# **C interVAC** T E C H N O L O G Y

# VACUUM BLOOD COLLECTION SYSTEM Lind-Vac<sup>®</sup>





**InterVacTechnology OÜ** is the unique high-technology manufacturer of the vacuum blood collection system **Lind-Vac**<sup>®</sup> in the Baltic states. The **Lind-Vac**<sup>®</sup> vacuum blood collection system was introduced into market in 2011.

The system has been designed for quick, safe, correct and hygenic blood collection. We offer a complete range of blood collection tubes available in different sizes and with appropriate additives. Also we provide a wide range of **Lind-Vac**® needles and holders to perform a total safety of vacuum blood collection.

The **Lind-Vac**® vacuum blood collection systems are used in medical institutions and laboratories in more than 20 countries around the world and have had only positive feedbacks from medical personnel who have appreciated the quality, usability and safety of our products.



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## Certificates of InterVacTechnology OÜ



# Lind-Vac<sup>®</sup>

Tubes	Color code	Additive	Tests
No additive		/	Transportation and research of biological fluids. Clinical chemistry, serology, immunology tests of blood serum.
Clot activator		Clot activator	Clinical chemistry, serology, immunology tests of blood serum.
Clot activator & Gel		Gel & Clot activator	Clinical chemistry, serology, immunology tests of blood serum.
Thrombin		Thrombin	Express clinical chemistry tests of blood serum.
Thrombin & Gel		Thrombin & Gel	Express clinical chemistry tests of blood serum.
EDTA		EDTA K2 EDTA K3	Hematological and molecular genetic tests.
Sodium citrate 1 : 4		Sodium citrate 0,129 mol/l (3,8%)	Blood sedimentation test (ESR).
Sodium citrate 1 : 9		Sodium citrate 0,129 mol/l (3,8%) 0,109 mol/l (3,2%)	Hemostasis Diagnostics (Coagulation).
Heparin		Lithium heparin Sodium heparin	Clinical chemistry, immunology, toxicology tests of blood plasma.
Glucose		Na fluoride / EDTA Na fluoride / Potassium oxalate	Glucose level, lactate, glycosylated hemoglobin.
Glucose for the diagnosi of gestational diabetes	is	Na fluoride / EDTA K3 & Gel	Glucose level, lactate, glycosylated hemoglobin in plasma (especially for diagnosis of gestation diabetes).
Heparin & Gel		Lithium heparin & Gel Sodium heparin & Gel	Clinical chemistry, immunology, toxicology tests of blood plasma.
EDTA & Gel		EDTA & Gel	Immunohematological and molecular genetic tests of blood plasma.
ACD-A, ACD-B		ACD-A, ACD-B	Immunology and blood group tests, blood storage.
DNA		EDTA and DNA stabilization solution	Tests of DNA fragments, hematological and molecular genetic tests.

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Lind-Vac<sup>®</sup>

Tubes are used to take samples of biological fluids (blood, urine, cerebrospinal fluid, exudates, etc.).

**Usage**: researches of biological fluids in clinical chemistry, serology, immunology.

Can be used as primary tubes for tests, storage and transportation of biomaterials.

**Specimen:** serum or other biological fluids.

Clotting time: 60 minutes.

**Conditions of centrifugation:** 1300 g for 10 minutes. Before centrifuging the tubes with serum it is necessary to wait until blood clotting.

## Color code: Red



Vacuum tube with no additive

		No additive
REF	Size (mm)	Volume (ml)
NE1302	13*75	3
NE1402	13*75	4
NE2302	13*100	3
NE2402	13*100	4
NE2502	13*100	5
NE2602	13*100	6
NE2702	13*100	7
NE3902	16*100	9

## Vacuum tube with clot activator

Serum Separation tubes are covered with clot activator powder to accelerate blood coagulation.

Silica (clot activator) is used as the activator.

Serum is a substance freed from the fibrinogen but containing fragments of thrombocyte and product of the metabolism.

**Usage**: to research serum in the clinical chemistry, immunology, serology.

Specimen: serum.

