

SERO, the
independent
control sera
specialist
since 1963



PRODUCT CATALOGUE

SERO's range of Branded Control Sera

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SERO - dedicated to the laboratory medicine since 1963

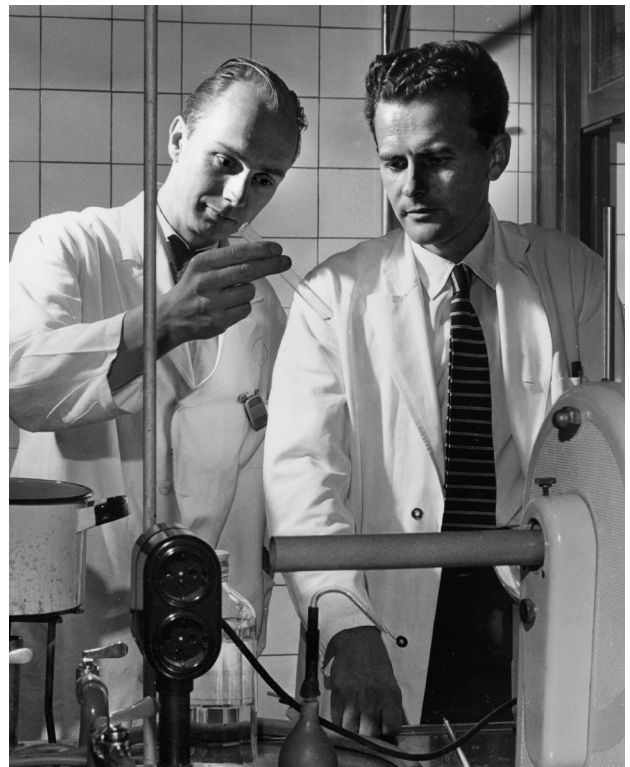
SERO is a Norwegian expertise-based biotechnology company manufacturing and marketing quality control materials worldwide.

SERO has been a pioneer in the field of QC materials for laboratories. SERO's founder, Professor Dr Med. Lorentz Eldjarn, started developing control sera as early as in the 1950s. Professor Eldjarn's extensive professional knowledge and passionate interest in laboratory quality led to the establishment of SERO in 1963. In 1975, he received the Clinical Chemistry Award from the IFCC (International Federation of Clinical Chemistry).

Over the decades, SERO has developed extensive experience as a specialized manufacturer of quality controls and calibrators – covering immunoassay, clinical chemistry, lipids, hormones, proteins, tumour markers, cardiac markers, diabetes, trace elements and drugs. To fulfill the needs of the rapidly evolving field of laboratory medicine, the number of components incorporated into these products has also steadily grown.

SERO's head office is situated just outside Oslo. Here we run an integrated unit including R&D, purchasing, production, laboratory, logistics, marketing and sales operations in order to secure the best standards from raw materials to end users.

In addition to having a strong position in our home market Scandinavia, we export more than 90 % of our production to more than 50 countries worldwide, including quality-conscious markets such as Japan and Germany - from our ISO 9001 and ISO 13485 certified facilities. SERO runs its own accredited laboratory (ISO 17025 certified), which plays an important role in the quality control of all our products.



The SERO staff at your service: Competence, dedication, flexibility

Whereas most IVD companies are involved in many activities, producing control sera is SERO's dedicated production activity.



This allows us to focus exclusively on the knowledge and technical expertise needed to produce world-class control sera. SERO's staff are highly competent and dedicated; we are flexible and are able to adapt our products quickly to meet our customers' needs.

With the "black box system" that most instrument producers offer nowadays, the best way medical laboratories can control their

laboratory system is through the use of third party quality controls. SERO is proud to be the independent control sera specialist that offers laboratories the tools necessary to ensure reliable analytical results from day to day and between laboratories.

Together, all these factors make us unique and highly appreciated by the large number of customers we serve.

Products you can rely on

The purpose of quality control materials in the clinical laboratory is to monitor the different phases of the analytical process in order to detect, reduce and correct any deficiencies that could result in wrong clinical decision-making.

ISO 15189 “Medical laboratories – Requirements for quality and competence” clearly states its recommendations with regards to the composition of quality control materials in section 5.6.2.2:

“The laboratory shall use quality control materials that react to the examining system in a manner as close as possible to patient samples”.

Certain analytes such as bilirubin, PTH, C-peptide and various enzymes are biologically unstable in bodily fluids. Addition of stabilizers or the use of a buffer-based matrix rather than a human serum matrix may have a positive effect on the stability. However, such manipulation may result in a material that behaves differently than a patient sample, thereby becoming a non-commutable material. This contradicts the recommendations from ISO 15189. Minor deviations in the performance of instruments or reagents may especially influence the measurement of such unstable components and it is important to use a control with the same properties as patient samples. The lack of correlation between the observed shifts in analytical results on patient samples and many

control materials when new lots of reagents are introduced is very well documented (Miller et al, 2011, Clinical chemistry). This highlights the need for the laboratory to focus more on commutability

