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# LABQUALITY



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## **Service information**

### Labquality - EQAS

Labquality is an independent Finnish external quality assessment provider. Labquality has more than 50 years of experience in helping clinical laboratories and POCT sites develop and maintain their performance. Labquality's EQA schemes are internationally recognized high quality programs. The EQA programs have a clinical scope with an educational touch. Part of the EQA production is outsourced to expert laboratories and national partners.

### **Integrated EQA service (EQA3)**

Labquality is the first EQA provider that has integrated pre-analytical, analytical and post-analytical phases to its EQA programs. Advanced and traditional EQA schemes have been designed to fully support the total quality management system of the participating laboratories and fulfill ISO 15189 requirements concerning the extra-analytical phases. In addition to the samples, the integrated schemes include pre- and/or post-analytical questionnaires concerning the scope of the scheme.

### **Quality management**

Labquality's management system is certified according to ISO 9001 (DQS) and the main EQA schemes are accredited according to ISO 17043 (PT02/FINAS). The scope of accreditation is available on the FINAS website: **www.finas.fi**, and the accreditation status of the EQA schemes is available on our website: **www.labquality.com**. The list of accredited schemes will be provided upon request.

### **EQA** service availability

Labquality has customers in over 60 countries in Europe, Asia, America and North Africa. Service is localized by 40 national partners. All digital schemes, including pre-analytical schemes and diagnostic schemes for anatomic pathology, are available globally. With only a few exceptions all schemes are globally available through national partner. For direct customers, the program selection is limited to the schemes with stabile and non-hazardous sample materials.

### **Enrolment and prices**

Labquality has annual programs and pricing. Participants shall place their orders for the following year before the end of November to ensure their participation in all needed EQA rounds. Enrolment is possible during the calendar year, but only part of the EQA rounds may be available. To place an order, please contact our national partner in your country or Labquality's customer service at info@ labquality.fi.

### **Distributions**

Labquality's specimen logistics system is accepted and continuously audited as part of accreditation according to the ISO 17043 (PT02/FINAS) standard. Specimens are shipped according to the annual schedule. Labquality retains the right to make changes in the schedule.

### LabScala EQA portal

Partners and participants are able to handle the whole EQA process from orders to reports through a modern web based software, LabScala. The EQA process is designed to go along with the laboratory process from pre-analytics to post-analytics. Easy availability and user-friendly interface guarantee an advanced experience.

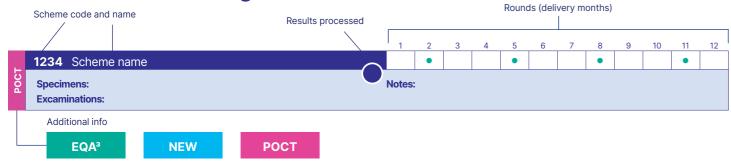
### Certificate

A certificate of participation will be provided upon request at the end of the calendar year. The certificate refers to EQA reports to evaluate the performance of the participant.

### **Customer service**

Please contact Labquality's international partners (listed on our website: www.labquality.com) or our customer service: info@ labquality.fi.

### How to use the catalogue



**Results processed:** The number shows how many results from different analyzers or tests within the same laboratory are allowed depending on scheme, when the sample volume is sufficient.

# **Updates for 2024**

### New schemes and products

- 2707 Maternal serum screening
- 8205 Pipette control
- 5254 Mycoplasma genitalium, drug resistance, nucleic acid detection
- 5253 Helicobacter pylori, nucleic acid detection
- 5088 HIV, antibodies and antigen detection, extra set of samples
- 5231 Mycobacterium tuberculosis, drug resistance, nucleic acid detection, extra set of samples
- 4389 D-dimer, extra set of samples
- 5683 Mpox (Monkeypox virus), nucleic acid detection
- 8850 DNA sequencing (EQUALIS)
- 8851 Quantification of ABO antibodies (EQUALIS)
- 8852 Titration of erythrocyte antibodies (EQUALIS)
- 8853 Iohexol (EQUALIS
- 8854 Phosphatidyl ethanol in blood (EQUALIS)
- 8855 Alcohol biomarkers in urine (EQUALIS)

### Changes in distribution schedule

- Fungal infections, nucleic acid detection (April and September)
- 5562 Multiple respiratory virus, nucleic acid detection (4 rounds/year)
- HSV1&2/VZV/Treponema pallidum, nucleic acid detection (April and October)