Clotting time: from 10 to 30 minutes.

**Conditions of centrifugation:** 1300 g for 10 minutes.

Before centrifuging the tubes with serum it is necessary to wait until blood clotting.

Color code: Red



		Lind-V Tot Acts
REE	Size (mm)	Volume (ml)
AF1402	13*75	4
AE1502	13*75	5
AE2302	13*100	3
A F 2 4 0 2	124100	-
AEZ4UZ	13*100	4
AE2402 AE2502	13*100 13*100	4 5
AE2402 AE2502 AE2602	13*100 13*100 13*100	4 5 6
AE2402 AE2502 AE2602 AE2702	13*100 13*100 13*100 13*100	4 5 6 7
AE2402 AE2502 AE2602 AE2702 AE3802	13*100 13*100 13*100 13*100 16*100	4 5 6 7 8
AE2402 AE2502 AE2602 AE2702 AE3802 AE3902	13*100 13*100 13*100 13*100 16*100 16*100	4 5 6 7 8 9
AE2402 AE2502 AE2602 AE2702 AE3802 AE3902 AE3102	13*100 13*100 13*100 13*100 16*100 16*100 16*100	4 5 6 7 8 9 10



## Vacuum tube with clot activator & gel

As the activator it is used silica dioxide and biologically inert olefin gel.

Gel provides the separation of serum and clot up to 48 hours without re- centrifugation.

Gel is the special material intended for formation of barrier between cellular components of blood and serum during centrifugation.

The steady barrier is formed within 5 minutes after centrifugation is finished.

There is added gel silica dioxide in the test tube providing a complete clotting during the 30 min.

After capturing of blood sample into the vacuum tube with gel, it should be mixed 5-6 times.

**Usage:** to research serum in the clinical chemistry, immunology, serology, protein electrophoresis.

Specimen: serum.

**Clotting time**: from 5 to 30 minutes.

**Conditions of centrifugation:** 1800 g - 2200 g for 10 minutes.

Test tubes with gel should be centrifuged no later than 2 hours after blood collection. The tubes can be frozen up to -20 ° C.

The Serum Separation Gel can not be re-centrifuged in order to avoid hemolysis of a specimen.

It is forbidden to use an angular rotor while the centrifuging gel tubes that to avoid getting a part of erythrocytes into the serum.



#### Clot activator & gel

REF	Size (mm)	Volume (ml)
AG1352	13*75	3.5
AG1402	13*75	4
AG2302	13*100	3
AG2402	13*100	4
AG2502	13*100	5
AG2602	13*100	6
AG3802	16*100	8
AG3852	16*100	8.5





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## Vacuum tube with thrombin

Thrombin is used for rapid laboratory tests.

An inside surface of a tube is processed by a complex filler "thrombin with silica" that facilitates the rapid clots forming. After the process of centrifuging it allows to get a sample of serum for further tests. Using thrombin blood collection tubes it is possible to get more cleaned of fibrin threads and clots serum than using no additive tubes.

**Usage:** rapid tests of the serum in Clinic Chemistry, Immunology, Serology.

Specimen: blood serum.

**Clotting time:** 3-5 minutes.

**Centrifugation conditions:** 1300 g during 10 minutes.

Before centrifuging of tubes with the serum it is important to wait until full clotting.

#### Color code: Orange



		mamorin
REF	Size (mm)	Volume (ml)
BE1202	13*75	2
BE1402	13*75	4
BE2502	13*100	5
BE3802	16*100	8
BE3902	16*100	9

## Vacuum tube with thrombin & gel

Gel ensures dividing the serum and the clot during 48 hours without the additional centrifugation.

Into the thrombin & gel blood collection tube is added the filler "thrombin with silica" in an amount that facilitates the full clotting during 3-5 minutes.

Because of more accurate clotting a volume of the serum in the thrombin & gel blood collection tube is higher than in standard tubes.

**Usage:** rapid tests of the serum in Clinic Chemistry, Immunology, Serology.

Specimen: blood serum.

