

# TRUE CONTROL

SERO PRODUCT CATALOGUE



The independent control sera specialist since 1963

# We enable laboratories to stay in control

## OUR CORE VALUES

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### ETHICAL

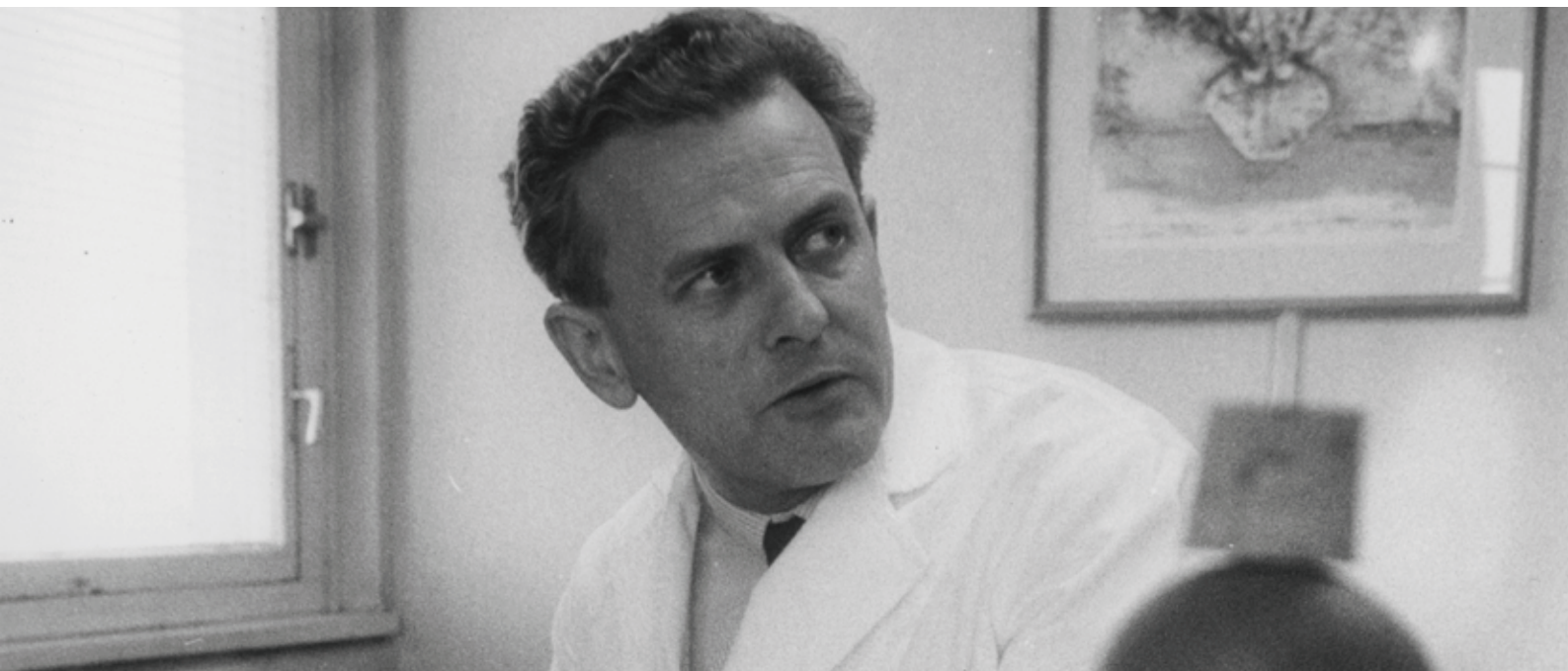
Ethics affect all we do, particularly our selection, collection and purchase of blood products and raw materials. Traceability, accountability and independence are at the core of our business.

### DEDICATED

We are passionate professionals who know what it takes to provide high-quality products and services – dedication from each and every one of us, always.

### FLEXIBLE

We are customer oriented and always open to new and improved solutions for our customers and partners. We know our flexibility is the key to addressing the needs of a fast-changing laboratory market.



Professor Dr. Med. Lorentz Eldjarn, founder of SERO and pioneer in the field of QC materials for the laboratory.

## SERO – dedicated to laboratory quality since 1963

### HISTORY

Professor Dr. Med. Lorentz Eldjarn started developing Quality Control (QC) materials as early as the 1950s and was a pioneer in the field when he established SERO as a specialized QC manufacturer in 1963. The Clinical Chemistry Award he received from the International Federation of Clinical Chemistry in 1975 underscores the important role that SERO has played in the development of this important field of laboratory medicine.

### SERO TODAY

SERO is a Norwegian biotechnology company specialized in the production of quality control materials for medical laboratories. For many biotechnicians worldwide, our brand Seronorm™ has been synonymous with trust and a high level of reliability for decades.

Almost 60 years after its start, SERO still focuses solely on QC materials and has extensive experience in immunoassay, clinical chemistry, lipids, hormones, proteins, tumour markers, cardiac markers, diabetes, trace elements and therapeutic drugs.

We carry out all of our activities at our integrated production facilities located close to Oslo. This includes research and development, production, marketing and our own laboratory which was one of the first to be accredited in Norway as early as 1994\*.

Our products hold a leading position in our Scandinavian home market and we also export to more than 40 countries worldwide.

\* For details regarding accredited methods, see our website [www.sero.no](http://www.sero.no).



Seronorm™  
Immunoassay  
Liq  
3 mL

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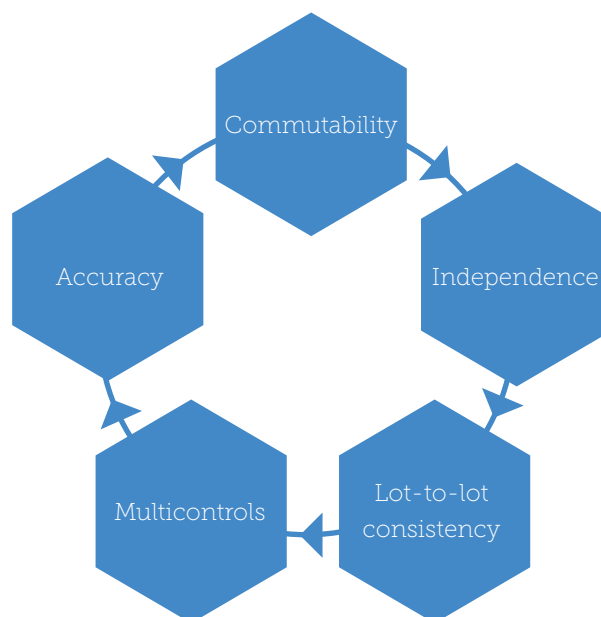


## SERO's product philosophy

The purpose of quality control materials in the clinical laboratory is to help monitor the analytical process in order to detect, reduce and correct any deficiencies that could lead to wrong clinical decisions being made.

SERO's product philosophy – in line with our corporate mission – has always been to provide laboratories with high-quality control materials that ensure reliable results.

That is why SERO puts quality first in each step of the production process – from the selection of raw materials for production processes to data collection for product documentation. As an integral part of our product philosophy, SERO focuses on the following properties:



### Commutability – no reliable analytical result without patient-like QC materials

Standard ISO 15189 for medical laboratories clearly states its requirements for the use of quality control materials: “The laboratory shall use quality control materials that react to the examining system in a manner as close as possible to patient samples”.