### Discontinued schemes and products

- 4151 Reticulocyte count, automated: Cell-Dyn 4000, Saphire
- 4152 Reticulocyte count, automated: Coulter Gens, LH750
- 4155 Reticulocyte count, automated: Cell Dyn 3200, 3500, 3700, Ruby
- 4235 Leucocyte differential count, 5-part, automated: Coulter ACT5-diff

### Changes in scope, specimens or parameters

- Faecal occult blood, quantitative: New artificial stool sample including human Hb (rounds 2 and 4).
- Blood culture (incl. sepsis multiplex methods): 3 samples/round.
- 5101 Blood culture, screening (incl. sepsis multiplex methods): 3 samples/round
- 5670 Influenza virus A+B and RS virus, nucleic acid detection: 3 samples/round.
- 5556 HSV1&2/VZV/Treponema pallidum, nucleic acid detection: 3 samples/round.
- 5300 Respiratory infections multiplex, nucleic acid detection. Examinations: Bocavirus added.
- 5420 Toxoplasma, antibodies. Examinations: IgA antibodies removed.
- 5190 Faecal culture. Examinations: Antimicrobial susceptibility (rounds 2 and 4) added.
- 5930 Autoimmune liver disease and gastric parietal cell antibodies. Examinations: LKMAb removed.

### Planned pilot schemes

Pilot studies are EQA schemes under development. Information about pilot studies and schedules are updated on our website: https://www.labquality.com/external-quality-assessment/new-schemes/

Service information

# Clinical chemistry

The clinical chemistry portfolio covers areas of allergology, basic chemistry, cardiac markers, diabetes analysis, endocrinology, special chemistry, specific proteins, tumour markers and urine analysis. For routine chemistry needs, schemes with both one and two level samples enabling assessment of more than 50 analytes are available. A wide selection of schemes specifically tailored for POCT devices are also available, including e.g. those for drug abuse screening, glucose meters and troponin detection.

### Clinical chemistry » Allergology

### 2675 Allergen component (UK NEQAS) • Notes: Participation to all rounds required. Should be ordered Specimens: 2 liquid human serum samples for allergen component tests. **Examinations:** Allergen component test which covers recombinant allergens until the beginning of November, Limited availability. as well as the ISAC system. **2681** Allergy in vitro diagnostics (SKML) Specimens: 3 liquid human serum samples for specific IgEs with 3 allergens, Notes: Participation to all rounds required. Should be ordered until the 2 mixes and total IgE in each and some allergen components, 0.5 mL. beginning of November. All samples are distributed in February. **Examinations:** Total IgE, specific IgEs, allergen mixes and allergen

### 2670 Allergy in vitro diagnostics (UK NEQAS)

Specimens: 2 liquid human serum samples for specific IqEs with 4 allergens in each specimen, 0.5 mL each and 1 serum specimen for total IgE, 0.5 mL. **Examinations:** Total IgE and specific IgEs.

Notes: Participation to all rounds required. Should be ordered until the beginning of November, Limited availability.

### 2680 Eosinophil cationic protein

Specimens: 1 lyophilized human serum sample, 0.3 mL. **Examinations:** ECP.

Notes: Results are processed in connection with total IgE results of scheme 2670.

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### 2685 Tryptase (UK NEQAS)

Specimens: 2 liquid human serum samples. **Examinations:** Tryptase.

Notes: Participation to all rounds required. Should be ordered until the beginning of November. Limited availability.

### Clinical chemistry » Basic chemistry

### 2100 Basic chemistry, POCT analyzers

Specimens: 2 human serum samples, 1 mL. **Examinations:** Alanine aminotransferase, albumin, alkaline phosphatase, amylase (total and pancreatic), aspartate aminotransferase, calcium, chloride. HDL cholesterol, cholesterol, creatinekinase, creatinine, gamma glutamyltransferase, glucose, lactate dehydrogenase, magnesium, phosphorus, potassium, sodium, total protein, triglycerides, urea, uric acid. Notes: For clinical laboratories and POCT sites. Only for dry chemistry analyzers. If you are not sure whether your device is a POCT meter or an analyzer, please contact our customer service.

### **2730** Erythrocyte sedimentation rate

Specimens: 1 artificial blood cell suspension, ~ 4 mL Examinations: ESR.