Clotting time: 3-5 minutes.

**Centrifugation conditions:** 1800-2200 g during 10 minutes.

It is important to centrifuge gel tubes not later than in 2 hours after blood collection.

#### Color code: Orange



	Th	rombin & gel
REF	Size (mm)	Volume (ml)
BG1202	13*75	2
BG1402	13*75	4
BG2502	13*100	5
BG3802	16*100	8
BG3902	16*100	9



## Vacuum tube for Hematology (potassium EDTA)

**Additive:** potassium salt of EDTA (ethylenediaminetetraacetate).

In accordance with international practice it is possible to use three options of EDTA:

- EDTA K3;
- EDTA K2;
- EDTA Na2

In vacuum tubes anticoagulant is added in powder EDTA K2 or EDTA K3 solution, concentration reaches 1.8 mg/ml in test tubes completely filled with blood.

After taking blood into the tube it should be mixed by turning 6-8 times. Lack of mixing can also cause platelet aggregation, coagulation or formation of micro clots.

**Specimen:** whole blood or plasma (Gel tubes) with Gel.

#### Color code: Purple

# Tubes with EDTA and Gel are suitable for prepare pure plasma for virus research and molecular diagnostics.

		EDTA K2			EDTA K3
REF	Size (mm)	Volume (ml)	REF	Size (mm)	Volume (ml)
EE1102	13*75	1	TE1102	13*75	1
EE1202	13*75	2	TE1202	13*75	2
EE1302	13*75	3	TE1302	13*75	3
EE1402	13*75	4	TE1402	13*75	4
EE1502	13*75	5	TE1502	13*75	5
EE2402	13*100	4	TE2402	13*100	4
EE2502	13*100	5	TE2502	13*100	5
EE2602	13*100	6	TE2602	13*100	6
EE3902	16*100	9	TE3902	16*100	9
EE3952	16*100	9.5	TE3952	16*100	9.5

	T	EDTA K2 & Gel			T	EDTA K3 & Gel
REF	Size (mm)	Volume (ml)		REF	Size (mm)	Volume (ml)
EG1202	13*75	2		TG1202	13*75	2
EG1402	13*75	4		TG1402	13*75	4
EG2402	13*100	4		TG2402	13*100	4
EG2502	13*100	5		TG2502	13*100	5
EG3902	16*100	9		TG3902	16*100	9
				S.	222	
-				200	2225	
				232		11
					Law-	a Mind
4-Var				and the second second	ind nd	Id-V EDD
Condition	of centrifu	gation tubes w	ith EDTA and	Gel: 1100	g - 1800 g, 10	) minutes
	TAK3	Такз	Md-Vac and Vac =		Id-Valla	





## Vacuum tube for coagulation (citrate)

**Additive:** to research the hemostatic system there is used trisodium citrate liquid concentration in vacuum tubes:

0.109mol/l - 3.20% (32.0g/l);

0.129mol/l - 3.80% (38.0g/l).

The volume ratio of blood and sodium citrate is 9:1.

Sodium citrate is an anticoagulant for collection of venous blood to research coagulation properties of blood.

Anti-coagulative properties of citrate are shown in complex formation with ions of Ca2+ and effective removal them from blood.

Usage: to research the hemostatic system.

Specimen: plasma.

Immediately after taking the blood into the tube with citrate it must be carefully mixed at least 5 times to prevent micro clots.

## Requirements according to the NCCLS H21-A4 recommendations:

Samples of tests (e.g. thrombin time, Protein C, Factor V and Factor VII) can be stored at temperature 18-24 ° C and temperature 2-4 ° C, and should be centrifuged and analyzed no later than 4 hours after blood collection.

If it is not possible to make test for PV during 24 hours and for other analyses during 4 hours plasma must be separated from blood cells (transfused into another tube) and frozen after centrifuging.

Freezing samples may influence the results of the APTT.

**Conditions of centrifugation:** 2000-2500 g for 10-15 minutes.



Additive: liquid trisodium citrate in a concentration of 0.129mol/l - 3.80% (38.0g/l).