Several studies (e.g. Miller et al, 2011, Clinical Chemistry) have shown that many of the QC materials on the market do not fulfill this basic and absolutely necessary function, presumably because the materials are far from being patient-like, i.e. commutable. Offering a control based on a human matrix is not enough to guarantee an acceptable degree of commutability. Heavily-buffered controls and/or controls that include various stabilizers or preservatives are definitely very different from patient samples. As a result, they may fail to react to analysis methods like patient samples would.

To ensure the best commutability, most of SERO's products contain more than 95% genuine human serum, with no stabilizers or preservatives added. The whole production process is designed to protect the properties of the matrix and thereby enable the final product to behave in a manner similar to patient samples. The result for laboratories? One of the most commutable and trustworthy control materials on the market!

## True independent QC materials

SERO's branded products are true independent controls. Production is not optimized for any specific instrument or reagent kit, and the accuracy and precision data in the package inserts come from independent, trustworthy laboratories using the SERO's value assignment protocol.

With modern analytical instruments being more and more of a "black box system", the best way for medical laboratories to control their laboratory system is through the use of third-party quality controls. ISO 15189 "Medical laboratories – Requirements for quality and competence" clearly states its recommendations with regard to the selection of QC materials: "Use of independent third-party control materials should be considered, either instead of, or in addition to, any control materials supplied by the reagent or instrument manufacturer".

## High lot-to-lot consistency

SERO's controls exhibit minimal variation from lot to lot. At SERO, we are fully aware that laboratories prefer minimal lot-to-lot variation due to the challenging and time-consuming task of introducing a new lot.

Our fully integrated production facility which ensures control of each step of the production process coupled with strict selection of the raw materials used in the production enable us to document an extremely high lot-to-lot consistency. This has been a key reason why many modern laboratories choose and keep SERO as their long-term control sera partner.

## Multicontrols – allow huge savings

The SERO multi-parameter controls allow for huge savings. With the launch of Seronorm™ Immunoassay in 2003, SERO was the first QC manufacturer in the world to offer a highly consolidated immunoassay control that contains about 50 analytes, including most hormones, tumour markers and cardiac markers. By reducing the number of immunoassay controls used to cover the test menu in the laboratory, Seronorm™ Immunoassay has made it possible to significantly reduce waste related to dead volume in the instrument and enabled laboratories to achieve huge savings.

Our aim is to simplify our customers' daily laboratory routines and reduce the time and money spent on running QC materials. SERO's product range includes several multi-parameter control materials, however we are well aware that this consolidation must not compromise commutability, the most important property of any control material.

## Accuracy – trustworthy laboratory results through traceable analytical data

SERO's accuracy controls can be used both for the verification of calibrators and for the monitoring of day to day precision. In addition, the information supplied with certain controls can be used to compare the trueness of your analytical results with other instruments and reference methods. The SERO lot-specific product documentation provides specific information on analytical results, methods, an uncertainty budget and traceability in accordance with ISO 17511 and ISO 18153\*.



\* For detailed information concerning which control materials that can be used to monitor trueness and/or precision, please refer to the Instructions for Use available at our website [www.sero.no](http://www.sero.no) or upon request.



# SERO's Branded Control Sera

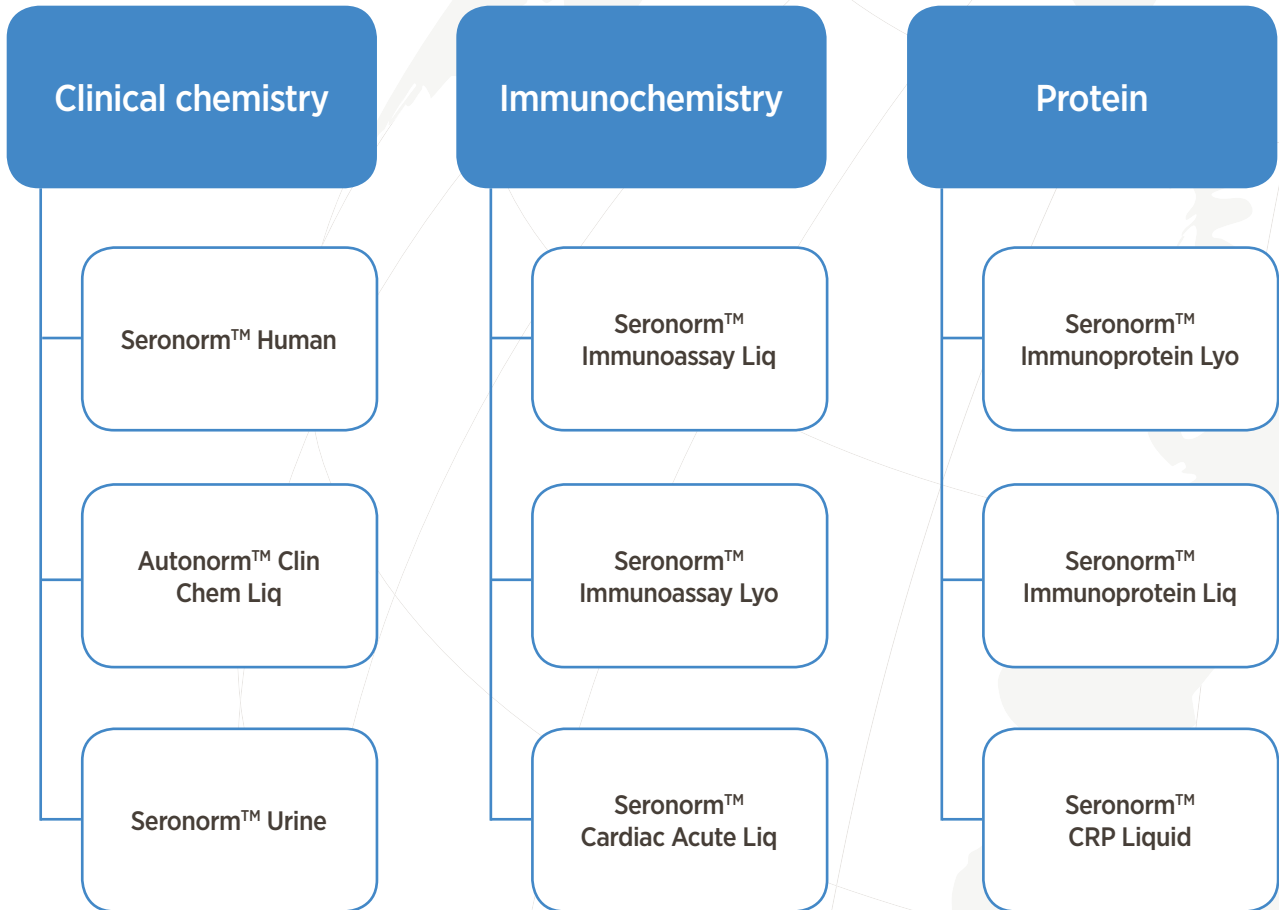
	Clin. Chemistry	Lipids	Enzymes	Proteins	Hormones	Cardiac Markers	Acute Markers	Tumour Markers	Therapeutic Drugs	Trace Elements	Diabetes	Diabetes Liquid	Animal Lyophilized	Human Matrix	Levels
Seronorm™ Immunoassay Lyo							■	■		■	■			■	3
Seronorm™ Immunoassay Liq							■	■		■	■		■		4
Seronorm™ Cardiac Acute Liq								■	■				■		4
Seronorm™ Immunoprotein Lyo					■									■	2
Seronorm™ Immunoprotein Liq					■								■		2
Seronorm™ CRP Liquid					■								■		3
Seronorm™ Human	■	■	■	■			■			■				■	2
Autonorm™ Clin Chem Liq	■	■	■	■			■			■			■		3
Seronorm™ Paediatric	■			■										■	1
Seronorm™ Urine	■			■		■							■		2
Seronorm™ HbA1c Liquid												■	■		2
Seronorm™ Hb/Glucose												■	■	■	2
Seronorm™ Trace Elements Serum											■			■	2
Seronorm™ Trace Elements Whole Blood											■			■	3
Seronorm™ Trace Elements Urine											■			■	2
Autonorm™ Pharmaca Liq										■			■		2

