

making a difference



**GLUCOSE  
STABILISATION  
RIGHT FROM  
THE BEGINNING**

**VACUETTE®**

**FC Mix Tube**

Effective glycolysis inhibition  
for precise determination of the  
in vivo blood sugar content.



**greiner**  
BIO-ONE

## POWDER ADDITIVE MIXTURE

for immediate  
stabilisation of blood  
sugar content



Stabilisation  
immediately  
after collection.

### GLUCOSE STABILISATION RIGHT FROM THE BEGINNING

Plasma glucose levels are essential for the evaluation of diabetes mellitus as well as gestational diabetes.

Diabetes mellitus is one of the most common metabolic disorders in the world. The breakdown of glucose (glycolysis) in venous blood samples is of great significance in pre-analytics, particularly in relation to the diagnosis of diabetes mellitus and gestational diabetes.

Greiner Bio-One has a solution in the form of the VACUETTE® FC Mix Tube.

This special additive mixture not only reduces the pH value and blocks the pH-dependent enzymes that would be active in the initial stage of the glycolysis cascade. The VACUETTE® FC Mix Tube from Greiner Bio-One can also stabilize the sample immediately after collection for up to 48 hours.

#### THE ADVANTAGES ARE CLEAR:

- / Based on the in vivo value (almost 100%)
- / Avoids false negative diagnoses of diabetes patients
- / Stabilisation allows for longer transport and storage times

## FC MIX PRESERVES

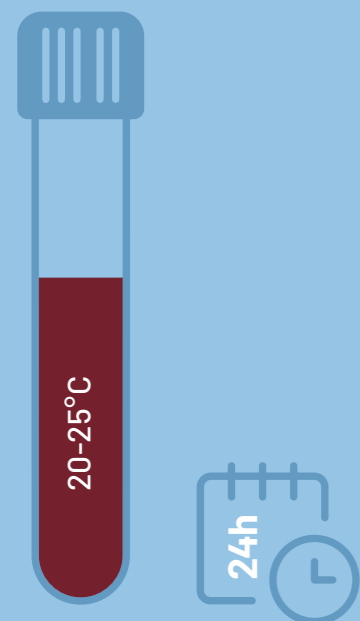
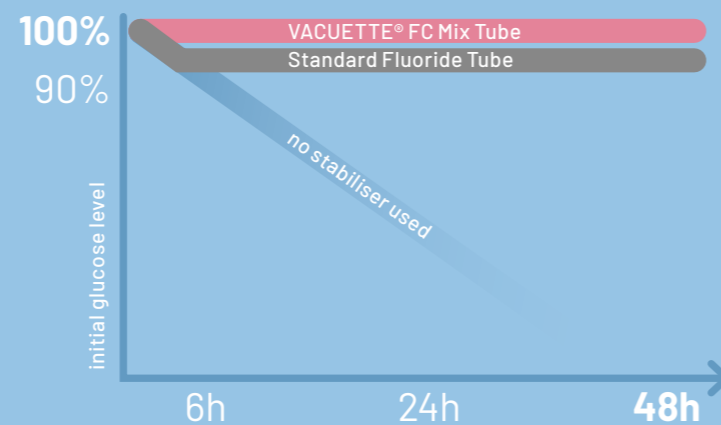
the in vivo concentration of glucose for up to 48 hours

# IMMEDIATE STABILISATION

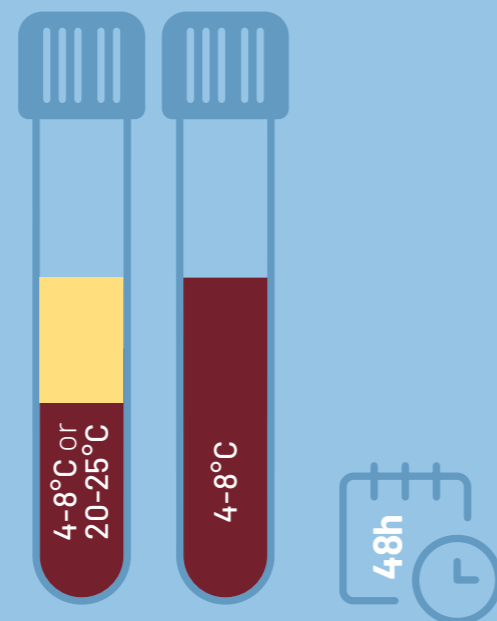
## INITIAL GLUCOSE LEVEL<sup>5</sup>

Greiner Bio-One has a solution to stop the breakdown of glucose in venous blood samples.