Notes: Not suitable for Algor iSed.

### 2731 Erythrocyte sedimentation rate: Alifax-analyzers; Greiner tube 3 Specimens: 3 test tubes containing synthetic latex solution, 3 mL. **Examinations: ESR** 2732 Erythrocyte sedimentation rate: Alifax-analyzers; Sarstedt tube 3 Specimens: 3 test tubes containing synthetic latex solution, 3 mL. **Examinations: FSR** 2750 Faecal occult blood, qualitative **Specimens:** 2 preparations that include human haemoglobin, 0.5 mL. Notes: For clinical laboratories and POCT sites **Examinations:** Qualitative detection of Hb in human faeces. 2749 Faecal occult blood, quantitative Specimens: 2 liquid samples (March, Sept) and 2 artificial stool samples Notes: The liquid samples assess the analytical process only, the artificial (June, Dec) including human haemoglobin. stool samples assess both the preanalytical and analytical processes. For **Examinations:** Quantitative determination of Hb in human faeces (iFOB/FIT). clinical laboratories and POCT sites. 2114 Haemoglobin, 1-level, POCT Specimens: 1 bovine sample, 1 mL. Notes: Only for POCT devices. Not suitable for Diaspect. CompoLab. Hemocue 301 or Hemocue 801. **Examinations:** Haemoglobin. **2115** Haemoglobin, 1-level HemoCue 801 and HemoCue 301

Specimens: 1 bovine sample, 1 mL. Examinations: Haemoglobin.

Notes: Only for HemoCue 801 and HemoCue 301.

### 2113 Haemoglobin, 3-level samples, cell counters and analyzers

**Specimens:** 3 human whole blood control samples, 1 mL (low, medium and high concentration).

**Examinations:** Haemoglobin linearity with three samples. Reference values will be provided in the summary report.

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**Notes:** For cell counters and analyzers.

### 2112 Haemoglobin, 3-level samples, POCT

Specimens: 3 bovine or human samples, 1 mL (low, medium and high concentration)

**Examinations:** Haemoglobin linearity with three samples. Notes: Only for POCT devices. Not suitable for Diaspect.

### Clinical chemistry » Cardiac markers

### **1541** CRP, low concentration Specimens: 1 Human serum sample, 1 mL. Notes: CRP, low concentration sample is included in product 2541

**Examinations:** CRP. Myocardiac markers and CRP.

### 2540 Myocardial markers

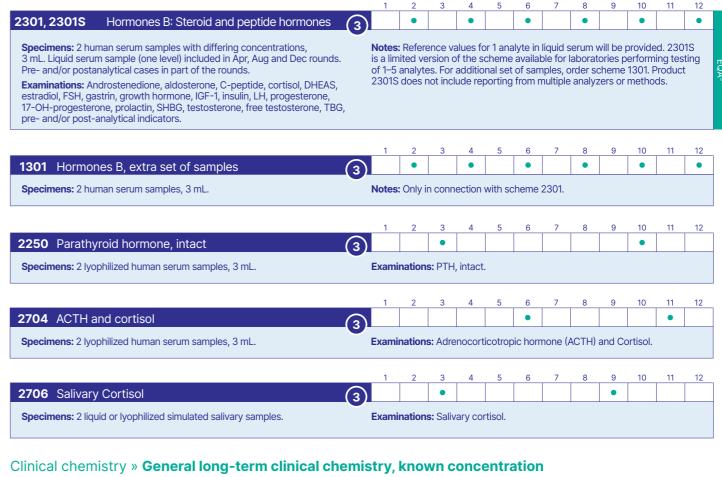
Specimens: 2 Human serum samples, 1 mL. **Examinations:** CK-MB mass, myoglobin, quantitative troponin I, quantitative troponin T. Not for CKMB activity!

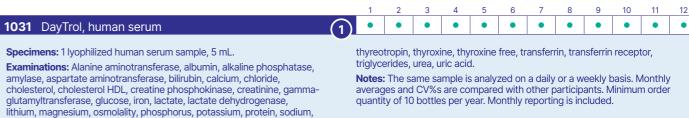
Notes: Suits clinical laboratory analyzers. See also scheme 2530 Troponin I and T, detection for POCT. If you are not sure whether your device is a POCT meter or an analyzer, please contact our customer service.