## Customized quality control materials

In addition to branded products SERO has several decades of experience in customization of control materials for IVD companies, EQA organizations as well as group of laboratories or laboratory chains. Should you have any needs not covered

by our current range, feel free to contact us, we might have the possibility to tailor-make a specific material, for example in the clinical chemistry or immunoassay field.

# The SERO product range



## Trace Elements

Seronorm™  
Trace Elements Serum\*

Seronorm™  
Trace Elements Whole  
Blood\*

Seronorm™  
Trace Elements Urine\*

## Speciality products

Seronorm™  
Paediatric

Seronorm™  
Hb/Glucose

Seronorm™  
HbA1c Liq

Autonorm™  
Pharmaca Liq

\* Also available as research use only (RUO)

# Seronorm™ Immunoassay

Your complete immunoassay control

≥ 95%  
human  
serum



## Main features

The “all-in-one” immunoassay control

Contains more than 95% human serum;  
no preservatives or stabilizers added

Comprehensive product documentation  
for three different levels

Available in a liquid version

Available in a lyophilized version with a  
shelf life of 4 years

Independent QC material

## Benefits

*Limits the number of different controls needed in your lab,  
reduces cost, saves time and space.*

*Behaves similar to a patient sample (high commutability),  
allowing highly trustworthy results, especially during reagent lot  
changes.*

*Provides analytical data for more than 50 analytes for the most  
frequently used instruments on the market for clinically relevant  
concentrations.*

*No need for reconstitution. Eliminates potential handling errors.  
Ready to use right after thawing.*

*Longer shelf life that makes it possible to reduce the frequency of  
lot change: resource and time-related consequences.*

*Provides an objective assessment of the entire analytical system.*



**Analytes:**

17- $\alpha$ -OH-Progesterone	CK-MB	IGF-1	SHBG
25(OH) Vitamin D	Cortisol	Insulin	T3, free
25(OH) Vitamin D3	C-peptide	LH	T3, total
AFP	DHEA-Sulfate	Methylmalonic acid	T4, free
Aldosterone	Digoxin	Myoglobin	T4, total
AMH*	EPO	NT-proBNP	TBG
Androstenedione	Estradiol	Ostase	Testosterone
Anti-Tg*	Ferritin	Pro-BNP	Theophylline
Anti-TPO*	Folate	Progesterone	Thyroglobulin
$\beta$ 2-microglobulin	FSH	Prolactin	Troponin I
$\beta$ -hCG, total	hCG, total	Prostatic acid phosphatase*	Troponin T
CA 125	HE4*	PSA, complexed	TSH
CA 15-3	hGH	PSA, free	Vitamin B12
CA 19-9	Homocysteine	PSA, total	
CEA	IgE	PTH, intact	

Refer to the lot specific product documentation of currently available lots for specific analyte and stability claims. For details concerning intended use, please refer to the Instructions for Use (IFU). The documents are available on our website [www.sero.no](http://www.sero.no) or upon request.

\* Lot to lot variation may occur

**Stability**

<i>Liquid</i>	Shelf life		Open vial stability		<i>Lyophilized</i>	Shelf life		Open vial stability	
	$\leq -20\text{ }^{\circ}\text{C}$	$\leq -20\text{ }^{\circ}\text{C}$	$2-8\text{ }^{\circ}\text{C}$			$2-8\text{ }^{\circ}\text{C}$	$\leq -20\text{ }^{\circ}\text{C}$	$2-8\text{ }^{\circ}\text{C}$	
	3 years $\Delta$	1 month *	10 days $\Delta$		4 years $\Delta$	1 month **	10 days $\Delta$		

$\Delta$  With a few exceptions

\* When refrozen within 30 minutes

\*\* When reconstituted and frozen within 30 minutes

**Order Information:**

Art. no	Product	Size
207005	Seronorm™ Immunoassay Liq L-1	12 x 3 mL
207105	Seronorm™ Immunoassay Liq L-2	12 x 3 mL
207205	Seronorm™ Immunoassay Liq L-3	12 x 3 mL
206005	Seronorm™ Immunoassay Lyo L-1	12 x 3 mL
206105	Seronorm™ Immunoassay Lyo L-2	12 x 3 mL
206205	Seronorm™ Immunoassay Lyo L-3	12 x 3 mL

# Seronorm™ Immunoassay Liq Low

≥ 95%  
human  
serum

**Analytes:**

17-α-OH- Progesterone	Cortisol Ferritin	Testosterone TSH
25(OH) Vitamin D	IgE	Vitamin B12
25 (OH) Vitamin D3	PSA, total	
Aldosterone	T4, free	
Androstenedione	TBG	

Refer to the lot specific product documentation of currently available lots for specific analyte and stability claims. For details concerning intended use, please refer to the Instructions for Use (IFU). The documents are available on our website [www.sero.no](http://www.sero.no) or upon request.



**Main features**

Clinically low levels of relevant analytes for control of e.g. anaemia

Contains more than 95% human serum; no preservatives or stabilizers added

Comprehensive product documentation from independent laboratories

Liquid control material

Independent QC material

**Benefits**

*Ensures control of relevant low concentrations of cortisol, ferritin, TSH and a few other analytes.*

*Behaves similar to a patient sample (high commutability), allowing highly trustworthy results, especially during reagent lot changes.*

*Provides analytical data for the most frequently used instruments on the market.*

*No need for reconstitution. Eliminates potential handling errors. Ready to use right after thawing.*

*Provides an objective assessment of the entire analytical system.*

**Stability**

Shelf life	Open vial stability	
≤ -20 °C	≤ -20 °C	2-8 °C
3 years Δ	1 month *	10 days

Δ With a few exceptions

\* When refrozen within 30 minutes

**Order Information:**

Art. no	Product	Size
207305	Seronorm™ Immunoassay Liq Low	12 x 3 mL

# Seronorm™ Cardiac Acute Liq

The most complete acute control on the market

≥ 95%  
human  
serum

### Analytes:

BNP	Digoxin	Pro-BNP
β-hCG, total	hCG, total	Procalcitonin
CK, total	Homocysteine	ST00β
CK-MB	IL-6	Troponin I
CRP	Myoglobin	Troponin T
D-dimer	NT-proBNP	



Refer to the lot specific product documentation of currently available lots for specific analyte and stability claims. For details concerning intended use, please refer to the Instructions for Use (IFU). The documents are available on our website [www.sero.no](http://www.sero.no) or upon request.