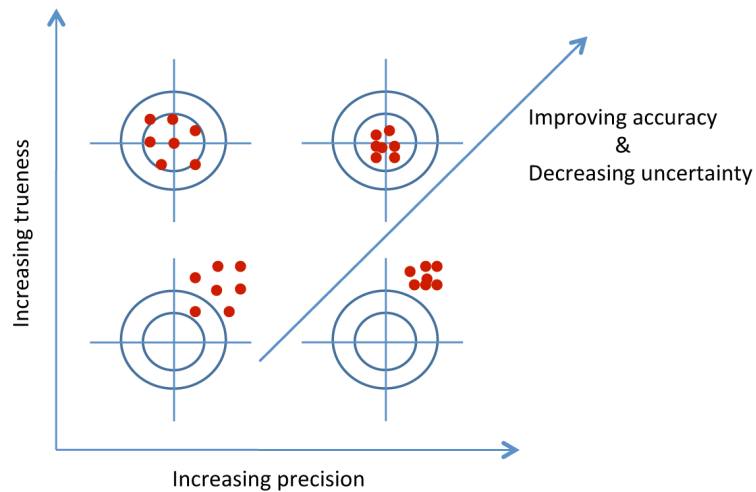
than stability when selecting the right control. To ensure the best commutability, SEROs main products contain more than 95 % genuine human serum with no stabilizers or preservatives added. A strict selection of raw materials based on our high level of expertise and highly controlled manufacturing processes ensures the high quality and stability of SERO products. Raw materials and suppliers are also selected based on ethical standards, accountability, traceability and biosafety.

The human serum used in our products is collected from healthy, voluntary, unpaid donors in accordance with European standards and regulations for blood bank services. Each plasma unit and other human-based additives are tested negative for Hbs antigen and HCV, HIV I and HIV II antibodies with CE-approved tests. Human-based additives are only sourced from reputable companies that can document the safe and ethical origin of the materials. As the most important use of safe human blood products is for the treatment of patients, there is an unmet medical need for such products in many countries. Thus in line with recommendations from the WHO and medical authorities, and to give our customers an ethical choice, SERO also produces animal-based control sera when such products show full technical compatibility with human products for use as control materials. All animal raw materials are collected from veterinary-certified healthy animals at Norwegian facilities which are government approved according to EU-regulations. Norway is free of most veterinary diseases and BSE has never been reported in the country.



Trustworthy laboratory results through independent and traceable control sera

For any laboratory, choosing a Quality Control (QC) strategy is an important decision that has significant implications for the quality of the laboratory results, which in the end provide medical doctors with a basis for clinical diagnosis.



Laboratory quality control requires a focus both on precision and trueness as defined in ISO 5725-1/1994 & ISO Guide 99/2007.

For most components and methods imprecision is a minor problem compared to the lack of trueness and comparability with other methods and laboratories. The right choice of control sera will enable an independent performance evaluation of instruments, reagents and calibrators. Since 1963, SERO has

been committed to providing independent values. Thus, our branded controls have never been optimized to any manufacturer's instrument or test kit.

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 the controls can be used to compare the trueness of your analytical results with other instruments and reference methods. This

is achieved through providing unique data-keys (certificate of analysis) with specific information on analytical results, methods and traceability in accordance with ISO 17511. For many components the analytical values are traceable to the highest level of the calibration hierarchy through the use of reference methods and/or reference materials, whenever available. In other words – values everyone can trust.

Customized control sera and calibrators

Over the next pages you will find an overview of our product range. If you have specific needs which are not covered by our branded products, SERO can also provide you with customized control sera and calibrators. These products benefit from the same reputation and

have the same high standards as our branded controls. Among our main customer groups for our customized controls are large laboratories or group of laboratories in addition to EQA organizations and diagnostic companies.

SERO's Branded Control Sera

	Clin. Chemistry	Lipids	Enzymes	Proteins	Cardiac Markers	Acute Markers	Tumor Markers	Therapeutic drugs	Trace Elements	Diabetes	Lyophilized Liquid	Animal Matrix	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				■								■		2
Seronorm™ Human	■	■	■	■		■			■				■	2
Autonorm™ Human Liquid	■	■	■	■		■			■			■		2
Seronorm™ Paediatric	■			■									■	1
Seronorm™ Urine	■			■		■						■		2
Seronorm™	■	■	■									■	■	1
Pathonorm™	■	■	■									■	■	2
Seronorm™ Lipid		■										■	■	1
Autonorm™	■	■	■						■			■	■	1
Seronorm™ HbA1c Liquid										■		■		2
Seronorm™ Hb/Glucose										■	■		■	2
Seronorm™ Trace Elements Serum									■			■		2
Seronorm™ Trace Elements Whole Blood									■			■		3
Seronorm™ Trace Elements Urine									■			■		2
Seronorm™ Pharmaca									■			■	■	2

Product benefits

Our product range is developed with focus on features that our customers find important:

- Many components in the same control – simplifying laboratory daily life and reducing time and cost
- Good long term stability features – allowing the laboratory to use the same batch for a long period of time
- Concentrations and levels – carefully selected to contribute to improved clinical decision making
- Liquid and lyophilized material – giving you the opportunity to choose
- Independent and traceable values – ensuring reliable laboratory results
- Precision and accuracy controls – for a complete quality control system in your laboratory