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Clinical chemistry Clinical chemistry

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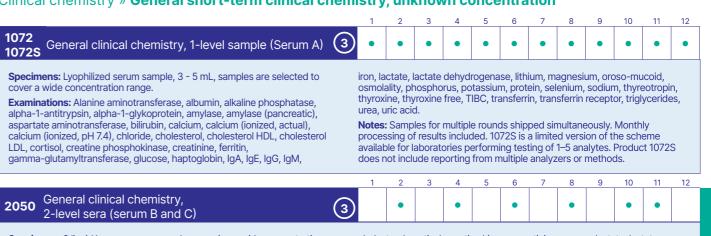


### Clinical chemistry » General short-term clinical chemistry, unknown concentration

range, 3-5 mL.

aminotransferase, bilirubin, ferritin, phosphate, glucose, glutamyltransferase, haptoglobin, IgA, IgE, IgG, IgM, potassium, calcium, ionized calcium, ionized

calcium pH corrected (7.4), chloride, cholesterol, HDL cholesterol, LDL

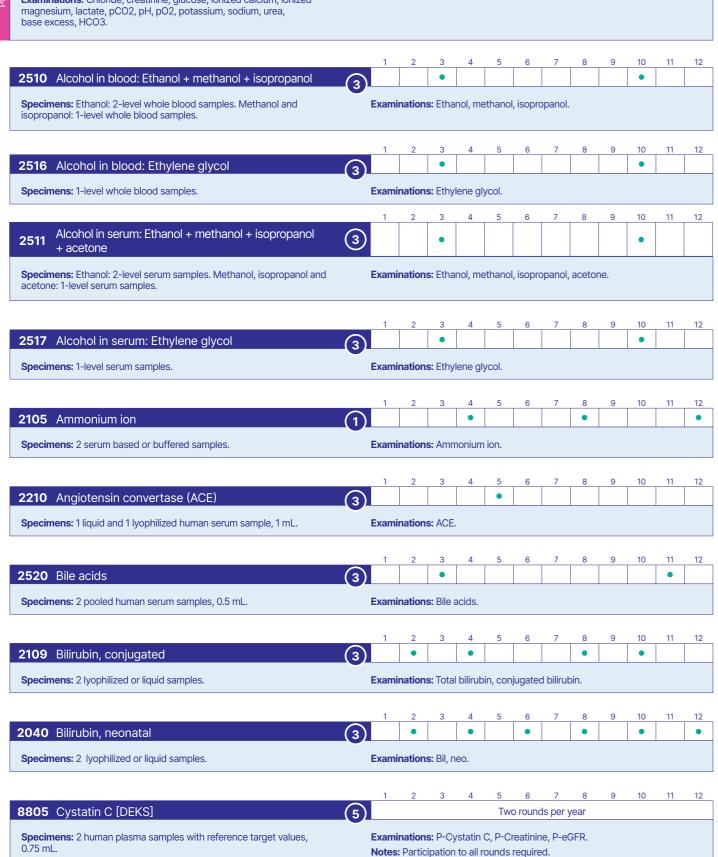


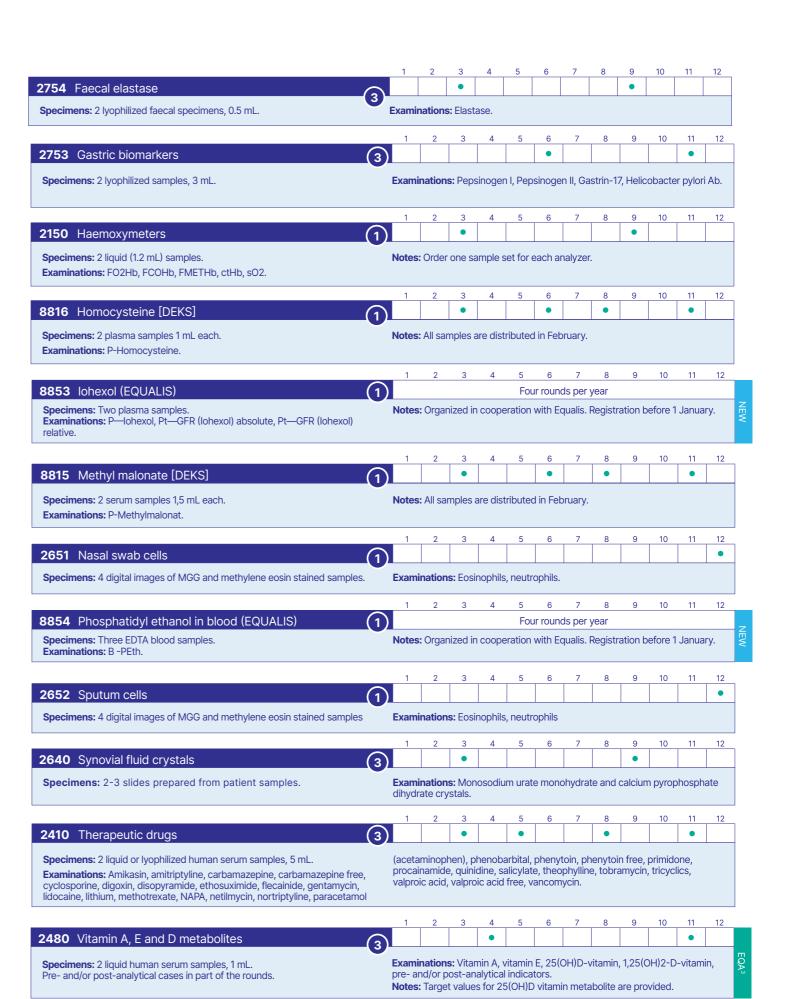
