the surface-active hexetidine molecule alters the bacterial cell surfaces and thereby enables an increased amount of copper to be transported into the cell.