The citrate fluoride additive in the tube stabilises the in vivo concentration of glucose in the sample<sup>1</sup> right from the beginning.



Should the tubes be stored longer than 24 hours at room temperature, samples should be centrifuged after blood collection.



Centrifuged aliquots from FC Mix Tubes can be stored for up to 48 hours at room temperature. Tubes should be centrifuged within 20 minutes after blood collection. Cooling of the samples is also suitable for 48 hours glucose stabilization.

## TRIED-AND-TESTED VACUUM TECHNOLOGY

The shatter-proof tube is made of polyethylene terephthalate (PET). PET is important for the stability of the vacuum. The safety cap is particularly easy to open and allows for hygienic working. The transparent plastic label provides an optimum view of the tube contents.

The powder additive in the VACUETTE® FC Mix Tube has no dilution effect. There is no need to take a conversion factor into consideration. Inverting ten times ensures that the tube additive is completely dissolved and well mixed with the sample.



After suitable inversion FC Mix Tubes can be stored for up to 24 hours at room temperature without centrifugation.

## THE UNIQUE ADDITIVE MIXTURE IS WHAT MAKES THE DIFFERENCE

According to the guidelines from the DDG\*/DGGG\*\*, the citrate fluoride additive in the tube stabilises the *in vivo* concentration of glucose in the sample<sup>1,2</sup>.

Citrate/citric acid buffer ensures a quick stabilisation: Glycolysis depends on the pH value. It is catalysed by the enzymes hexokinase and phosphofructokinase. When stored between + 4°C and room temperature, the enzymes, and consequently also glycolysis, are suppressed and the blood sugar is therefore constantly held at the *in vivo* value<sup>3,4</sup>.

In order to extend the inhibition to 48 hours, the tube contains a sodium fluoride additive.

Na<sub>2</sub>-EDTA is included in the mixture as an anticoagulant, which is effective due to complexation of Ca<sup>++</sup>.

### THE ADDITIVE COMPONENTS SERVE TO STABILISE.

- / Citrate/citric acid buffer ensures quick stabilisation
- / Inhibition via sodium fluoride
- / EDTA as anticoagulant



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[www.gbo.com](http://www.gbo.com)

Extensive study material on the VACUETTE® FC Mix Tube can be found in our Download Center.



## PRODUCT OVERVIEW

### VACUETTE® FC Mix Tube

Inner / Outer [Qty.]: 50 / 1,200

Item No.	Nominal volume	Cap colour	Ring Colour	Thread type	Tube size	Label
454510	2 ml	● pink	○ white	non-ridged	13 x 75	transparent
454511	2 ml	● grey	○ white	non-ridged	13 x 75	transparent
454512	3 ml	● grey	● black	non-ridged	13 x 75	paper
454513	3 ml	● pink	● black	non-ridged	13 x 75	transparent
454514	3 ml	● grey	● black	non-ridged	13 x 75	transparent

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Bonetti, G., Giavarina, D., & Carta, M. (2019). Clinical impact of citrate-containing tubes on the detection of glucose abnormalities by the oral glucose tolerance test, *Diagnosis*, 6(4), 377-383. doi: <https://doi.org/10.1515/dx-2018-0100>

\* Deutsche Diabetes Gesellschaft  
(German Diabetes Society)

\*\* Deutsche Gesellschaft für Gynäkologie und Geburtshilfe (German Society for Gynaecology and Obstetrics)

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