### Main features

**Consolidated acute control that includes 17 different analytes**

**4 different levels, with the low level available in two variants (L-1A and L-1B)**

**Liquid control material**

**Comprehensive product documentation from independent laboratories**

**Independent QC material**

### Benefits

*Provides a large panel of cardiac and acute markers to rule out life-threatening conditions and helps to limit the number of controls in your lab, reduces cost, saves time and space.*

*Ensures control of relevant low concentrations for specific analytes like troponin on different instruments.*

*No need for reconstitution. Eliminates potential handling errors. Ready to use right after thawing.*

*Provides analytical data for the most frequently used instruments on the market.*

*Provides an objective assessment of the entire analytical system.*

### Stability

Shelf life	Open vial stability	
≤ -20 °C	≤ -20 °C	2-8 °C
2 years Δ	1 month *	14 days Δ

Δ With a few exceptions

\* When refrozen within 30 minutes

### Order Information:

Art. no	Product	Size
211005	Seronorm™ Cardiac Acute Liq L-1A	6 x 2 mL
211105	Seronorm™ Cardiac Acute Liq L-1B	6 x 2 mL
211205	Seronorm™ Cardiac Acute Liq L-2	6 x 2 mL
211305	Seronorm™ Cardiac Acute Liq L-3	6 x 2 mL

# Seronorm™ Immunoprotein

≥ 95%  
human  
serum

## Analytes:

α1-acid-glycoprotein	C4	IgG
α1-antitrypsin	Ceruloplasmin	IgM
α2-macroglobulin	CRP	Myoglobin
Albumin	Cystatin C	Prealbumin
Anti-CCP	Digitoxin	Protein, total
Apolipoprotein A1	Ferritin	RF
ASL	Haptoglobin	Transferrin
β2-microglobulin	IgA	Electrophoresis*
C3c	IgE	



Refer to the lot specific product documentation of currently available lots for specific analyte and stability claims. For details concerning intended use, please refer to the Instructions for Use (IFU). The documents are available on our website [www.sero.no](http://www.sero.no) or upon request.

\* Present in Seronorm Immunoprotein Liq L-1

## Main features

**Consolidated protein control**

**Contains more than 95% human serum; no preservatives or stabilizers added**

**Available in a liquid version**

**Available in a lyophilized version with a shelf life of 3 years**

**Comprehensive product documentation from independent laboratories**

**Independent QC material**

## Benefits

*Limits the number of different controls needed in your lab, reduces cost, saves time and space.*

*Behaves similar to a patient sample (high commutability), allowing highly trustworthy results, especially during reagent lot changes.*

*No need for reconstitution. Eliminates potential handling errors. Ready to use right after thawing.*

*Longer shelf life that makes it possible to reduce the frequency of lot change: resource and time-related consequences.*

*Provides analytical data on both nephelometric and turbidimetric methods.*

*Provides an objective assessment of the entire analytical system.*

## Stability

	Shelf life	Open vial stability	
<b>Liquid</b>	≤ -20 °C	≤ -20 °C	2-8 °C
	3 years Δ	1 month *	14 days Δ
<b>Lyophilized</b>	Shelf life	Open vial stability	
	2-8 °C	≤ -20 °C	2-8 °C
	3 years Δ	1 month **	14 days

Δ With a few exceptions

\* When refrozen within 30 minutes

\*\* When reconstituted and frozen within 30 minutes

## Order Information:

Art. no	Product	Size
210405	Seronorm™ Immunoprotein Liq L-1	6 x 1 mL
210505	Seronorm™ Immunoprotein Liq L-2	6 x 1 mL
202805	Seronorm™ Immunoprotein Lyo L-1	6 x 1 mL
202905	Seronorm™ Immunoprotein Lyo L-2	6 x 1 mL



# Seronorm™ CRP Liquid

Straight from the fridge into the instrument

≥ 95%  
human  
serum

## Analytes:

CRP

Refer to the lot specific product documentation of currently available lots for specific analyte and stability claims. For details concerning intended use, please refer to the Instructions for Use (IFU). The documents are available on our website [www.sero.no](http://www.sero.no) or upon request.



## Main features

Contains more than 95% human serum

Liquid material stable at 2–8°C

Three clinically relevant levels

1-month stability in opened vials (2–8°C)

Shelf life of 3 years

Independent QC material

## Benefits

*Behaves similar to a patient sample (high commutability), allowing highly trustworthy results, especially during reagent lot changes.*

*Straight from the fridge to the instrument. Ready to use; no thawing or reconstitution needed. Eliminates potential handling errors.*

*Ensures patient safety with a broader quality control range.*

*Reduces unnecessary waste for small-volume users.*

*Longer shelf life that makes it possible to reduce the frequency of lot change: resource and time-related consequences.*

*Provides an objective assessment of the entire analytical system.*

## Stability

Shelf life	Open vial stability	
	2-8 °C	15-25 °C
2-8 °C	2-8 °C	15-25 °C
3 years	31 days	7 days

## Order Information:

Art. no	Product	Size
213005	Seronorm™ CRP Liquid L-1	12 x 1 mL
213105	Seronorm™ CRP Liquid L-2	12 x 1 mL
213205	Seronorm™ CRP Liquid L-3	12 x 1 mL

# Seronorm™ Human

Multi-component control with long shelf life

≥ 95%  
human  
serum

## Analytes:

ALAT	Cholesterol, HDL	HBDH	Potassium
Albumin	Cholesterol, LDL	IgA	Protein, total
ALP	Cholesterol, total	IgG	Sodium
Amylase, pancreas	Cholinesterase	IgM	Theophylline
Amylase, total	CK	Iron	Transferrin
Apolipoprotein A1	CK-MB	Lactate	Triglycerides
Apolipoprotein B	Copper	LDH	UIBC
ASAT	Creatinine	Lipase	Urea
Bile Acid	CRP	Lithium	Uric Acid
Bilirubin, direct	Digoxin	Magnesium	Zinc
Bilirubin, total	GGT	NEFA	
Calcium	GLDH	Osmolality	
Chloride	Glucose	Phosphorus	



Refer to the lot specific product documentation of currently available lots for specific analyte and stability claims. For details concerning intended use, please refer to the Instructions for Use (IFU). The documents are available on our website [www.sero.no](http://www.sero.no) or upon request.