Sodium citrate is an anticoagulant for collection of venous blood to research coagulation characteristics of blood.

It is used for the measurement of an erythrocyte sedimentation rate. Definition of indicators ESR occurs at an accelerated rate.

Specimen: whole blood.

Color code: Black





	Sodium	n citrate 3,8%
REF	Size (mm)	Volume (ml)
SE1272	13*75	2.7
SE1362	13*75	3.6
SE1452	13*75	4.5
SE2182	13*100	1.8
SE2272	13*100	2.7
SE2362	13*100	3.6
SE2452	13*100	4.5
SE3902	16*100	9

#### Sodium citrate 3,2%

	Jouran	
REF	Size (mm)	Volume (ml)
KE1272	13*75	2.7
KE1362	13*75	3.6
KE1452	13*75	4.5
KE2182	13*100	1.8
KE2272	13*100	2.7
KE2362	13*100	3.6
KE2452	13*100	4.5
KE3902	16*100	9

## Vacuum tube for ESR

	663890	366388
6	ARCON	Transformer and the second sec
	ESR (s	odium citrate)
REF	Size (mm	) Volume (ml)
RE1162	13*75	1.6
RE1242	13*75	2.4
RE1202	13*75	2.0
RE1302	13*75	3.0



(fluoride)

## Vacuum tube for glucose determination

**Additive:** test tubes contain anticoagulant and the glucose stabilizer.

K3-EDTA, K2-EDTA, EDTA-Na, K oxalate, Li heparin, Na heparin can be used as an anticoagulant.

Na fluoride stabilizes blood sugar levels for up to 24 hours.

#### Additives:

Potassium oxalate / Na fluoride

K3-EDTA / Na fluoride

K2-EDTA / Na fluoride

EDTA-Na2 / Na fluoride

Li heparin / Na fluoride

Na heparin / Na fluoride

Addition of sodium fluoride and anticoagulant into the test tube allows to prevent blood glucose destruction (a process called glycolysis) and keep its level in the taken sample of blood.



Vacuum test tubes for glucose should be filled completely to the specified mark on the label, the excess oxalate in it can cause hemolysis.

After drawing the blood into the tube it should be mixed by turning 6-8 times.

Because tubes with fluoride / oxalate are exposed to hemolysis much more than other they must be mixed with extreme caution.

**Conditions of centrifugation:** 1300 g for 10 minutes.

Centrifugation should be made right after taking the blood into the tubes.

**Color code: Grey** 





	G	ilucose tubes
REF	Size (mm)	Volume (ml)
E1202	13*75	2
E1402	13*75	4
E2202	13*100	2
E2302	13*100	3
E2402	13*100	4
E2502	13*100	5
E3902	16*100	9



## Vacuum tube for plasma separation (lithium / sodium heparin)

Additive: Lithium or Sodium Heparin

Heparin is a natural anticoagulant which presents in any healthy body. Heparin is used to take the plasma for chemical, immunology and toxicology tests.

Plasma is freed from the cells by the centrifugation. Clotting of blood is prevented by the addition of an anticoagulant directly after the taking of blood.

For this purpose, the lithium or sodium heparin is added in this tube.

#### Advantages in comparison with serum:

The bigger volume of material in the same volume of blood. The results are independent on the condition of the coagulation system. The results are closer to in vivo.

Lower risk of hemolysis and thrombocytosis.

Specimen: heparin plasma.

The powder heparin is applied to the inner wall of the tube.

The tubes contain a reagent at 12 - 30 IU of heparin per 1 ml of blood.

Immediately after taking the blood into the tube with heparin it must be carefully mixed at least 8-10 time.

**Conditions of centrifugation:** 1300 g for 10 minutes without Gel, 1800-2200 g for tubes with Gel.

Centrifugation should be made right after the drawing the blood into the tubes.

