



VENOSAFETM

**Glycaemia tube with
unique FC-mixture**

Advanced stabilization of glucose in a blood sample

- Venosafe® tubes with Fluoride-Citrate (FC) mixture stabilizing the glucose content on an “in-vivo” level
- FC-mixture enables prolonged storage and transport
- Optimal accuracy in glucose testing
- Prevents misclassification of diabetes patients

FC mixture — stabilizing effect for optimal accuracy

Working method of the additives of the FC-mixture

Citrate/Citric acid buffer (inhibiting glycolysis)

Citrate/Citric acid is added to the mixture because the single use of Sodium Fluoride does not prevent an initial decrease of glucose. The initial decrease counts for 7-8 % of the "in-vivo" value and therefore lowers the accuracy of test results. Glycolysis is a pH dependent chemical pathway. The two enzymes active in the initial stages of glycolysis are **hexokinase** and **phosphofruktokinase**. Both show a peak activity at pH 8. The activity of both enzymes decreases quickly when the pH shifts away from the optimum. Virtually no activity is observed by pH<7. The citrate/citric acid component of the FC-mixture acts as a buffer and will stabilize the blood pH at a non-physiological level of 5.3-5.9. As an effect the blood glucose is stabilized at an "in-vivo" value during 48 hours both on room temperature and + 4 °C. Optimal test accuracy is ensured.

Sodium Fluoride (enolase blocker)

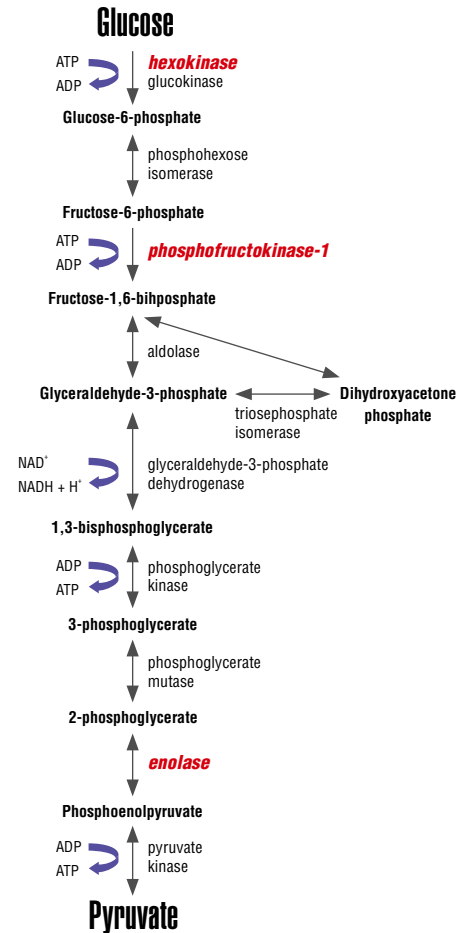
The FC-mixture contains Sodium Fluoride as key additive for long time inhibition of glycolysis. The initial inhibition which is the result of the citrate/citric acid buffer sustains for 5-10 h at 25 °C and is prolonged by the Sodium Fluoride, inhibiting the **enolase**.

EDTA-Na2

EDTA-Na2 is known to work as a chelating chemical, removing Ca⁺⁺ - i.e. preventing coagulation.

References

- (1) **A new method of inhibiting glycolysis in blood sampling**
Kazuo Ushida, Ryoichi Matuse, Enami Toyoda, Syoji Okuda, and Shinobu Tomita - Clinica Chimica Acta 172: 101-108, 1988
- (2) **Sitraatti-fluoridi-inhiibittorinäytteen soveltuvuus muuhun kuin glukoosin määrittämiseen**
Kirsti Mäkinen - Kliin-Lab 6/92 vsk 9: 124-128
- (3) **Optimizing of preanalytical conditions and analysis of plasma glucose. 1. Impact of the new WHO and ADA recommendations on diagnosis of diabetes mellitus**
M. Stahl, L.G.M. Jorgens, P. Hyltoft Petersen, I. Brandslund, N. De Fine Olivarius, K. Borch-Johnsen - Scand. J. Clin. Lab. Invest 61: 169-180, 2001
- (4) **Effectiveness of sodium fluoride as a preservative of glucose in blood**
Chan AYW, Swaminathan R., Cockram CS. - Clin. Chem. 35: 315-317, 1989



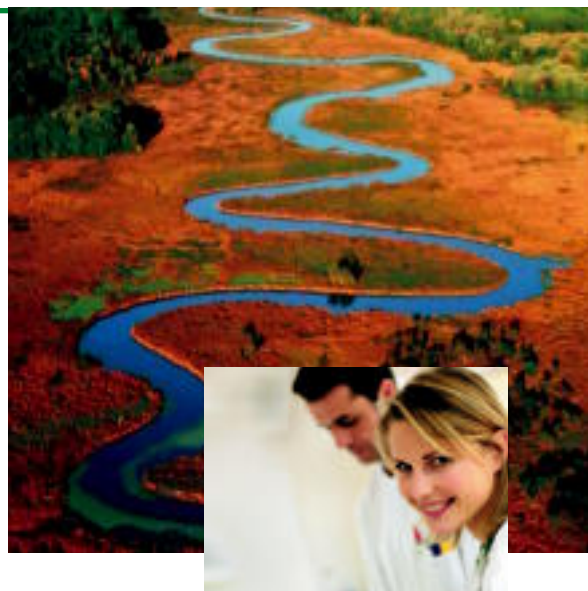
Glycaemia

	Code	Tube volume (ml)	Draw (ml)	Additive	Packaging	Shelf-life
	VF-052SFC	5	2	FC-mixture	12 x 100	18 month
	VF-053SFC	5	3	FC-mixture	12 x 100	18 month

Mixing! at least 5 times



Every day, as healthcare professionals, you are working to ensure life and to contribute to the well-being of your patients. Every day, **Terumo Europe** provides you with the clinical systems, means and solutions to keep life flowing.



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