## Main features

**Multi-component clinical chemistry control**

**Lyophilized material with a shelf life of 4 years**

**Two clinically relevant levels**

**Contains more than 95% human serum; no preservatives or stabilizers added**

**Independent QC material**

## Benefits

*Limits the number of different controls needed in your lab, reduces cost, saves time and space.*

*Longer shelf life that makes it possible to reduce the frequency of lot change: resource and time-related consequences.*

*Ensures patient safety with a broader quality control range.*

*Behaves similar to a patient sample (high commutability), allowing highly trustworthy results, especially during reagent lot changes.*

*Provides an objective assessment of the entire analytical system.*

## Stability

Lyophilized

Shelf life	Open vial stability	
2-8 °C	≤ -20 °C	2-8 °C
4 years	1 month *	7 days Δ

\* When reconstituted and frozen within 30 minutes

## Order Information:

Art. no	Product	Size
200805	Seronorm™ Human	10 x 5 mL
203005	Seronorm™ Human High	10 x 5 mL

# Autonorm™ Clin Chem Liq

A complete chemistry control ready to use

≥ 95%  
human  
serum

## Analytes:

α1-acid-glycoprotein	Bicarbonate	CK-MB	Lactate	Salicylate
α1-antitrypsin	Bile Acid	Copper	LDH	Sodium
α2-macroglobulin	Bilirubin, direct	Creatinine	Lipase	Theophylline
ALAT	Bilirubin, total	CRP	Lithium	TIBC
Albumin	C3c	Digoxin	Magnesium	Tobramycin
ALP	C4	Ethanol	Methotrexate	Transferrin
Amikacin	Calcium	Ferritin	Osmolality	Triglycerides
Amylase, pancreas	Carbamazepine	Gentamycine	Paracetamol	UIBC
Amylase, total	Ceruloplasmin	GGT	Phenobarbitone	Urea
Apolipoprotein A1	Chloride	Glucose	Phenytoin	Uric Acid
Apolipoprotein B	Cholesterol, HDL	Haptoglobin	Phosphorus	Valproic Acid
ASAT	Cholesterol, LDL	IgA	Potassium	Vancomycin
ASL/ASO	Cholesterol, total	IgG	Prealbumin	Zinc
	Cholinesterase	IgM	Protein, total	
	CK	Iron	Quinidine	



Refer to the lot specific product documentation of currently available lots for specific analyte and stability claims. For details concerning intended use, please refer to the Instructions for Use (IFU). The documents are available on our website [www.sero.no](http://www.sero.no) or upon request.

## Main features

The “all-in-one” clinical chemistry control

Shelf life of 2,5 years

Contains more than 95% human serum; no preservatives or stabilizers added

Liquid control material

Available in three clinically relevant levels

Comprehensive product documentation from independent laboratories

Independent QC material

## Benefits

Limits the number of different controls needed in your lab, reduces cost, saves time and space.

Longer shelf life that makes it possible to reduce the frequency of lot change: resource and time-related consequences.

Behaves similar to a patient sample (high commutability), allowing highly trustworthy results, especially during reagent lot changes.

No need for reconstitution. Eliminates potential handling errors. Ready-to-use right after thawing.

Ensures patient safety with a broader quality control range.

Provides analytical data for more than 60 analytes

Provides an objective assessment of the entire analytical system.

## Stability

Shelf life	Open vial stability	
≤ -20 °C	≤ -20 °C	2-8 °C
2,5 years Δ	1 month Δ*	14 days Δ

Δ With a few exceptions

\* When refrozen within 30 minutes

## Order Information:

Art. no	Product	Size
201915	Autonorm™ Clin Chem Liq L-1	6 x 5 mL
202115	Autonorm™ Clin Chem Liq L-2	12 x 5 mL
202215	Autonorm™ Clin Chem Liq L-3	12 x 5 mL

# Seronorm™ Paediatric

Specially made for the newborn

≥ 95%  
human  
serum

## Analytes:

ALP	Glucose
Bilirubin, direct	Magnesium
Bilirubin, indirect	Phosphorus
Bilirubin, total	Potassium
Calcium	Sodium
Chloride	

Refer to the lot specific product documentation of currently available lots for specific analyte and stability claims. For details concerning intended use, please refer to the Instructions for Use (IFU). The documents are available on our website [www.sero.no](http://www.sero.no) or upon request.



## Main features

Quality control specially made for newborns

Contains more than 95% human serum; no preservatives or stabilizers added

Lyophilized material with a shelf life of 4 years

Comprehensive product documentation from independent laboratories

Independent QC material

## Benefits

*Makes it possible to control analytes at clinically relevant levels for paediatric samples.*

*Behaves similar to a patient sample (high commutability), allowing highly trustworthy results, especially during reagent lot changes.*

*Longer shelf life that makes it possible to reduce the frequency of lot change: resource and time-related consequences.*

*Provides analytical data for 11 analytes.*

*Provides an objective assessment of the entire analytical system.*

## Stability

Lyophilized

Shelf life	Open vial stability	
2-8 °C	≤ -20 °C	2-8 °C
4 years	1 month *	7 days

\* When reconstituted and frozen within 30 minutes

## Order Information:

Art. no	Product	Size
208005	Seronorm™ Paediatric	6 x 3 mL



# Seronorm™ Urine

≥ 95%  
human  
urine

## Analytes:

Albumin/Creatinine quota	Glucose	Pregnancy
Amylase	Magnesium	Protein, total
Calcium	Microalbumin	Sodium
Chloride	Osmolality	Specific gravity
Cortisol, free	pH	Urea
Creatinine	Phosphorus	Uric Acid
	Potassium	

Refer to the lot specific product documentation of currently available lots for specific analyte and stability claims. For details concerning intended use, please refer to the Instructions for Use (IFU). The documents are available on our website [www.sero.no](http://www.sero.no) or upon request.



## Main features

Contains more than 95% human urine

Liquid material stable at 2–8°C

Long stability in opened vials: 28 days at 2–8°C

Independent QC material

## Benefits

*Behaves similar to a patient sample (high commutability), allowing highly trustworthy results including stable creatinine, especially during reagent lot changes.*

*Straight from the fridge to the instrument. Ready to use; no thawing or reconstitution needed. Eliminates potential handling errors.*

*Reduces unnecessary waste for small-volume users.*

*Provides an objective assessment of the entire analytical system.*

## Stability

	Shelf life	Open vial stability
Liquid	2–8 °C	2–8 °C
	2 years	28 days

## Order Information:

Art. no	Product	Size
208505	Seronorm™ Urine L-1	10 x 8 mL
208605	Seronorm™ Urine L-2	10 x 8 mL

# Seronorm™ HbA1c Liquid

≥ 95%  
human  
whole blood

## Analytes:

HbA1c

Refer to the lot specific product documentation of currently available lots for specific analyte and stability claims. For details concerning intended use, please refer to the Instructions for Use (IFU). The documents are available on our website [www.sero.no](http://www.sero.no) or upon request.



## Main features

Product documentation from independent laboratories

Contains more than 95% human whole blood; no preservatives or stabilizers added

Liquid material with a shelf life of 3 years.

Produced through in vitro glycation of human blood

Independent QC material

## Benefits

*Provides analytical data for both immunological and point-of-care methods.*

*Behaves similar to a patient sample (high commutability), allowing highly trustworthy results, especially during reagent lot changes.*

*No need for reconstitution. Eliminates potential handling errors. Ready to use right after thawing.*

*Highly ethical product without any use of blood from diabetic patients.*

*Provides an objective assessment of the entire analytical system.*

## Stability

Shelf life	Open vial stability
≤ -20 °C	2-8 °C
3 years	28 days

## Order Information:

Art. no	Product	Size
209005	Seronorm™ HbA1c Liquid L-1	3 x 1 mL
209105	Seronorm™ HbA1c Liquid L-2	3 x 1 mL

# Seronorm™ Hb/Glucose

Quality control for point of care, straight from the fridge

## Analytes:

Glucose  
Hemoglobin

Refer to the lot specific product documentation of currently available lots for specific analyte and stability claims. For details concerning intended use, please refer to the Instructions for Use (IFU). The documents are available on our website [www.sero.no](http://www.sero.no) or upon request.