### Color code: Green





#### Lithium heparin Size (mm) Volume (ml) REF LE1302 13\*75 3 13\*75 4 LE1402 LE2302 13\*100 3 LE2402 13\*100 4 13\*100 5 LE2502 LE2602 13\*100 6 16\*100 9 LE3902

	Soc	dium heparin
REF	Size (mm)	Volume (ml)
HE1302	13*75	3
HE1402	13*75	4
HE2302	13*100	3
HE2502	13*100	5
HE2602	13*100	6
HE3902	16*100	9

	Sodium	heparin & gel
REF	Size (mm)	Volume (ml)
HG1402	13*75	4
HG2302	13*100	3
HG2502	13*100	5
HG3802	16*100	8

	Lithium heparin & gel					
REF	Size (mm)	Volume (ml)				
LG1402	13*75	4				
LG2302	13*100	3				
LG2502	13*100	5				
LG3802	16*100	8				



# NEW

## Vacuum tube for analysis of free extracellular DNA

A vacuum tube is designed to collect venous blood for the subsequent analysis of free extracellular DNA. This kind of analysis is necessary for examination of DNA fragments. These can be, for example, fragments of fetal DNA in the blood of the mother. It's analysis lets determine the gender of the child at the early stages of development and identify some hereditary multations.

Also among free extracellular DNA there may be DNA fragments with somatic mutations resulting from carcinogenesis. Analysis of these fragments (liquid biopsy) allows you to diagnose the presence of malignant neoplasms at the early stages.

Another area of application of the test tube is hematological or genetic studies that require a longterm storage of blood. The use of additional preservatives ensures better preservation of blood cells and protects against hemolysis. Therefore, this tube should be used if long-term storage or shipment under temperature fluctuations is needed.

Extracellular DNA stabilization is possible for period of 7-14 days at a storage temperature of 4-30 C.

Specimen: whole blood/plasma.

**Usage:** examination of DNA fragments, hematological or genetic studies.

#### Conditions of centrifugation:

The speed of centrifugation depends on a type of the DNA isolation kit used.

#### Color code: Light lilac



## DNA



## Vacuum tube for determination of glucose level in blood plasma for diagnostics of gestational diabetes

The system is used for the precise determination of glucose level in blood plasma (for diagnostics of gestational diabetes) during 24 hours after venous blood collection.

If to follow the rules for the venous blood collection and its storage (without freezing and the temperature of the storage must not be higher than +25°C) the glucose level will not be reduced during the prescribed time, the hemolysis of samples while the transport will be prevented, that is an advantage for using in centralized laboratories.

It is possible to determine the glucose level in a primary tube after the centrifugation without a risk of capturing erythrocytes by an analyzer.

The vacuum systems with fluoride and gel are the optimal decision for centralized laboratories where blood samples are transported between 2 and 24 hours after venous blood collection.



#### Specimen: plasma.

**Additive:** test tubes contain anticoagulant, glucose stabilizer and gel Options of additives: Potassium oxalate / Na fluoride / Gel K3-EDTA / Na fluoride / Gel K2-EDTA / Na fluoride / Gel

#### Conditions of centrifugation:

1800-2200 g for 10 minutes. Centrifugation should be made right after taking the blood into the tubes.

#### Color code: Olive

#### Glucose for the diagnosis of gestational diabetes.

REF	Size (mm)	Volume (ml)	
Potassi	um Oxalate	/Na Fluoride/Gel Sepa	arator
FG1102	13*75	1	
FG1302	13*75	3	
FG2502	13*100	5	
FG3802	16*100	8	
K3-EDTA	/Na Fluorio	le/Gel Separator	
IG1102	13*75	1	
IG1302	13*75	3	
IG2502	13*100	5	
IG3802	16*100	8	
K2-EDT/	A/Na Fluorio	de/Gel Separator	
JG1102	13*75	1	
JG1302	13*75	3	
JG2502	13*100	5	
JG3802	16*100	8	



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# **Description of base tubes**

## Vacuum tube with ACD-A, ACD-B

Immunohematology tubes are used for blood group analysis and blood storage.

Immunohematology tubes are available with an ACD solution (Acid Citrat Dextrose - citric acid, trisodium citrate, dextrose) in two versions of ACD-A or ACD-B.