Seronorm™ Immunoassay

The most complete routine immunoassay control in the market



Product features

- The "All-in-one" immunoassay control, combining hormones, cardiac and tumour markers
- Comprehensive product documentation, providing assigned values for more than 50 components from the most frequently used instruments on the market
- Available both as freeze-dried and liquid controls
- Three (freeze-dried)/four (liquid) clinically relevant levels – each level available separately
- Seronorm™ Immunoassay Liq low – a product which complements Seronorm™ Immunoassay with clinically relevant low levels of Cortisol, Ferritin, IgE, free T4, TSH, 25(OH) Vitamin D and Vitamin B12
- Long shelf life
- No preservatives or stabilizers added

Stability

- *Liquid material:*
 - 3 years stability when stored at $\leq -20\text{ }^{\circ}\text{C}$ (with a few exceptions)
 - Opened vials (with a few exceptions):
1 month at $\leq -20\text{ }^{\circ}\text{C}$ when refrozen within 30 minutes
10 days at $2-8\text{ }^{\circ}\text{C}$
- *Freeze-dried material:*
 - 4 years stability when stored at $2-8\text{ }^{\circ}\text{C}$
 - After reconstitution (with a few exceptions):
1 month at $\leq -20\text{ }^{\circ}\text{C}$
10 days at $2-8\text{ }^{\circ}\text{C}$

Components:

17- α -OH-Progesterone	IgE*
25(OH) Vitamin D*	IGF1
AFP	Insulin
Aldosterone	LH
AMH	Methylmalonic acid
Androstendione	Myoglobin
Anti-Tg	NT-proBNP
Anti-TPO	Ostase
β 2-microglobulin	Progesterone
β -hCG, total	Prolactin
CA 125	Prostatic acid phosphatase
CA 15-3	PSA, free
CA 19-9	PSA, total*
CEA	PTH, intact
CK-MB	SHBG
Cortisol*	T3, free
C-peptide	T3, total
DHEA-Sulfate	T4, free*
Digoxin	T4, total*
EPO	TBG
Estradiol	Testosterone
Ferritin*	Theophylline
Folate	Thyreoglobulin
FSH	Troponin I
hCG, total	Troponin T
hGH	TSH*
Homocysteine	Vitamin B12*

Refer to the package insert of currently available lots for specific analyte and stability claims.

* Also available in Seronorm™ Immunoassay Liq Low in clinically relevant low levels.

Order Information:

Art. no	Product Name	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
207305	Seronorm™ Immunoassay Liq low	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™ Cardiac Acute Liq



Product features

- Seronorm Cardiac Acute Liq is the most complete acute control on the market, combining the complete panel of cardiac markers and acute markers to rule out life threatening conditions such as sepsis, brain trauma, thrombosis and ectopic pregnancy.
- The product is a liquid material based on human serum.
- Product documentation is provided with assigned values for all components on the most frequently used clinical laboratory and point-of-care test systems on the market.
- As a result of lack of standardization, the various methods for the markers Troponin I, NT-proBNP and BNP give widely different results. To achieve better control of these critical markers in your laboratory, the low level is available in two variants (L-1A and L-1B) to ensure relevant levels on the various platforms.

Stability

- 2 years stability when stored at ≤ 20 °C (with a few exceptions)
- Opened vials: 14 days (with a few exceptions)

Components:

BNP	Homocysteine
β -HCG, total	Myoglobin
CK, total	NT-proBNP
CK-MB	Procalcitonin
CRP-hs	S100 β
D-dimer	Troponin I
Digoxin	Troponin T

Refer to the package insert of currently available lots for specific analyte and stability claims.

Order Information:

Art. no	Product Name	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



Product features

- Human-based accuracy protein control, containing more than 20 proteins, e.g. Cystatin C, anti-CCP, RF, CRP and ASL
- Product documentation with nephelometric and turbidimetric methods
- Two clinically relevant levels – each level available separately
- Available both as freeze-dried and liquid controls
- No preservatives or stabilizers added

Stability

- *Liquid material:*
 - 3 years stability when stored at $\leq -20\text{ °C}$
 - Opened vials (with a few exceptions):
 - 1 month at $\leq -20\text{ °C}$
 - 14 days at $2-8\text{ °C}$
- *Freeze-dried material:*
 - 3 years stability when stored at $2-8\text{ °C}$
 - After reconstitution (with a few exceptions):
 - 1 month at $\leq -20\text{ °C}$
 - 7 days at $2-8\text{ °C}$

Components:

α 1-acid-glycoprotein	Digitoxin
α 1-antitrypsin	Ferritin
α 2-macroglobulin	Haptoglobin
Albumin	IgA
Anti-CCP	IgE
Apolipoprotein A1	IgG
ASL	IgM
β 2-microglobulin	Myoglobin
C3c	Prealbumin
C4	Protein, total
Ceruloplasmin	RF
CRP	Transferrin
Cystatin C	Electrophoresis*

Refer to the package insert of currently available lots for specific analyte and stability claims.

* only in Seronorm Immunoprotein Liq L-1

Order Information:

Art. no	Product Name	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



Product features

- Cost effective and practical human-based CRP control
- Two clinically relevant levels with method-specific assigned values
- Liquid – ready to use straight from the fridge!
- Good stability in opened vials

Stability

- 3 years stability when stored at 2-8 °C
- Opened vials:
 - 28 days at 2-8 °C
 - 7 days at 15-25 °C

Components:

CRP

Refer to the package insert of currently available lots for specific analyte and stability claims.