## Main features

Quality control for Point of Care

Available in two clinically relevant levels

Liquid material with a shelf life of 3 years

Long stability in opened vials: 28 days at 2-8 °C

Independent QC material

## Benefits

*Combines hemoglobin and glucose in a single control.*

*Ensures patient safety with a broader quality control range.*

*No need for reconstitution. Eliminates potential handling errors. Ready to use right after thawing.*

*Reduces unnecessary waste for small-volume users.*

*Provides an objective assessment of the entire analytical system.*

## Stability

	Shelf life	Open vial stability
Liquid	2-8 °C	2-8 °C
	3 years	28 days

## Order Information:

Art. no	Product	Size
103005	Seronorm™ Hb/Glucose L-1	6 x 1 mL
103105	Seronorm™ Hb/Glucose L-2	6 x 1 mL

# Seronorm™ Trace Elements Serum

≥ 95%  
human  
serum

## The clinically most relevant elements:

Aluminium	Fluoride	Mercury	Sodium
Calcium	Iron	Nickel	Zinc
Chromium	Lithium	Phosphorus	
Cobalt	Magnesium	Potassium	
Copper	Manganese	Selenium	

Refer to analyte index (page 30) for a total of more than 60 elements.

Refer to the lot specific product documentation of currently available lots for specific elements and stability claims. For details concerning intended use, please refer to the Instructions for Use (IFU). The documents are available on our website [www.sero.no](http://www.sero.no) or upon request.



## Main features

Multicomponent including more than 60 elements

Contains more than 95% human serum; no preservatives or stabilizers added

Available in two clinically relevant levels

Lyophilized material with a shelf life of 7 years

Comprehensive product documentation from independent laboratories with analytical values traceable to international reference materials

Independent QC material

## Stability

Lyophilized

Shelf life	Open vial stability	
2-8 °C	≤ -20 °C	2-8 °C
7 years	1 month *	7 days

\* When reconstituted and frozen within 30 minutes

## Benefits

Could be used in a wide variety of applications such as nutrition, occupational health, environmental health, toxicology, food safety, veterinary and biological studies.

Behaves similar to a patient sample (high commutability), allowing highly trustworthy results, especially during reagent lot changes.

Ensures patient safety with a broader quality control range.

Longer shelf life that makes it possible to reduce the frequency of lot change: resource and time-related consequences.

Provides analytical data for more than 60 elements.

Provides an objective assessment of the entire analytical system.

## Order Information:

Art. no	Product	Size
201405	Seronorm™ Trace Elements Serum L-1	6 x 3 mL
203105	Seronorm™ Trace Elements Serum L-2	6 x 3 mL
201413	Seronorm™ Trace Elements Serum L-1 RUO*	6 x 3 mL
203113	Seronorm™ Trace Elements Serum L-2 RUO*	6 x 3 mL

\* The Trace Elements RUO products (Research Use Only) are not intended for use for medical in vitro diagnostic purposes. For questions related to this, please contact your distributor or SERO.

# Seronorm™ Trace Elements Whole Blood

≥ 95%  
human  
whole blood

## The clinically most relevant elements:

Aluminium	Calcium	Lead	Molybdenum	Tin
Antimony	Chromium	Lithium	Nickel	Vanadium
Arsenic	Cobalt	Magnesium	Selenium	Zinc
Beryllium	Copper	Manganese	Silver	
Bismuth	Fluoride*	Mercury	Strontium	
Cadmium	Iodine	Methylmercury	Thallium	



Refer to analyte index (page 30) for a total of more than 60 elements.

Refer to the lot specific product documentation of currently available lots for specific elements and stability claims. For details concerning intended use, please refer to the Instructions for Use (IFU). The documents are available on our website [www.sero.no](http://www.sero.no) or upon request.

\* Only present in L-2 and L-3

## Main features

Multicomponent including more than 60 elements

Contains more than 95% human blood; no preservatives or stabilizers added

Available in three clinically relevant levels

Lyophilized material with a shelf life of 5 years

Comprehensive product documentation from independent laboratories with analytical values traceable to international reference materials

Independent QC material

## Stability

Lyophilized

Shelf life	Open vial stability	
2-8 °C	≤ -20 °C	2-8 °C
5 years	1 month *	7 days

\* When reconstituted and frozen within 30 minutes

## Benefits

Could be used in a wide variety of applications such as nutrition, occupational health, environmental health, toxicology, food safety, veterinary and biological studies.

Behaves similar to a patient sample (high commutability), allowing highly trustworthy results, especially during reagent lot changes.

Ensures patient safety with a broader quality control range.

Longer shelf life that makes it possible to reduce the frequency of lot change: resource and time-related consequences.

Provides analytical data for more than 60 elements.

Provides an objective assessment of the entire analytical system.

## Order Information:

Art. no	Product	Size
210105	Seronorm™ Trace Elements Whole Blood L-1	10 x 3 mL
210205	Seronorm™ Trace Elements Whole Blood L-2	10 x 3 mL
210305	Seronorm™ Trace Elements Whole Blood L-3	10 x 3 mL
210113	Seronorm™ Trace Elements Whole Blood L-1 RUO*	10 x 3 mL
210213	Seronorm™ Trace Elements Whole Blood L-2 RUO*	10 x 3 mL
210313	Seronorm™ Trace Elements Whole Blood L-3 RUO*	10 x 3 mL

\* The Trace Elements RUO products (Research Use Only) are not intended for use for medical in vitro diagnostic purposes. For questions related to this, please contact your distributor or SERO.



# Seronorm™ Trace Elements Urine

≥ 95%  
human  
urine

## The clinically most relevant elements:

Aluminium	Chromium	Lead	Selenium
Antimony	Cobalt	Magnesium	Tellurium
Arsenic	Copper	Manganese	Thallium
Beryllium	Fluoride*	Mercury	Tin
Bismuth	Iodine	Molybdenum	Vanadium
Cadmium	Iron	Nickel	Zinc

Refer to analyte index (page 30) for a total of more than 60 elements.

Refer to the lot specific product documentation of currently available lots for specific elements and stability claims. For details concerning intended use, please refer to the Instructions for Use (IFU). The documents are available on our website [www.sero.no](http://www.sero.no) or upon request.

\*Only in L-2



## Main features

Multicomponent including more than 60 elements

Contains more than 95 % human urine; no preservatives or stabilizers added

Available in two clinically relevant levels

Lyophilized material with a shelf life of 7 years

Comprehensive product documentation from independent laboratories with analytical values traceable to international reference materials

Independent QC material

## Benefits

Could be used in a wide variety of applications such as nutrition, occupational health, environmental health, toxicology, food safety, veterinary and biological studies.

Behaves similar to a patient sample (high commutability), allowing highly trustworthy results, especially during reagent lot changes.