**Usage:** test tubes can be used in immunology, and are also intended for testing blood groups and blood storage.

Specimen: stabilized whole blood.

#### **Conditions of centrifugation:**

not required The composition of the reagents additives allows to stabilize the energy metabolism of cells and store them at a temperature of +1 ... 6 ° C for 21 days.

**ACD-A tubes** 

## Color code: Lemon yellow

REF	Size (mm)	Volume (ml)	REF	Size (mm)	Volume (ml)
CE1202	13*75	2	DE1202	13*75	2
CE1402	13*75	4	DE1402	13*75	4
CE2502	13*100	5	DE2502	13*100	5
CE2602	13*100	6	DE2602	13*100	6
CE3802	16*100	8	DE3802	16*100	8
CE3902	16*100	9	DE3902	16*100	9
CE3102	16*100	10	DE3102	16*100	10

## **Sterile Safety-Lancets**

Enable the safe, gentle collection of capillary blood. Since the needle point or blade is safely concealed before and after use, the risk of needle injuries and cross contamination is eliminated when the lancets are used according to the instructions. Our product range covers the most varied of skin types and the entire range of blood volumes to be extracted. The lancets cannot technically be reused once they have been triggered, and can be safely disposed of in our disposal boxes.





**ACD-B** tubes



## **Needles and Holders**

# Lind-Vac<sup>®</sup>

#### Blood collection set with a holder

REF	Needle size	Needele diameter	Catheter length	Color code
BH2012	20G x 3/4" x 12"	0,9 mm	300 mm	
BH2007	20G x 3/4" x 7"	0,9 mm	180 mm	
BH2112	21G x 3/4" x 12"	0,8 mm	300 mm	
BH2107	21G x 3/4" x 7"	0,8 mm	180 mm	
BH2212	22G x 3/4" x 12"	0,7 mm	300 mm	
BH2207	22G x 3/4" x 7"	0,7 mm	180 mm	
BH2312	23G x 3/4" x 12"	0,6 mm	300 mm	
BH2307	23G x 3/4" x 7"	0,6 mm	180 mm	
BH2412	24G x 3/4" x 12"	0,55 mm	300 mm	
BH2407	24G x 3/4" x 7"	0,55 mm	180 mm	
BH2512	25G x 3/4" x 12"	0,5 mm	300 mm	
BH2507	25G x 3/4" x 7"	0,5 mm	180 mm	

#### Safety blood collection set

REF	Needle size	Needele diameter	Catheter length	Color code
SS1912	19G x 3/4" x 12"	1,1 mm	300 mm	
SS1907	19G x 3/4" x 7"	1,1 mm	180 mm	
SS2112	21G x 3/4" x 12"	0,8 mm	300 mm	
SS2107	21G x 3/4" x 7"	0,8 mm	180 mm	
SS2212	22G x 3/4" x 12"	0,7 mm	300 mm	
SS2207	22G x 3/4" x 7"	0,7 mm	180 mm	
SS2312	23G x 3/4" x 12"	0,6 mm	300 mm	
SS2307	23G x 3/4" x 7'	0,6 mm	180 mm	
SS2512	25G x 3/4" x 12"	0,5 mm	300 mm	
SS2507	25G x 3/4" x 7"	0,5 mm	180 mm	

#### Safety blood collection set with a holder

REF	Needle size	Needele diameter	Catheter length	Color code
BS1912	19G x 3/4'' x 12''	1,1 mm	300 mm	
BS1907	19G x 3/4'' x 7''	1,1 mm	180 mm	
BS2112	21G x 3/4" x 12"	0,8 mm	300 mm	
BS2107	21G x 3/4" x 7"	0,8 mm	180 mm	
BS2212	22G x 3/4" x 12"	0,7 mm	300 mm	
BS2207	22G x 3/4" x 7"	0,7 mm	180 mm	
BS2312	23G x 3/4" x 12"	0,6 mm	300 mm	
BS2307	23G x 3/4'' x 7'	0,6 mm	180 mm	
BS2512	25G x 3/4" x 12"	0,5 mm	300 mm	
BS2507	25G x 3/4" x 7"	0,5 mm	180 mm	

#### Holder

It is one of the components of vacuum blood collection systems. It is used to fix multi sample needles.