Order Information:

Art. no	Product Name	Size
202205	Seronorm™ CRP Liquid L-1	12 x 1 mL
202305	Seronorm™ CRP Liquid L-2	12 x 1 mL

Seronorm™ Human

Multi component control with long shelf life



Product features

- Multi-component human-based assayed control which covers most components analysed on clinical chemistry platforms
- Product documentation with assigned values for more than 50 components, including genuine lipid, routine clinical chemistry analytes, enzymes, proteins, cardiac markers and drugs
- Traceable values to reference methods for many of the components
- Two clinically relevant levels – each level available separately
- Freeze-dried material, offering long shelf life
- No preservatives or stabilizers added

Stability

- 4 years stability when stored at 2-8 °C
- After reconstitution:
 - 1 month at ≤ -20 °C
 - 7 days at 2-8 °C

Components:

ALAT	CK-MB	Magnesium
Albumin	Copper	NEFA
ALP	Creatinine	Osmolality
Amylase, pancreas	CRP	Phospholipids
Amylase, total	Digoxin	Phosphorus
Apolipoprotein A1	Ferritin	Potassium
Apolipoprotein B	GGT	Protein, total
ASAT	GLDH	Sodium
Bile Acid	Glucose	Theophylline
Bilirubin, direct	HBDH	Transferrin
Bilirubin, total	IgA	Triglycerides
Calcium	IgG	TSH
Chloride	IgM	UIBC
Cholesterol, HDL	Iron	Urea
Cholesterol, LDL	Lactate	Uric Acid
Cholesterol, total	LDH	Vitamin B12
Cholinesterase	Lipase	Zinc
CK	Lithium	

Refer to the package insert of currently available lots for specific analyte and stability claims.

Order Information:

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

Autonorm™ Human Liquid

A chemistry control ready to use



Product features

- Complete human-based control, including clinical chemistry analytes, lipids, enzymes, proteins, hormones, cardiac markers and therapeutic drugs
- Product documentation with assayed values for more than 50 components including genuine lipids, proteins (e.g. CRP, Apo A1 and Apo B) and therapeutic drugs (only added amount)
- Available in 2 clinically relevant levels, each level available separately
- Liquid - ready to use!
- No preservatives or stabilizers added

Stability

- 2 years stability when stored at $\leq -20\text{ }^{\circ}\text{C}$ (with a few exceptions)
- Opened vials:
 - 1 month at $\leq -20\text{ }^{\circ}\text{C}$
 - 14 days at $2-8\text{ }^{\circ}\text{C}$

Components:

α 1-acid-glycoprotein	Cholesterol, LDL	Magnesium
α 1-antitrypsin	Cholesterol, total	Methotrexate
α 2-macroglobulin	Cholinesterase	Osmolality
ALAT	CK	Paracetamol
Albumin	CK-MB	Phenobarbitone
ALP	Copper	Phenytoin
Amikacin	Creatinine	Phosphorus
Amylase, pancreas	CRP	Potassium
Amylase, total	Digoxin	Prealbumin
Apolipoprotein A1	Ethanol	Protein, total
Apolipoprotein B	Ferritin	Quinidine
ASAT	Gentamycine	Salicylate
ASL	GGT	Sodium
Bilirubin, direct	Glucose	Theophylline
Bilirubin, total	Haptoglobin	Tobramycin
C3c	IgA	Transferrin
C4	IgG	Triglycerides
Calcium	IgM	UIBC
Carbamazepine	Iron	Urea
Ceruloplasmin	Lactate	Uric Acid
Chloride	LDH	Valproic Acid
Cholesterol, HDL	Lipase	Vancomycin
	Lithium	Zinc

Refer to the package insert of currently available lots for specific analyte and stability claims.

Order Information:

Art. no	Product Name	Size
202615	Autonorm™ Human Liquid L-1	10 x 8 mL
202715	Autonorm™ Human Liquid L-2	10 x 8 mL

Seronorm™ Paediatric

Specially made for the newborn



Product features

- Accuracy control serum specially made for the newborn
- Human-based material with important components at clinically relevant paediatric levels
- Product documentation including analytical data with documented traceability on all components
- Freeze-dried material, offering long shelf life
- No preservatives or stabilizers added

Stability

- 4 years stability when stored at 2-8 °C
- After reconstitution:
 - 1 month at ≤ -20 °C
 - 7 days at 2-8 °C

Components:

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

Refer to the package insert of currently available lots for specific analyte and stability claims.

Order Information:

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

Seronorm™ Urine



Product features

- Human-based urine control with stable creatinine
- Product documentation with assayed values for the most frequently used instruments on the market
- Two clinically relevant levels – each level available separately
- Liquid – ready to use!
- Good stability in opened vials

Stability

- 2 years stability when stored at 2-8 °C
- Opened vials:
 - 1 month at 2-8 °C

Components:

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

Refer to the package insert of currently available lots for specific analyte and stability claims.

