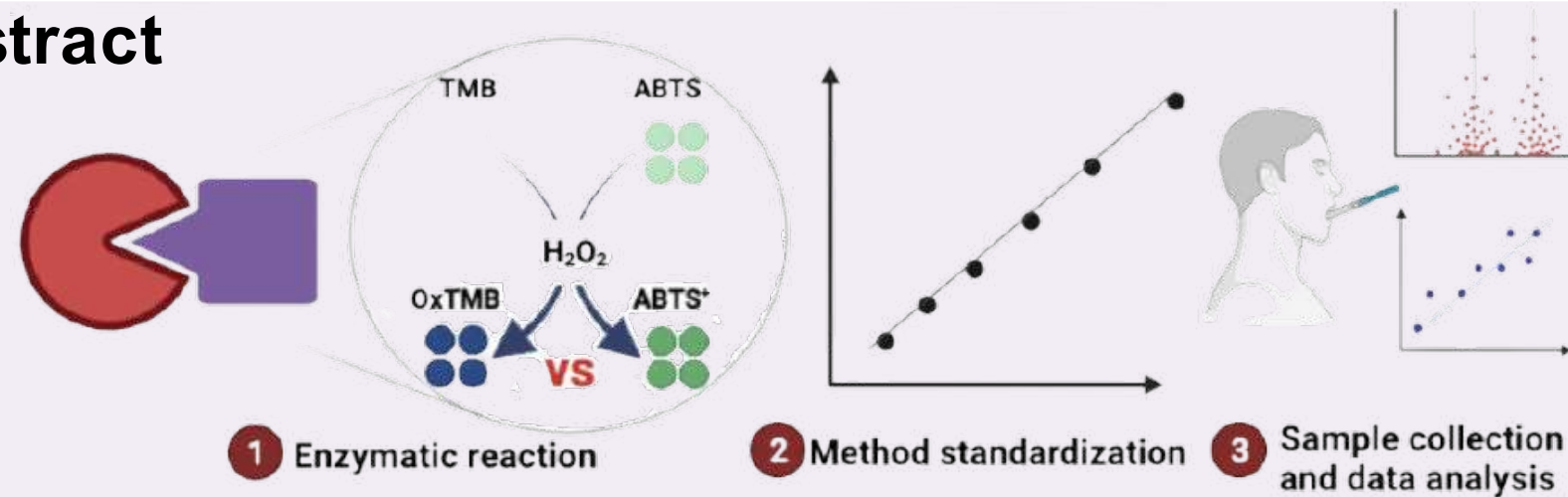


Comparison of two colorimetric methods for the quantification of salivary biomarkers with clinical significance in diabetes disease

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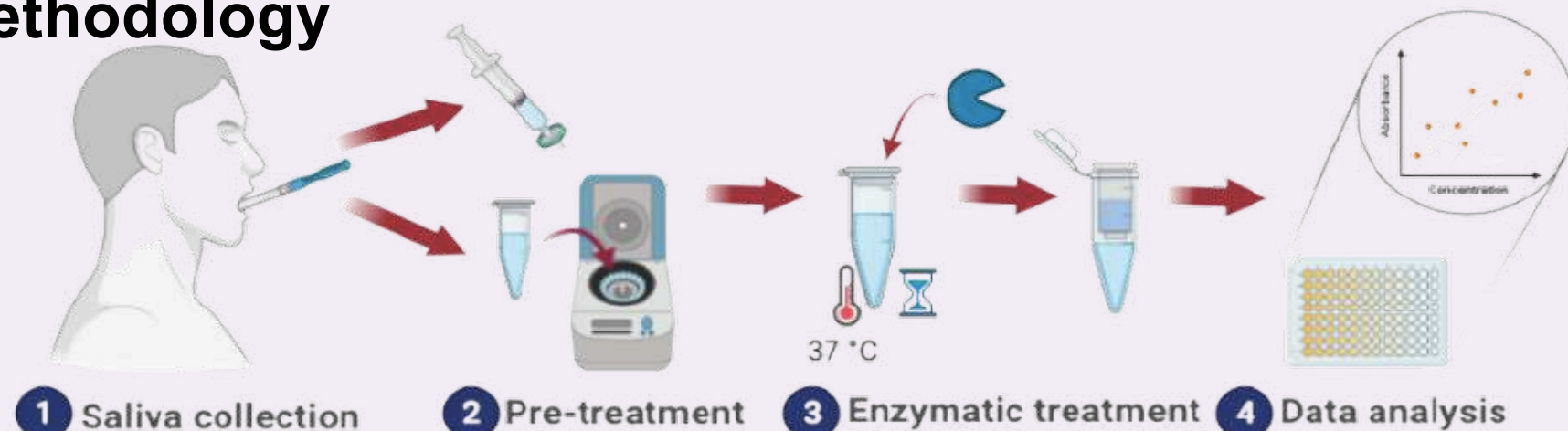
Abstract



Introduction

Diabetes mellitus is a global health problem. The incidence of this disease continues to increase, being one of the most alarming health problems¹. Its appearance is accompanied by changes in the concentration levels of biomarkers in different biofluids including saliva². The measurement of these biomarkers can improve the diagnosis, prognosis and control of the disease³⁻⁵. Therefore, this project aims to compare two dyes for the development, optimization and validation of a flexible enzymatic platform that allows the colorimetric quantification of biomarkers in saliva.