Ensures patient safety with a broader quality control range.

Longer shelf life that makes it possible to reduce the frequency of lot change: resource and time-related consequences.

Provides analytical data for more than 60 elements.

Provides an objective assessment of the entire analytical system.

## Stability

Lyophilized

Shelf life	Open vial stability	
2-8 °C	≤ -20 °C	2-8 °C
7 years	1 month *	7 days

\* When reconstituted and frozen within 30 minutes

## Order Information:

Art. no	Product	Size
210605	Seronorm™ Trace Elements Urine L-1	10 x 5 mL
210705	Seronorm™ Trace Elements Urine L-2	10 x 5 mL
210613	Seronorm™ Trace Elements Urine L-1 RUO*	10 x 5 mL
210713	Seronorm™ Trace Elements Urine L-2 RUO*	10 x 5 mL

\* The Trace Elements RUO products (Research Use Only) are not intended for use for medical in vitro diagnostic purposes. For questions related to this, please contact your distributor or SERO.

# Autonorm™ Pharmaca Liq

“A pharmacy in a bottle...”

≥ 95%  
human  
serum

## Pharmaceuticals:

Amikacin	Gentamycine	Paracetamol	Topiramate
Carbamazepine	Haloperidol	Phenobarbitone	Valproic acid
Clonazepam	Lamotrigine	Phenytoin	Vancomycin
Cyclosporine	Levetiracetam	Teicoplanin	Zonisamide
Diazepam	Lithium	Theophylline	
Digoxin	Methotrexate	Tobramycin	

Refer to the lot specific product documentation of currently available lots for specific analyte and stability claims. For details concerning intended use, please refer to the Instructions for Use (IFU). The documents are available on our website [www.sero.no](http://www.sero.no) or upon request.



## Main features

Contains more than 95% human serum; no preservatives or stabilizers added

Two clinically relevant levels. Contains more than 20 therapeutic drugs

Liquid control material

Independent QC material

## Benefits

*Behaves similar to a patient sample (high commutability), allowing highly trustworthy results, especially during reagent lot changes.*

*Ensures patient safety with a broader quality control range.*

*No need for reconstitution. Eliminates potential handling errors. Ready to use right after thawing.*

*Provides an objective assessment of the entire analytical system.*

## Stability

Shelf life	Open vial stability	
≤ -20 °C	≤ -20 °C	2-8 °C
2 years Δ	1 month *	7 days

Δ With a few exceptions

\* When refrozen within 30 minutes

## Order Information:

Art. no	Product	Size
211705	Autonorm™ Pharmaca Liq L-1	12 x 3 mL
211805	Autonorm™ Pharmaca Liq L-2	12 x 3 mL

## Our mission

SERO's mission is to improve patient care by contributing to analyses that produce reliable and comparable results from one day to another and between laboratories.







Analyte index  
A - B

	Seronorm™ Immunoassay	Seronorm™ Immunoassay Liq low	Seronorm™ Cardiac Acute Liq	Seronorm™ Immunoprotein	Seronorm™ CRP Liquid	Seronorm™ Human	Autonorm™ Clin Chem Liq	Seronorm™ Paediatric	Seronorm™ Urine	Seronorm™ HbA1c Liquid	Seronorm™ Hb/Glucose	Seronorm™ Trace Elements Serum	Seronorm™ Trace Elements Whole Blood	Seronorm™ Trace Elements Urine	Autonorm™ Pharmaca Liq
See page number	12	14	15	16	17	18	19	20	21	22	23	24	25	26	27
17-α-OH-Progesterone	○	○													
25(OH) Vitamin D	○	○													
α1-acid-glycoprotein				○			○								
α1-antitrypsin				○			○								
α2-macroglobulin				○			○								
AFP	○														
ALAT						○	○								
Albumin				○		○	○								
Albumin/Creatinine quota									○						
Aldosterone	○	○													
ALP						○	○	○							
Aluminium Al												○	○	○	
AMH	○														
Amikacin							○								○
Amylase, pancreas						○	○								
Amylase, total						○	○		○						
Androstenedione	○	○													
Anti-CCP				○											
Antimony Sb												○	○	○	
Anti-Tg	○														
Anti-TPO	○														
Apolipoprotein A1				○		○	○								
Apolipoprotein B						○	○								
Arsenic As												○	○	○	
ASAT						○	○								
ASL/ASO				○			○								
β2-microglobulin	○			○											
β-hCG, total	○		○												
Barium Ba												○	○	○	
Beryllium Be												○	○	○	
Bicarbonate							○								
Bile Acid						○									
Bilirubin, direct						○	○	○							
Bilirubin, indirect								○							
Bilirubin, total						○	○	○							
Bismuth Bi												○	○	○	
BNP			○												
Bromine Br												○	○	○	

○ Analyte present   ■ Present in L-1   ▲ Present in L-2

The above index is updated as of January 2019.



## Analyte index

### C - D

	Seronorm™ Immunoassay	Seronorm™ Immunoassay Liq low	Seronorm™ Cardiac Acute Liq	Seronorm™ Immunoprotein	Seronorm™ CRP Liquid	Seronorm™ Human	Autonorm™ Clin Chem Liq	Seronorm™ Paediatric	Seronorm™ Urine	Seronorm™ HbA1c Liquid	Seronorm™ Hb/Glucose	Seronorm™ Trace Elements Serum	Seronorm™ Trace Elements Whole Blood	Seronorm™ Trace Elements Urine	Autonorm™ Pharmaca Liq
See page number	12	14	15	16	17	18	19	20	21	22	23	24	25	26	27
C3c				○			○								
C4				○			○								
CA 125	○														
CA 15-3	○														
CA 19-9	○														
Cadmium Cd												○	○	○	
Calcium Ca						○	○	○	○			○	○	○	
Carbamazepine							○								○
CEA	○														
Cerium Ce												○	○	○	
Ceruloplasmin				○			○								
Cesium Cs												○	○	○	
Chloride						○	○	○	○						
Cholesterol, HDL						○	○								
Cholesterol, LDL						○	○								
Cholesterol, total						○	○								
Cholinesterase						○	○								
Chromium Cr												○	○	○	
CK			○			○	○								
CK-MB	○		○			○	○								
Clonazepam															○
Cobalt Co												○	○	○	
Copper Cu						○	○					○	○	○	
Cortisol	○	○													
Cortisol, free									○						
C-peptide	○														
Creatinine						○	○		○						
CRP			○	○	○	○	○								
Cyclosporine															○
Cystatin C				○											
DHEA-Sulfate	○														
Diazepam															○
D-dimer			○												
Digitoxin				○											
Digoxin	○		○			○	○								○
Dysprosium Dy												○	○	○	

○ Analyte present   ■ Present in L-1   ▲ Present in L-2

The above index is updated as of January 2019.

