



VENOSAFETM
Coagulation tubes

Optimized quality in coagulation testing

- **Minimal or no contact activation of the clotting cascade = improved stability of routine coagulation parameters (Prothrombine Time)**
- **Multi-centre studies prove the suitability for heparin activity evaluation⁽¹⁾**
- **Minor platelet activation with partial and full draw tubes⁽²⁾**
- **Special packaging keeps blood ratio within narrow limits (8.5-10.5) during the whole shelf life (18 months)**

Coagulation testing requires ...

... precision and accuracy under economical circumstances to secure an optimal treatment of the patient.

The preanalytical phase and the quality of all sampling devices are the key factors in this process.

Preanalytical requirements

Patient

- Fasting for 12 hours
- No exercises for 12 hours
- Collection prior to any medication or during the lag time
- Collection of blood always in the same position, i.e. sitting or lying

Blood collection

- Expiry date of tube always to be checked
- Cross identification of patient and tube to be done carefully
- Release of tourniquet as soon as blood flows (latest after one minute)
- Proper filling of the tube should be ensured (allow blood stream to stop completely)
- Proper mixing by gently turning the tube top side down for at least 5 times
- Processing of samples within two hours after sampling
- Transport without shaking

Quality criteria for blood sampling devices

Venepuncture

- Sharp needle tips to avoid release of tissue factors
- Steady blood stream for immediate transfer to additive containing tube and to reduce contact activation
- Winged sets with stable tubing to avoid kinking

Blood collection tubes

- Stable ratio between liquid additive and sample volume for the entire shelf life
- Stable concentration of liquid additive for the entire shelf life
- No contact activation by tube surface and stopper
- Draw marks easy to identify
- Visible information about draw volume and additive concentration

* If multiple samples are taken, this should be done in the correct sequence, to avoid contamination of one type of sample by the additives used for another type of sample.

Coagulation tubes should be in position number two, following tubes without chemical additive (serum tubes) since contamination with tissue thromboplastin is unavoidable for the first tube in the sampling sequence.

In addition this sampling order makes sure that coagulation tubes will not suffer from inadequate filling caused by the dead space of winged blood collection sets.

The quality of TERUMO's blood sampling devices — in the focus of COAGULATION testing

VENOJECT blood sampling needles offer ...

- ... a sharp tip to reduce tissue damage and thromboplastin release
- ... a unique coating for smooth penetration and retraction
- ... a thin walled needle with large inner lumen to increase blood flow rate (for steady blood sampling)
- ... better patients' comfort due to the unique double medium bevel and the cannula polishing

VENOSAFE citrate tubes and their special packaging offer ...

- ... a stable ratio between blood and additive for the whole shelf life of 18 months
- ... the biocompatible PET-material with lowest interference between tube and thrombocytes
- ... a complete product range from 1.8 up to 3.6 ml draw and citrate concentrations of 3.2 % (0.109 M) and 3.8 % (0.129 M)
- ... reduced draw (1.8 ml / 2.7 ml blood in a 5 ml-tube) with a minimal initial under-pressure specially designed for paediatric / geriatric use
- ... an optimised packaging size especially for wards and end-users with a low consumption

Single-wall PET tubes — our expertise

1. A multi-center study shows that nor increased dead space for reduced draw tubes neither PET have any negative influence on the results of coagulation tests, even for patients receiving treatment with unfractionated heparin.⁽¹⁾
2. Our tubes do not activate platelets artificially by increased head space. Therefore we chose the maximum inner diameter of est. 10 mm for our tubes.⁽¹⁾
The majority of platforms for coagulation testing is equipped with a cap piercing module, here a reduced inner diameter of the tube (like "sandwich" tubes) tends to create compatibility problems, not with our single wall tubes.
Additionally the increased free space in the tube supports accurate mixing, the key in blood collection for coagulation.
3. The special packaging ensures the right ratio (blood/additive) during the entire shelf life (18 months).

Studies

- (1) **A new polymer sampling tube is suitable for coagulation testing in patients on antithrombotic therapy (heparin, LMWH and oral anticoagulant). Result of a multicenter evaluation.**

Pierre A. Toulon¹, Nadine Ajzenberg^{2*}, Motalib Smahi^{3*}, Laboratoires d'Hématologie, Hôpital Cochin¹, Hôpital Bichat², Paris and Centre Hospitalier³, Eaubonne-Montmorency, France

- (2) **Comparison of Five different Citrated Tubes and their in Vivo Effects on Platelet Activation.**

Philippe J, De Logi E, Baele G, Clinical Chemistry 2004 Mar 50(3) : 656-658

References

- (3) **A new polymer sampling tube is suitable for the prothrombin time test: effect of varying citrate concentration.**

Ingram GI, Hills M. Thromb. Haemost 1976 Aug 36(1) : 230-6


- (4) **The effects of inaccurate blood sample volume on Prothrombin time (PT) and Activated Partial Thromboplastin Time (APTT).**

Peterson P. and Gottfried E.L. Thromb. Haemost 1982, 47(2) 101-103

- (5) **Assessment of the Influence of Citrate Concentration on the International Normalized Ratio (INR) Determined with twelve reagent - instrument Combinations.**

Chantarangkul V, Tripodi A, Clerici M, Negri B, Mannucci PM Thromb. Haemost 1998 80:258-62

Coagulation

	Code	Tubes Volume (ml)	Draw (ml)	Additive	Packaging
	VF-052SBCS	5	1.8	Buffered Na3-Citrate 3.8 %	15 x 10
	VF-052SBCS07	5	1.8	Buffered Na3-Citrate 3.2 %	15 x 10
	VF-053SBCS	5	2.7	Buffered Na3-Citrate 3.8 %	15 x 10
	VF-053SBCS07	5	2.7	Buffered Na3-Citrate 3.2 %	15 x 10
	VF-054SBCS	5	3.6	Buffered Na3-Citrate 3.8 %	15 x 10
	VF-054SBCS07	5	3.6	Buffered Na3-Citrate 3.2 %	15 x 10

Shelf life : 18 months



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
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