**Specimens:** 2 liquid human serum samples covering a wide concentration cholesterol, cortisol, creatine kinase, creatinine, copper, lactate, lactate dehydrogenase, lipase, lithium, magnesium, sodium, osmolality, protein, iron binding capacity, iron, selenium, zinc, transferrin, transferrin receptor, **Examinations:** Alanine aminotransferase, albumin, alfa-1-antitrypcine, alfatriglycerides, tri-iodio-thyronine, thyrotropin, tyroxine, free tyroxine, urea, uric 1-glycoprotein, alkaline phosphatase, amylase, pancreas amylase, aspartate

**Notes:** Comparison of two different concentration ranges simultaneously.

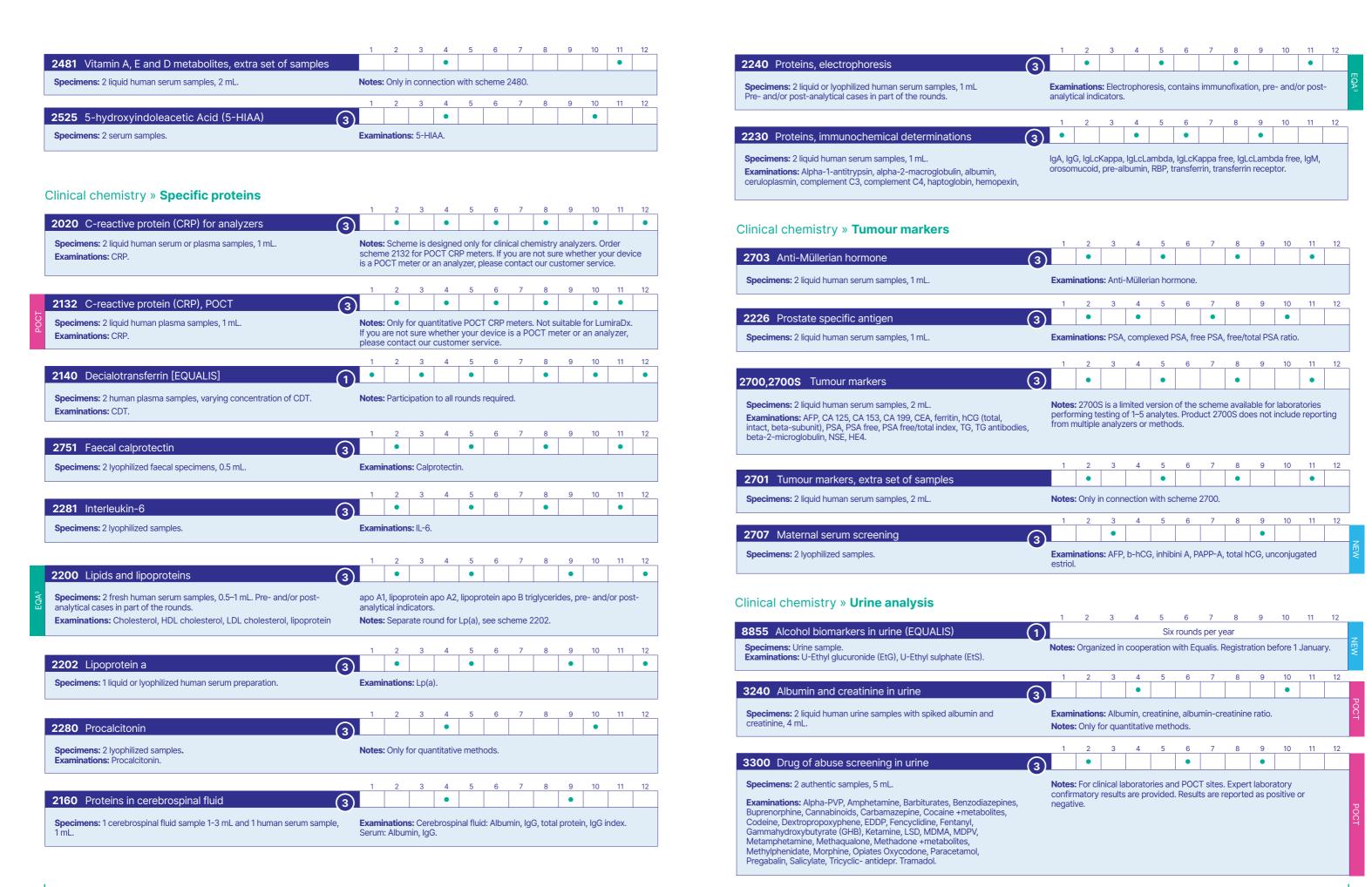
Reference method values available occasionally for some of the analytes.