Order Information:

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

Seronorm™



Product features

- Animal-based accuracy control serum for clinical chemistry
- Product documentation with analytical data for 39 of the most important components in clinical chemistry
- Independent and traceable values
- Most of the component analytical values are targeted at normal levels
- Freeze-dried material, offering long shelf life
- No preservatives or stabilizers added

Stability

- 4 years stability when stored at 2-8 °C
- After reconstitution:
 - 1 month at ≤ -20 °C
 - 7 days at 2-8 °C

Order Information:

Art. no	Product Name	Size
100105	Seronorm™	10 x 5 mL

Components:

ALAT	Glucose
Albumin	HBDH
ALP	Iron
Amylase, pancreas	Lactate
Amylase, total	LDH
ASAT	Lipase
Bicarbonate	Lithium
Bile Acid	Magnesium
Bilirubin, direct	Osmolality
Bilirubin, total	Phenylalanin
Calcium	Phosphorus
Chloride	Potassium
Cholesterol, HDL	Protein, total
Cholesterol, total	Sodium
Cholinesterase	Triglycerides
CK	UIBC
Copper	Urea
Creatinine	Uric Acid
GGT	Zinc
GLDH	

Refer to the package insert of currently available lots for specific analyte and stability claims.

Pathonorm™



Product features

- Animal-based accuracy control serum for clinical chemistry
- Product documentation with analytical data for 39 of the most important components in clinical chemistry
- Independent and traceable values
- Available in 2 clinically relevant levels, both levels available separately
- Freeze-dried material, offering long shelf life
- No preservatives or stabilizers added

Stability

- 4 years stability when stored at 2-8 °C
- After reconstitution:
 - 1 month at ≤ -20 °C
 - 7 days at 2-8 °C

Order Information:

Art. no	Product Name	Size
100705	Pathonorm™ H	10 x 5 mL
100805	Pathonorm™ L	10 x 5 mL

Components:

ALAT	Glucose
Albumin	HBDH
ALP	Iron
Amylase, pancreas	Lactate
Amylase, total	LDH
ASAT	Lipase
Bicarbonate	Lithium (Only H)
Bile Acid	Magnesium
Bilirubin, direct	Osmolality
Bilirubin, total	Phenylalanin (Only H)
Calcium	Phosphorus
Chloride	Potassium
Cholesterol, HDL	Protein, total
Cholesterol, total	Sodium
Cholinesterase	Triglycerides
CK	UIBC
Copper	Urea
Creatinine	Uric Acid
GGT	Zinc
GLDH	

Refer to the package insert of currently available lots for specific analyte and stability claims.

Seronorm™ Lipid



Product features

- Animal-based accuracy control serum for lipid analyses
- Most of the analytical values for components are on the borderline between normal and pathologically high level
- Freeze-dried material, offering long shelf life

Stability

- 4 years stability when stored at 2-8 °C
- After reconstitution:
 - 1 month at ≤ -20 °C
 - 7 days at 2-8 °C

Components:

Bile Acid
 Cholesterol, HDL
 Cholesterol, LDL
 Cholesterol, total
 NEFA
 Phospholipids
 Triglycerides

Refer to the package insert of currently available lots for specific analyte and stability claims.

Order Information:

Art. no	Product Name	Size
100205	Seronorm™ Lipid	12 x 3 mL

Autonorm™



Product features

- Animal-based quality control covering the most important components in the clinical chemistry laboratory
- Product documentation with assayed values list for about 30 components
- Component levels mainly in the normal range
- Pharmaca-free
- Freeze-dried material, offering long shelf life
- No preservatives or stabilizers added

Stability

- 4 years stability when stored at 2-8 °C
- After reconstitution (with a few exceptions):
 - 1 month at ≤ -20 °C
 - 7 days at 2-8 °C

Order Information:

Art. no	Product Name	Size
100005	Autonorm™	6 x 10 mL

Components:

ALAT	GLDH
Albumin	Glucose
ALP	Iron
Amylase, total	Lactate
ASAT	LDH
Bilirubin, direct	Lipase
Bilirubin, total	Lithium
Calcium	Magnesium
Chloride	Phosphorus
Cholesterol, HDL	Potassium
Cholesterol, total	Protein, total
Cholinesterase	Sodium
CK	Triglycerides
CK-MB	UIBC
Copper	Urea
Creatinine	Uric Acid
GGT	

Refer to the package insert of currently available lots for specific analyte and stability claims.

Seronorm™ HbA1c Liquid



Product features

- Human-based user-friendly diabetes control
- Product documentation with assayed values for immunological, HPLC and Point of Care (PoC) methods
- Two clinically relevant levels – each available separately
- Liquid – ready to use!
- Good stability in opened vials

Stability

- 2 years stability when stored at $\leq -20\text{ °C}$
- Opened vials:
 - 28 days at 2-8 °C

Components:

HbA1c

Refer to the package insert of currently available lots for specific analyte and stability claims.

Order Information:

Art. no	Product Name	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



Product features

- Quality control for Point of Care (PoC) combining Hemoglobin and Glucose in one control
- Two clinically relevant levels – each level available separately
- Liquid – ready to use!
- Good stability in opened vials

Stability

- 3 years stability when stored at 2-8 °C
- Opened vials:
 - 28 days at 2-8 °C

Components:

Glucose
Hemoglobin

Refer to the package insert of currently available lots for specific analyte and stability claims.

Order Information:

Art. no	Product Name	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



Product features

- The one accuracy control for routine analyses on toxicology and environmental pollution in serum, including trace elements and heavy metals
- Product documentation with analytical values for more than 60 elements
- Independent analytical values traceable to international reference materials
- Two clinically relevant levels – each level available separately
- Freeze-dried material, excellent shelf life
- No preservatives or stabilizers added

Stability

- 7 years stability when stored at 2-8 °C
- After reconstitution:
 - 1 month at ≤ -20 °C
 - 7 days at 2-8 °C

The clinically most relevant components:

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

Refer to component index (page 26) for a total of more than 60 elements.