#### Safety holder

Safety holder with special needle protection is used to close the needle after venipuncture that makes blood collection procedure even more safety.

#### Luer adapter

Designed to connect intravenous catheters, perfusion devices and needles with Luer connectors with vacuum systems for blood collection.

Lueradapteris providedwithathreadfor screwing into a holder and safe rubber stopper.









LA2112 Luer adapter

## **Needles and Holders**



## Multi sample needle

REF	Needle size	Needele diameter	Needele length	Color code
MN1812	18G x 1 ½"	1,2 mm	38 mm	
MN1810	18G x 1''	1,2 mm	25 mm	
MN2012	20G x 1 ½"	0,9 mm	38 mm	
MN2010	20G x 1''	0,9 mm	25 mm	
MN2112	21G x 1 ½"	0,8 mm	38 mm	
MN2110	21G x 1''	0,8 mm	25 mm	
MN2212	22G x 1 ½"	0,7 mm	38 mm	
MN2210	22G x 1''	0,7 mm	25 mm	
MN2312	23G x 1 ½"	0,6 mm	38 mm	
MN2310	23G x 1"	0,6 mm	25 mm	

## Multi sample needle with visual control (flash back)

REF	Needle size	Needele diameter	Needele length	Color code
VN2112	21G x 1 ½"	0,8 mm	38 mm	
VN2110	21G x 1"	0,8 mm	25 mm	
VN2212	22G x 1 ½"	0,7 mm	38 mm	
VN2210	22G x 1"	0,7 mm	25 mm	
VN2312	23G x 1 ½"	0,6 mm	38 mm	
VN2310	23G x 1"	0,6 mm	25 mm	

## Safety needle set with a holder

REF	Needle size	Needele diameter	Needele length	Color code
HS2012	20G x 1-1 ½"	0,9 mm	38 mm	
HS2112	21G x 1-1 ½"	0,8 mm	38 mm	
HS2212	22G x 1-1 ½"	0,7 mm	38 mm	
HS2312	23G x 1-1 ½"	0,6 mm	38 mm	
HS2410	24G x 1''	0,55 mm	25 mm	
HS2510	25G x 1''	0,5 mm	25 mm	
HS2610	26G x 1''	0,45 mm	25 mm	
HS2710	27G x 1"	0,4 mm	25 mm	

#### **Blood collection set**

REF	Needle size	Needele diameter	Catheter length	Color code
SN2012	20G x 3/4" x 12"	0,9 mm	300 mm	
SN2007	20G x 3/4'' x 7''	0,9 mm	180 mm	
SN2112	21G x 3/4" x 12"	0,8 mm	300 mm	
SN2107	21G x 3/4'' x 7''	0,8 mm	180 mm	
SN2212	22G x 3/4" x 12"	0,7 mm	300 mm	
SN2207	22G x 3/4'' x 7''	0,7 mm	180 mm	
SN2312	23G x 3/4" x 12"	0,6 mm	300 mm	
SN2307	23G x 3/4'' x 7''	0,6 mm	180 mm	
SN2412	24G x 3/4" x 12"	0,55 mm	300 mm	
SN2407	24G x 3/4'' x 7''	0,55 mm	180 mm	
SN2512	25G x 3/4" x 12"	0,5 mm	300 mm	
SN2507	25G x 3/4" x 7"	0,5 mm	180 mm	





**EDTA** 

Lithium/ Sodium heparin

#### Venipuncture techniques by Multi Sample needles

**1.** Label the required tubes, specifying the name of the patient, department (in order to exclude errors when identifying the biomaterial sample).