### Clinical chemistry » Special chemistry **2610** Acid-base status and electrolytes Specimens: 3 buffered artificial samples, 2.5 mL. Notes: Order one sample set for each analyzer. For clinical laboratories and POCT sites. **Examinations:** Chloride, creatinine, glucose, ionized calcium, ionized magnesium, lactate, pCO2, pH, pO2, potassium, sodium, urea, base excess, HCO3. 2510 Alcohol in blood: Ethanol + methanol + isopropanol **Specimens:** Ethanol: 2-level whole blood samples. Methanol and Examinations: Ethanol, methanol, isopropanol. isopropanol: 1-level whole blood samples. 2516 Alcohol in blood: Ethylene glycol Examinations: Ethylene glycol. Specimens: 1-level whole blood samples. Alcohol in serum: Ethanol + methanol + isopropanol + acetone **Specimens:** Ethanol: 2-level serum samples. Methanol, isopropanol and Examinations: Ethanol, methanol, isopropanol, acetone. acetone: 1-level serum samples. **2517** Alcohol in serum: Ethylene glycol Examinations: Ethylene glycol. Specimens: 1-level serum samples. • 2105 Ammonium ion Specimens: 2 serum based or buffered samples. **Examinations:** Ammonium ion 2210 Angiotensin convertase (ACE) Specimens: 1 liquid and 1 lyophilized human serum sample, 1 mL. **Examinations:** ACE. 2520 Bile acids (3) Specimens: 2 pooled human serum samples, 0.5 mL. Examinations: Bile acids.





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# Clinical chemistry and haematology

### Clinical chemistry and haematology » Percentiler and flagger programs

### **3501** Flagger program (Noklus)

Specimens: The percentage of patient results outside the reference limits. Examinations: ALP, ALT, AST, bilirubin, BUN, calcium, cholesterol, chloride, creatinine, CRP, ferritin, folate, FT4, GGT, glucose, Hb, HbA1c, HDL-cholesterol, IgA, IgG, IgM, IgA, K, LDH, MCV, magnesium, Na, phosphate, PLT, protein, PSA, PTH, RBC, triglycerides, TSH, urea, uric acid, vitamin B12, vitamin D, WBC.

Twelve rounds per year

5 6 7 8 9 10 11 12

4 5 6 7 8 9 10 11 12

**Notes:** Each participant will receive log in information giving access to the laboratories results and allowing dynamic on-line monitoring of mid-to long-term stability of performance and flagging rate. Laboratories can choose to participate in The Percentiler program only.