Refer to the package insert of currently available lots for specific analyte and stability claims.

Order Information:

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

Seronorm™

Trace Elements Whole Blood



Product features

- The one accuracy control for routine analyses on toxicology and environmental pollution in whole blood, including trace elements and heavy metals
- Product documentation with analytical values for more than 60 elements
- Independent analytical values traceable to international reference materials
- Three clinically relevant levels – each level available separately
- Freeze-dried material, excellent shelf life
- No preservatives or stabilizers added

Stability

- 5 years stability when stored at 2-8 °C
- After reconstitution:
 - 1 month at ≤ -20 °C
 - 7 days at 2-8 °C

The clinically most relevant components:

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

Refer to component index (page 26) for a total of more than 60 elements.

Refer to the package insert of currently available lots for specific analyte and stability claims.

Order Information:

Art. no	Product Name	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

Seronorm™

Trace Elements Urine



Product features

- The one accuracy control for routine analyses on toxicology and environmental pollution in urine, including trace elements and heavy metals
- Product documentation with analytical values for more than 70 elements and toxic organic compounds
- Independent analytical values traceable to international reference materials
- Two clinically relevant levels – each level available separately
- Freeze-dried material, excellent shelf life
- No preservatives or stabilizers added

Stability

- 7 years stability when stored at 2-8 °C
- After reconstitution:
 - 1 month at ≤ -20 °C
 - 7 days at 2-8 °C

The clinically most relevant components:

Aluminium	Nickel
Antimony	Selenium
Arsenic	Tellurium
Beryllium	Thallium
Bismuth	Tin
Cadmium	Vanadium
Chromium	Zinc
Cobalt	1-hydroxypyrene*
Copper	Formic acid*
Fluoride*	Phenol*
Iodine	Mandelic acid
Lead	Tetrachloroethylene*
Manganese	Trichloroacetic acid*
Mercury	

Refer to component index (page 26) for a total of more than 70 elements and toxic organic components.

Refer to the package insert of currently available lots for specific analyte and stability claims.

*Only in L-2

Order Information:

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

Seronorm™ Pharmaca

“A Pharmacy in a bottle”...



Product features

- Pharmaca control containing 30 therapeutic drugs including antibiotics, antiepileptics, antiasthmatics, digitalis and psychotherapeutic drugs
- Product documentation with added amounts given on all components
- Two clinically relevant levels – each level available separately
- Freeze-dried material, offering long shelf life
- No preservatives or stabilizers added

Stability

- 4 years stability when stored at 2-8 °C
- After reconstitution:
 - 1 month at ≤ -20 °C
 - 7 days at 2-8 °C

Components:

Amikacin	Lidocaine
Caffeine	Lithium
Carbamazepine	Methotrexate
Chloramphenicol	Nortriptyline
Clonazepam	Paracetamol
Cyclosporine	Phenobarbitone
Desipramine	Phenytoin
Diazepam	Primidone
Digoxin	Procainamide
Disopyramide	Quinidine
Ethosuximide	Salicylate
Flecainide	Theophylline
Gentamycine	Tobramycin
Haloperidol	Valproic acid
Imipramine	Vancomycin

Refer to the package insert of currently available lots for specific analyte and stability claims.

Order Information:

Art. no	Product Name	Size
101405	Seronorm™ Pharmaca L-1	10 x 5 mL
101505	Seronorm™ Pharmaca L-2	10 x 5 mL

Component index

A – B

See page number	Seronorm™ Immunoassay	Seronorm™ Immunoassay Liq low	Seronorm™ Cardiac Acute Liq	Seronorm™ Immunoprotein	Seronorm™ CRP Liquid	Seronorm™ Human	Autonorm™ Human Liquid	Seronorm™ Paediatric	Seronorm™ Urine	Seronorm™	Pathonorm™	Seronorm™ Lipid	Autonorm™	Seronorm™ HbA1c Liquid	Seronorm™ Hb/Glucose	Seronorm™ Trace Elements Serum	Seronorm™ Trace Elements Whole Blood	Seronorm™ Trace Elements Urine	Seronorm™ Pharmaca
	8	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
17-α-OH-Progesterone	0																		
1-Hydroxypyrene																			▲
25(OH) Vitamin D	0	0																	
α1-acid-glycoprotein				0			0												
α1-antitrypsin				0			0												
α2-macroglobulin				0			0												
AFP	0																		
ALAT						0	0			0	0		0						
Albumin				0		0	0			0	0		0						
Albumin/Creatinine quota									0										
Aldosterone	0																		
ALP						0	0	0		0	0		0						
Aluminium																0	0	0	
AMH	0																		
Amikasin							0												0
Amylase, pancreas						0	0			0	0								
Amylase, total						0	0		0	0	0		0						
Androstendione	0																		
Anti-CCP				0															
Antimony																0	0	0	
Anti-Tg	0																		
Anti-TPO	0																		
Apolipoprotein A1				0		0	0												
Apolipoprotein B						0	0												
Arsenic																0	0	0	
ASAT						0	0			0	0		0						
ASL				0			0												
β2-microglobulin	0			0															
β-hCG, total	0		0																
Barium																0	0	0	
Beryllium																0	0	0	
Bicarbonate										0	0								
Bile Acid						0				0	0	0							
Bilirubin, direct						0	0	0		0	0		0						
Bilirubin, indirect								0											
Bilirubin, total						0	0	0		0	0		0						
Bismuth																0	0	0	
BNP			0																
Boron																0	0	0	
Bromine																0	0	0	

0 Analyte present ■ Only present in L-1 ▲ Only present in L-2 ▼ Only present in Pathonorm™ H

The above index is updated as of August 2014.

