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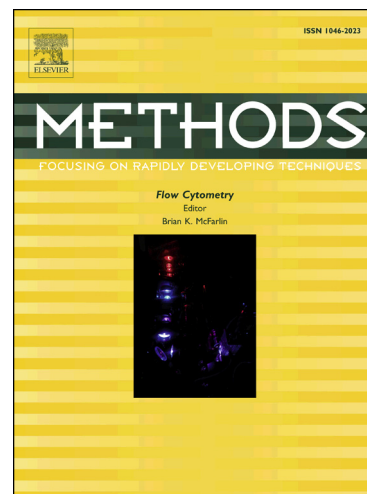
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A cytometric approach to follow variation and dynamics of the salivary microbiota

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Abstract

Microbial flow cytometry is an established fast and economic technique for complex ecosystem studies and enables visualization of rapidly changing community structures by measuring characteristics of single microbial cells. Cytometric evaluation routines are available such as flowCyBar which are useful for automatic data processing. Here, a cytometric workflow was established which allows to routinely analyze salivary microbiomes on the example of ten oral healthy subjects. First, saliva was collected within a 3-month period, cytometrically analyzed and the evolution of the microbiomes followed as well as the calculation of their intra- and inter-subject similarity. Second, the respective microbiomes were stressed by exposition to high sugar or acid concentrations and immediate changes were recorded. Third, bactericide solutions were tested on their impact on the microbiomes. In all three set ups huge intra-individual variations in cytometric community structures were found to be largely absent, even under stress, while inter-individual diversity was obvious. The bacterial cell counts of saliva samples were found to vary between 3.0×10^7 to 6.2×10^8 cells per sample and subject in undisturbed environments. The application of the two bactericides did not cause noteworthy diversity changes but the loss in cell

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