### 3500 Percentiler program (Noklus)

**Specimens:** Results from selected patient groups are used to calculate instrument-specific daily medians.

Examinations: ALP, ALT, AST, bilirubin, BUN, calcium, cholesterol, chloride, creatinine, CRP, ferritin, folate, FT4, GGT, glucose, Hb, HbA1c, HDL-cholesterol, IgA, IgG, IgM, IgA, K, LDH, MCV, magnesium, Na, phosphate, PLT, protein, PSA, PTH, RBC, triglycerides, TSH, urea, uric acid, vitamin B12, vitamin D. WBC.

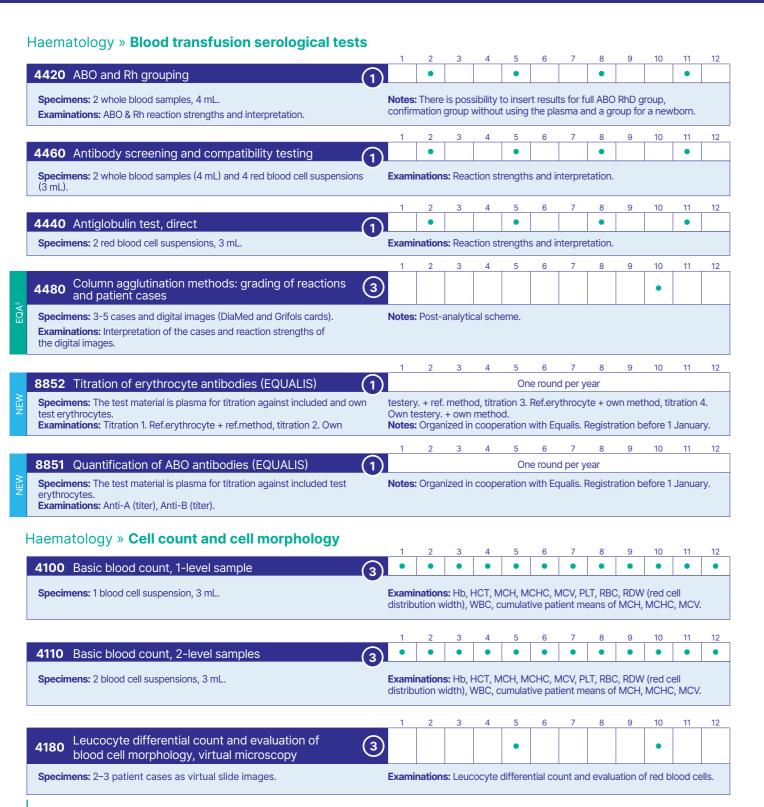
Twelve rounds per year

**Notes:** Participating laboratories calculate, and report instrument-specific medians based on patient results. The total number of patient results is also reported. Ideally, patient medians are reported daily, but less frequent reporting is also possible. Results are exported to a central database by standardized emails.

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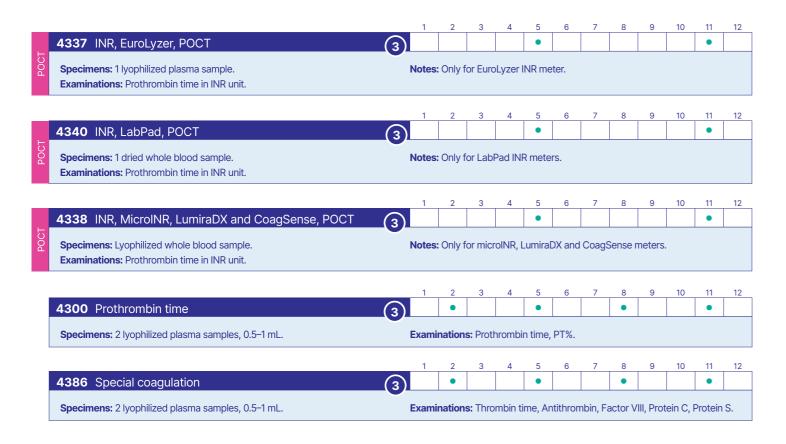
# Haematology

The haematology selection consists of schemes for blood transfusion serology, cell count and morphology as well as coagulation tests. Specialties include the Erythrocyte sedimentation rate for Alifax as well as the White blood cell count and INR schemes for POCT. Units performing blood transfusions find EQA schemes for hepatitis B and C, HIV as well as other infectious diseases under the microbiology portfolio. Schemes related to blood parasites can be found under the parasites chapter.