Component index
C - D

See page number	Seronorm™ Immunoassay	Seronorm™ Immunoassay Liq low	Seronorm™ Cardiac Acute Liq	Seronorm™ Immunoprotein	Seronorm™ CRP Liquid	Seronorm™ Human	Autonorm™ Human Liquid	Seronorm™ Paediatric	Seronorm™ Urine	Seronorm™	Pathonorm™	Seronorm™ Lipid	Autonorm™	Seronorm™ HbA1c Liquid	Seronorm™ Hb/Glucose	Seronorm™ Trace Elements Serum	Seronorm™ Trace Elements Whole Blood	Seronorm™ Trace Elements Urine	Seronorm™ Pharmaca
	8	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
C3c				○			○												
C4				○			○												
CA 125	○																		
CA 15-3	○																		
CA 19-9	○																		
Cadmium																○	○	○	
Caffeine																			○
Calcium						○	○	○	○	○	○		○			○	○	○	
Carbamazepine							○												○
CEA	○																		
Cerium																○	○	○	
Ceruloplasmin				○			○												
Cesium																○	○	○	
Chloramphenicol																			○
Chloride						○	○	○	○	○	○		○						
Cholesterol, HDL						○	○			○	○	○	○						
Cholesterol, LDL						○	○					○							
Cholesterol, total						○	○			○	○	○	○						
Cholinesterase						○	○			○	○		○						
Chromium																○	○	○	
CK			○			○	○			○	○		○						
CK-MB	○		○			○	○						○						
Clonazepam																			○
Cobalt																○	○	○	
Copper						○	○			○	○		○			○	○	○	
Cortisol	○	○							○										
Cortisol, free									○										
C-peptide	○																		
Creatinine						○	○		○	○	○		○						
CRP			○	○	○	○	○												
Cyclosporine																			○
Cystatin C				○															
Desipramine																			○
DHEA-Sulfate	○																		
Diazepam																			○
D-dimer			○																
Digitoxin				○															
Digoxin	○		○			○	○												○
Disopyramide																			○
Dysprosium																○	○	○	

○ Analyte present ■ Only present in L-1 ▲ Only present in L-2 ▼ Only present in Pathonorm™ H

The above index is updated as of August 2014.

Component index

E - I

See page number	Seronorm™ Immunoassay	Seronorm™ Immunoassay Liq low	Seronorm™ Cardiac Acute Liq	Seronorm™ Immunoprotein	Seronorm™ CRP Liquid	Seronorm™ Human	Autonorm™ Human Liquid	Seronorm™ Paediatric	Seronorm™ Urine	Seronorm™	Pathonorm™	Seronorm™ Lipid	Autonorm™	Seronorm™ HbA1c Liquid	Seronorm™ Hb/Glucose	Seronorm™ Trace Elements Serum	Seronorm™ Trace Elements Whole Blood	Seronorm™ Trace Elements Urine	Seronorm™ Pharmaca
	8	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Electrophoresis				■															
EPO	o																		
Erbium																	o	o	o
Estradiol	o																		
Ethanol							o												
Ethosuximide																			o
Europium																	o	o	
Ferritin	o	o		o		o	o												
Flecainide																			o
Fluoride																o	o	▲	
Folate	o																		
Formic acid																		▲	
FSH	o																		
Gadolinium																o	o	o	
Gallium																o	o	o	
Gentamycine							o												o
GGT						o	o			o	o		o						
GLDH						o				o	o		o						
Glucose						o	o	o	o	o	o		o		o				
Gold																	o	o	
Hafnium																o	o	o	
Haloperidol																			o
Haptoglobin				o			o												
HbA1c														o					
HBDH						o				o	o								
hCG, total	o																		
Hemoglobin															o				
hGH	o																		
Holmium																o	o	o	
Homocysteine	o		o																
IgA				o		o	o												
IgE	o	o		o															
IGF1	o																		
IgG				o		o	o												
IgM				o		o	o												
Imipramine																			o
Insulin	o																		
Iodine																o	o	o	
Iridium																o	o	o	
Iron						o	o			o	o		o		o	o			

o Analyte present ■ Only present in L-1 ▲ Only present in L-2 ▼ Only present in Pathonorm™ H

The above index is updated as of August 2014.