2. Treat your hands hygienically, dry them.

3. Treat your hands with an antiseptic. Do not dry; wait until the antiseptic is completely dry.

**4.** Put gloves on hands.

5. Select tubes corresponding to required laboratory tests; prepare a needle, a holder, alcohol wipes, and a plaster.

**6.** Place a tourniquet on the arm 7-10 cm above the venipuncture place. Tourniquet must be applied no more than one minute. A longer vein squeeze time can influence the test results due to changes in the concentration of parameters in the blood.

**7.** Ask the patient to clench a hand into a fist. Do not give physical exertion to the arm, like "clenching and unclenching of a fist" because it can influence the test results due to changes in the concentration of parameters in the blood.

**8.** Select the venipuncture place. The ulnar and saphenous veins are the most common but smaller and fuller veins of the wrist and hand can be punctured too. Depending on the characteristics of the vein select the most convenient option for the venipuncture: a multisample needle or a blood collection set (a butterfly needle).

**9.** Take the needle and remove the protective cap.

10. Attach the needle into the holder.

**Clot Activator** 

**11.** Disinfect the venipuncture site with a gauze napkin or a pad moistened with an antiseptic solution, in a circular motion from the center to the periphery.

**12.** Wait until the antiseptic solution is completely dry.

**13.** Remove the cap on the other side of the needle. Position the needle along the line with the vein level up and puncture the vein at an angle of 15-30 ° to the skin.

**14.** Insert the prepared tube into the needle holder until it stops and hold it until the blood stops flowing into the tube. The tourniquet must be removed or released immediately after the blood flow has started leaking into the tube. Make sure the patient unclenches his fist. The blood passes into the tube until it completely compensates for the created vacuum. If the blood does not flow it means that the needle has gone through the vein. In this case there is need to pull out the needle slightly but not to remove it completely. Do it until the blood goes into the tube. The certainty of filling the tube is  $\pm$  10% of the nominal volume.

**15.** Remove the tube from the holder. After filling the tube it must be immediately gently inverted to mix the sample with the filler: tubes without anticoagulants - 5-6 times; tubes with citrate - 3-4 times; tubes with heparin, EDTA and other additives - 8-10 times.

**16.** You can attach a number of other tubes to the holder to draw blood for various researches.

**17.** After all the required tubes are filled in put a dry sterile cloth on the venipuncture site and remove the needle. Make sure that the patient does not have external bleeding in the area of venipuncture. Apply a pressure bandage on the arm or a bactericidal plaster.



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Sodium citrate

Clot activator & Gel

## Labelling



Symbol	Description	Labels
2	Symbol for "Do Not Reuse"	VACUUM BLOOD TECHNOLOGY COLLECTION TUBES Lind-Vac®
	Symbol for "Use By"	Additive: Clot activator & Gel Size: 13x75 mm Volume: 3,5 ml O-ty: 100 psc
LOT	Symbol for "Batch Code"	$\begin{array}{c c} \hline c & c & c & c \\ \hline c & c & c \\ c & c & c \\ \hline c & c & c \\ c & c & c \\ c & c & c \\ c & c &$
REF	Symbol for "Catalogue Number"	InterVacTechnology Ltd., Kadastiku 57, Narva, Estonia + (372) 35 71 007 www.intervactechnology.com
	Symbol for "Date of Manufacture"	Label on the rack
	Symbol for "Manufacturer"	Lind-Vac® 08654 Lind-Vac®   Clot activator Clot Clot activator
STERILER	Symbol for "Sterilized Using Irradiation"	
C€	CE Mark	Image: Standard S
IVD	Symbol for "In Vitro Diagnostic Medical Device"	Standart label Label with Label with double code barcode
	Symbol for "Temperature Limitation"	Labels can be made under the order in any language and with the stated barcodes

\* in this catalog is an example of the label, the manufacturer can change the appearance of the labels

## Packing

The tubes are packed in a foamed styrene rack and protective film. The tubes 13mm x 75mm and 13mm x 100mm are packed into the rack of 100 pieces. The tubes 16mm x 100mm are packed into the rack of 50 pieces.

The tubes can be packed in special foil packing.









## OÜ InterVacTechnology

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