Analyte index  
E - I

See page number	Seronorm™ Immunoassay	Seronorm™ Immunoassay Liq low	Seronorm™ Cardiac Acute Liq	Seronorm™ Immunoprotein	Seronorm™ CRP Liquid	Seronorm™ Human	Autonorm™ Clin Chem Liq	Seronorm™ Paediatric	Seronorm™ Urine	Seronorm™ HbA1c Liquid	Seronorm™ Hb/Glucose	Seronorm™ Trace Elements Serum	Seronorm™ Trace Elements Whole Blood	Seronorm™ Trace Elements Urine	Autonorm™ Pharmaca Liq
Electrophoresis				■											
EPO	o														
Erbium Er												o	o	o	
Estradiol	o														
Ethanol							o								
Europium Eu												o	o	o	
Ferritin	o	o		o			o								
Fluoride F												o	●	▲	
Folate	o														
FSH	o														
Gadolinium Gd												▲	o	o	
Gallium Ga												o	o	o	
Gentamycine							o								o
GGT						o	o								
GLDH						o									
Glucose						o	o	o	o		o				
Gold Au												o	o	o	
Hafnium Hf												o	o	o	
Haloperidol															o
Haptoglobin				o			o								
HbA1c										o					
HBDH						o									
hCG, total	o		o												
HE4	o														
Hemoglobin											o				
hGH	o														
Holmium Ho												o	o	o	
Homocysteine	o		o												
IgA				o		o	o								
IgE	o	o		o											
IGF1	o														
IgG				o		o	o								
IgM				o		o	o								
Insulin	o														
Iodine I												o	o	o	
Iridium Ir												o	o	o	
Iron Fe						o	o					o	o	o	

o Analyte present   ■ Present in L-1   ▲ Present in L-2   ● Present in L-2 and L-3   *The above index is updated as of January 2019.*

## Analyte index

### L – Prea

	Seronorm™ Immunoassay	Seronorm™ Immunoassay Liq low	Seronorm™ Cardiac Acute Liq	Seronorm™ Immunoprotein	Seronorm™ CRP Liquid	Seronorm™ Human	Autonorm™ Clin Chem Liq	Seronorm™ Paediatric	Seronorm™ Urine	Seronorm™ HbA1c Liquid	Seronorm™ Hb/Glucose	Seronorm™ Trace Elements Serum	Seronorm™ Trace Elements Whole Blood	Seronorm™ Trace Elements Urine	Autonorm™ Pharmaca Liq
See page number	12	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Lactate						○	○								
Lamotrigine															○
Lanthanum La												○	○	○	
LDH						○	○								
Lead Pb												○	○	○	
Levetiracetam															○
LH	○														
Lipase						○	○								
Lithium Li						○	○					○	○	○	○
Lutetium Lu												○	○	○	
Magnesium Mg						○	○	○	○			○	○	○	
Manganese Mn												○	○	○	
Methylmercury													○		
Mercury Hg												○	○	○	
Methotrexate							○								○
Methylmalonic acid	○														
Microalbumin									○						
Molybdenum Mo												○	○	○	
Myoglobin	○		○	○											
NEFA						○									
Neodymium Nd												○	○	○	
Nickel Ni												○	○	○	
Niobium Nb												○	○	○	
NT-proBNP	○		○												
Osmolality						○	○		○						
Ostase	○														
Paracetamol							○								○
pH									○						
Phenobarbitone							○								○
Phenytoin							○								○
Phosphorus P						○	○	○	○			○	○	○	
Platinum Pt												○	○	○	
Potassium K						○	○	○	○			○	○	○	
Praseodymium Pr												○	○	○	
Prealbumin				○			○								

○ Analyte present   ■ Present in L-1   ▲ Present in L-2

The above index is updated as of January 2019.

## Analyte index

### Preg – Te

	Seronorm™ Immunoassay	Seronorm™ Immunoassay Liq low	Seronorm™ Cardiac Acute Liq	Seronorm™ Immunoprotein	Seronorm™ CRP Liquid	Seronorm™ Human	Autonom™ Clin Chem Liq	Seronorm™ Paediatric	Seronorm™ Urine	Seronorm™ HbA1c Liquid	Seronorm™ Hb/Glucose	Seronorm™ Trace Elements Serum	Seronorm™ Trace Elements Whole Blood	Seronorm™ Trace Elements Urine	Autonom™ Pharmaca Liq
See page number	12	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Pregnancy									○						
Pro-BNP	○		○												
Progesterone	○														
Procalcitonin			○												
Prolactin	○														
Prostatic acid phosphatase	○														
Protein, total				○		○	○		○						
PSA, complexed	○														
PSA, free	○														
PSA, total	○	○													
PTH, intact	○														
RF				○											
Rhenium												○	○	○	
Rubidium Rb												○	○	○	
S-100β			○												
Samarium Sm												○	○	○	
Selenium Se												○	○	○	
SHBG	○														
Silver Ag												○	○	○	
Sodium Na						○	○	○	○			○	○	○	
Specific gravity									○						
Strontium Sr												○	○	○	
Sulfur S												○	○	○	
T3, free	○														
T3, total	○														
T4, free	○	○													
T4, total	○	○													
Tantalum Ta												○	○	○	
TBG	○														
Teicoplanin															○
Tellurium Te												○	○	○	
Terbium Tb												○	○	○	
Testosterone	○	○													

○ Analyte present    ■ Present in L-1    ▲ Present in L-2

The above index is updated as of January 2019.

## Analyte index

### Th - Z

See page number	Seronorm™ Immunoassay	Seronorm™ Immunoassay Liq low	Seronorm™ Cardiac Acute Liq	Seronorm™ Immunoprotein	Seronorm™ CRP Liquid	Seronorm™ Human	Autonorm™ Clin Chem Liq	Seronorm™ Paediatric	Seronorm™ Urine	Seronorm™ HbA1c Liquid	Seronorm™ Hb/Glucose	Seronorm™ Trace Elements Serum	Seronorm™ Trace Elements Whole Blood	Seronorm™ Trace Elements Urine	Autonorm™ Pharmaca Liq
	12	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Thallium Tl												○	○	○	
Theophylline	○					○	○								○
Thorium Th												○	○	○	
Thulium Tm												○	○	○	
Thyreoglobulin	○														
TIBC							○								
Tin Sn												○	○	○	
Tobramycin							○								○
Topiramate															○
Transferrin				○		○	○								
Triglycerides						○	○								
Troponin I	○		○												
Troponin T	○		○												
TSH	○	○													
UIBC						○	○								
Uranium U												○	○	○	
Urea						○	○		○						
Uric Acid						○	○		○						
Valproic Acid							○								○
Vanadium V												○	○	○	
Vancomycin							○								○
Vitamin B12	○	○													
Ytterbium Yb												○	○	○	
Yttrium Y												○	○	○	
Zinc Zn						○	○					○	○	○	
Zirconium Zr												○	○	○	
Zonisamide															○

○ Analyte present   ■ Present in L-1   ▲ Present in L-2

The above index is updated as of January 2019.

SERO's mission is to improve patient care by contributing to analyses that produce reliable and comparable results from one day to another, and between laboratories.

2019 Edition

Our products are under continuous development. Updated information can be found on our website.

SERO's products are available in more than 40 countries through an international network of specialized distributors.

For additional product details, please contact your local distributor (please see our website for contact information). No local distributor? Please contact us directly:

+47 66 85 89 00 or  
seronorm@sero.no

Interested in distributing SERO's products in your country? We would be happy to receive your application.

Learn more about SERO at  
[www.sero.no](http://www.sero.no)



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