Component index
L – Prea

See page number	Seronorm™ Immunoassay	Seronorm™ Immunoassay Liq low	Seronorm™ Cardiac Acute Liq	Seronorm™ Immunoprotein	Seronorm™ CRP Liquid	Seronorm™ Human	Autonorm™ Human Liquid	Seronorm™ Paediatric	Seronorm™ Urine	Seronorm™	Pathonorm™	Seronorm™ Lipid	Autonorm™	Seronorm™ HbA1c Liquid	Seronorm™ Hb/Glucose	Seronorm™ Trace Elements Serum	Seronorm™ Trace Elements Whole Blood	Seronorm™ Trace Elements Urine	Seronorm™ Pharmaca
	8	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Lactate						o	o			o	o		o						
Lanthanum																o	o	o	
LDH						o	o			o	o		o						
Lead																o	o	o	
LH	o																		
Lidocaine																			o
Lipase						o	o			o	o		o						
Lithium						o	o			o	▼		o			o	o	o	o
Lutetium																o	o	o	
Magnesium						o	o	o	o	o	o		o			o	o	o	
Mandelic acid																		▲	
Manganese																o	o	o	
Mercury																o	o	o	
Methotrexate						o													o
Methylmalonic acid	o																		
Microalbumin									o										
Molybdenum																o	o	o	
Myoglobin	o		o	o															
NEFA						o						o							
Neodymium																o	o	o	
Nickel																o	o	o	
Niobium																o	o	o	
Nortriptyline																			o
NT-proBNP	o		o																
Osmolality						o	o		o	o	o								
Ostase	o																		
Paracetamol							o												o
pH									o										
Phenobarbitone							o												o
Phenol																		▲	
Phenylalanin								o		o	▼								
Phenytoin							o												o
Phospholipids						o						o							
Phosphorus						o	o	o	o	o	o		o			o	o	o	
Platinum																o	o	o	
Potassium						o	o	o	o	o	o		o			o	o	o	
Praseodymium																o	o	o	
Prealbumin				o		o													

o Analyte present ■ Only present in L-1 ▲ Only present in L-2 ▼ Only present in Pathonorm™ H

The above index is updated as of August 2014.

Component index Preg - Te

See page number	Seronorm™ Immunoassay	Seronorm™ Immunoassay Liq low	Seronorm™ Cardiac Acute Liq	Seronorm™ Immunoprotein	Seronorm™ CRP Liquid	Seronorm™ Human	Autonorm™ Human Liquid	Seronorm™ Paediatric	Seronorm™ Urine	Seronorm™	Pathonorm™	Seronorm™ Lipid	Autonorm™	Seronorm™ HbA1c Liquid	Seronorm™ Hb/Glucose	Seronorm™ Trace Elements Serum	Seronorm™ Trace Elements Whole Blood	Seronorm™ Trace Elements Urine	Seronorm™ Pharmaca
	8	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Pregnancy									o										
Primidone																			o
Procainamide																			o
Progesterone	o																		
Procalcitonin			o																
Prolactin	o																		
Prostatic acid phosphatase	o																		
Protein, total				o		o	o		o	o	o		o						
PSA, free	o																		
PSA, total	o	o																	
PTH, intact	o																		
Quinidine							o												o
RF				o															
Rhenium																o	o	o	
Rhodium																o			
Rubidium																o	o	o	
Ruthenium																o			
S-100β			o																
Salicylate							o												o
Samarium																o	o	o	
Scandium																o			
Selenium																o	o	o	
SHBG	o																		
Silicon																o	o	o	
Silver																o	o	o	
Sodium						o	o	o	o	o	o		o			o	o	o	
Specific gravity									o										
Strontium																o	o	o	
Sulfur																o	o	o	
T3, free	o																		
T3, total	o																		
T4, free	o	o																	
T4, total	o	o																	
Tantalum																o	o	o	
TBG	o																		
Tellurium																o	o		
Terbium																o	o	o	
Testosterone	o																		
Tetrachloroethylene																		▲	

o Analyte present ■ Only present in L-1 ▲ Only present in L-2 ▼ Only present in Pathonorm™ H

The above index is updated as of August 2014.

Component index Th - Z

See page number	Seronorm™ Immunoassay	Seronorm™ Immunoassay Liq low	Seronorm™ Cardiac Acute Liq	Seronorm™ Immunoprotein	Seronorm™ CRP Liquid	Seronorm™ Human	Autonorm™ Human Liquid	Seronorm™ Paediatric	Seronorm™ Urine	Seronorm™	Pathonorm™	Seronorm™ Lipid	Autonorm™	Seronorm™ HbA1c Liquid	Seronorm™ Hb/Glucose	Seronorm™ Trace Elements Serum	Seronorm™ Trace Elements Whole Blood	Seronorm™ Trace Elements Urine	Seronorm™ Pharmaca
	8	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Thallium																○	○	○	
Theophylline	○					○	○												○
Thorium																○	○	○	
Thulium																○	○	○	
Thyreoglobulin	○																		
Tin																○	○	○	
Titanium																○	○	○	
Tobramycin							○												○
Transferrin				○		○	○												
Trichloroacetic acid																		▲	
Triglycerides						○	○			○	○	○	○						
Troponin I	○		○																
Troponin T	○		○																
TSH	○	○				○													
Tungsten																○	○	○	
UIBC						○	○			○	○		○						
Uranium																○	○	○	
Urea						○	○		○	○	○		○						
Uric Acid						○	○		○	○	○		○						
Valproic Acid							○												○
Vanadium																○	○	○	
Vancomycin							○												○
Vitamin B12	○	○				○													
Ytterbium																○	○	○	
Yttrium																○	○	○	
Zinc						○	○			○	○					○	○	○	
Zirconium																○	○	○	

○ Analyte present ■ Only present in L-1 ▲ Only present in L-2 ▼ Only present in Pathonorm™ H

The above index is updated as of August 2014.

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