

# Determination of chlorhexidine by MALDI-TOF MS after application of different chlorhexidine formulations

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**Aim:** To determine chlorhexidine (CHX) retention in the oral cavity after application of different CHX formulations.

**Methods:** Five volunteers used different formulations of CHX: mouth rinses, spray, and toothpastes. After application, 2µL samples were taken from the saliva, buccal mucosa as well as in situ formed enamel pellicle at six time-points within 12h. Retention of CHX was measured using MALDI-TOF mass spectrometry.

**Results:** The CHX retention at the oral mucosa was higher than in saliva. The retention of CHX in the oral cavity after mouth rinsing or spray application was higher than after using of the toothpastes. The concentrations of CHX at the oral mucosa maintained at a level of micrograms per millilitre 12h after mouth rinsing, 10h after spray and 2h after toothpaste application.

**Conclusion:** There was a significant difference in CHX retention between the mouth rinse, spray, and toothpaste. The novel used method offered excellent quantification limits and readily permitted quantification of CHX.