Methodology



Results

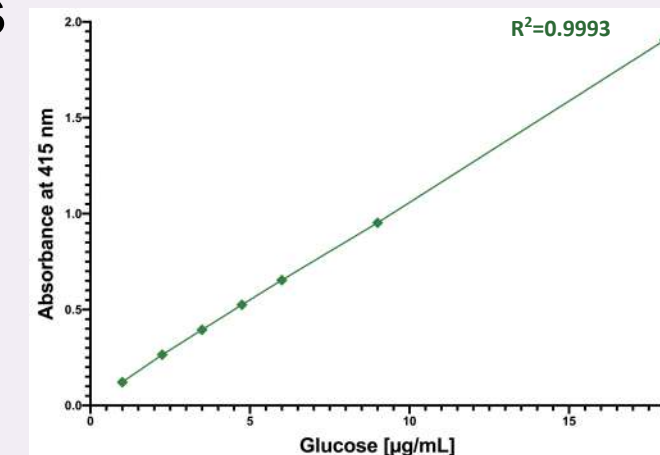


Figure 1. Calibration curve ABTS⁺.

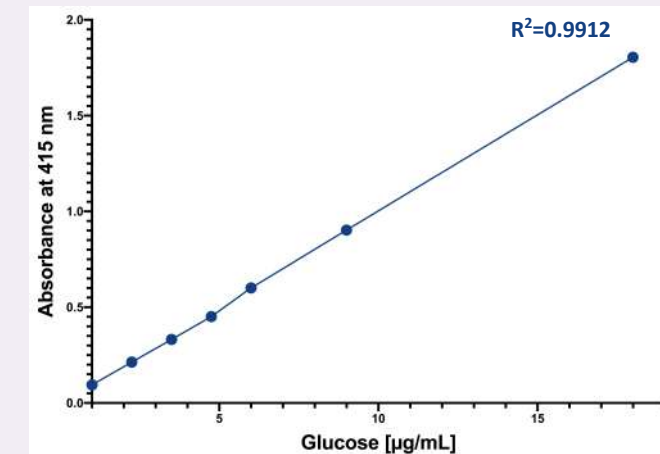


Figure 2. Calibration curve OxTMB

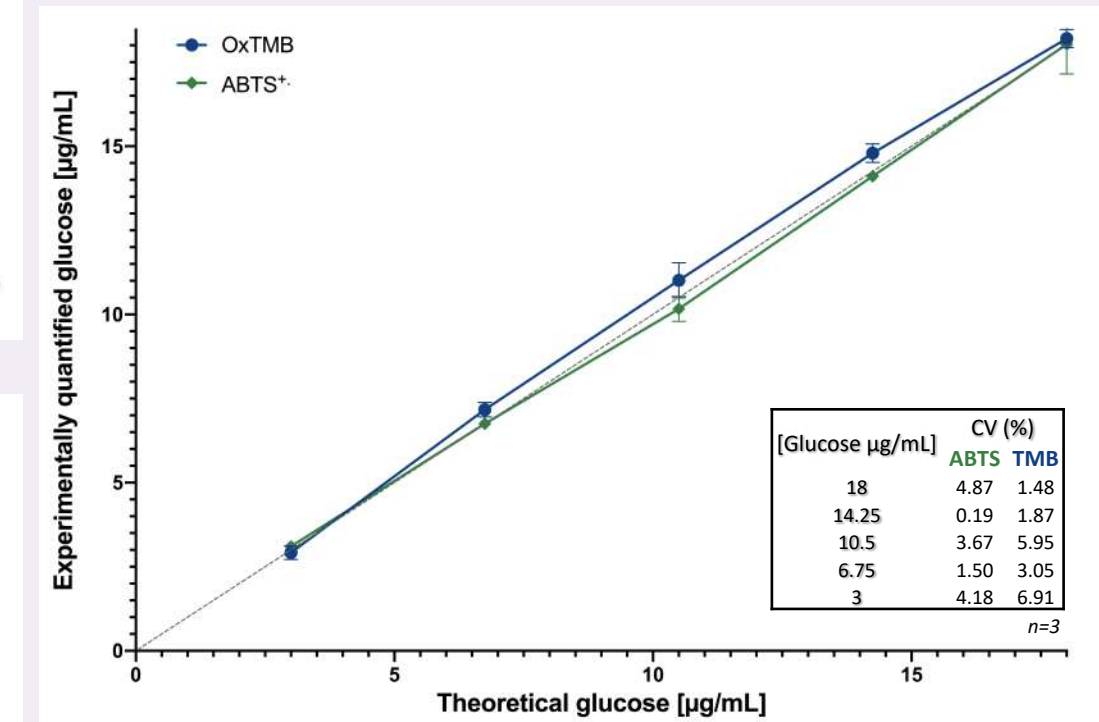


Figure 3. Scatterplot [added glucose] vs [quantified glucose]

Conclusions

The preliminary results of both calibration methods (ABTS and TMB) show a correlation higher than 95% with coefficients of variation less than 7% between the amount of biomarker added and quantified. In addition, the methods can detect glucose concentrations as low as 1 µg/mL in just 40 µL of saliva. Once the optimization stage is completed, the methodology will be validated using patient samples for the development of a flexible, simple, robust and economical methodology for the diagnosis of diabetes.

References