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### **EQA** schemes for blood banks

### **Blood transfusion serology**

- 4420 ABO and Rh grouping
- 4460 Antibody screening and compatibility testing
- 4440 Antiglobulin test, direct
- 4480 Column agglutination methods: grading of reactions and patient cases

### **Bacterial serology**

5880 Syphilis serology

### **Bacteriology**

- 5100 Blood culture
- 5101 Blood culture, screening

### Virology, serological tests

- 5650 Cytomegalovirus, antibodies
- 5092 Hepatitis A, antibodies
- 5093 Hepatitis B, s-antigen antibodies, quantitative
- 5094-5096 Hepatitis B and C, serology
- 5091 HIV, antibodies and antigen detection
- 5089 Human T-cell lymphotropic virus, antibodies
- 5660 Parvovirus B19, antibodies

### Virology, molecular tests

- 5679 Hepatitis B virus, nucleic acid detection (DNA)
- 5678 Hepatitis C virus, nucleic acid detection (RNA)
- 5680 HIV-1, nucleic acid detection (RNA)

### **EQA services for POCT sites**

Patient outcome is associated with obtaining a reliable test result regardless of where the testing is performed. To ensure high quality of care and patient safety, it is imperative that point-of-care testing (POCT) is subjected to the same quality requirements as conventional laboratory analyses.

Labquality offers a range of EQA schemes suitable for POCT sites. These services are intended for all testing units including home/community nursing, hospital wards, pediatric clinics, surgical units, occupational healthcare, outpatient clinics and medical centers.

### **Clinical chemistry**

- 2610 Acid-base status and electrolytes
- 3240 Albumin and creatinine in urine
- 2100 Basic chemistry, POCT analyzers
- 2132 C-reactive protein (CRP), POCT
- 3300 Drug of abuse screening in urine
- 2750 Faecal occult blood, qualitative
- 2749 Faecal occult blood, quantitative
- 2570, 2580, 2590 Glucose meters
- 1263 Haemoglobin A1c, liquid samples, POCT
- 2114 Haemoglobin, 1-level, POCT
- 2115 Haemoglobin, 1-level HemoCue 801 and HemoCue 301
- 2112 Haemoglobin, 3-level samples, POCT
- 2526 Ketones (beta-hydroxybutyrate), POCT
- 2690 Natriuretic peptides 1, B-type, NT-ProBNP
- 2691 Natriuretic peptides 2, B-type, BNP
- 3270 Pregnancy test
- 2530 Troponin I and Troponin T, detection, POCT
- 3100 Urine strip test A

### **Haematology**

- 4388 D-Dimer
- 4335 INR, CoaguChek, i-STAT and Siemens Xprecia, POCT
- 4337 INR, EuroLyzer, POCT
- 4340 INR LAbPad, POCT
- 4338 INR, MicroINR, LumiraDX and CoagSense, POCT
- 5430 Malaria, antigen and nucleic acid detection
- 4130 White blood cell count: HemoCue, POCT
- 4190 White blood cell differential count: HemoCue, POCT

### Microbiology

- 5635 Dengue virus, antibodies and antigen detection
- 5640 EBV mononucleosis, POCT
- 5860 Helicobacter pylori, antibodies
- 5596 Helicobacter pylori, antigen detection in faeces
- 5090 HIV, antibodies and antigen detection, POCT
- 5671 Influenza virus A+B, antigen detection
- 5597 Legionella, antigen detection in urine
- 5430 Malaria, antigen and nucleic acid detection
- 5980 Mycoplasma pneumoniae, antibodies
- 5560 Puumala virus, antibodies
- 5673 Respiratory adenovirus, antigen detection
- 5098 Rotavirus and adenovirus, antigen detection
- 5672 RS virus, antigen detection
- 5677 SARS CoV-2, antibodies
- 5681 SARS-CoV-2 antigen detection
- 5676 SARS-CoV-2 nucleic acid detection
- 5595 Streptococcus pyogenes, group A, antigen detection in pharyngeal sample
- 5599 Streptococcus agalactiae (GBS), nucleic acid detection
- 5598 Streptococcus pneumoniae, antigen detection in urine
- 5099 Tick-borne encephalitis virus, antibodies
- 5473 Trichomonas vaginalis, detection

### **Preanalytics**

- 7801 Preanalytics, urine and blood sample collection
- 7804 Preanalytics, POCT in chemistry

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# **Immunology**

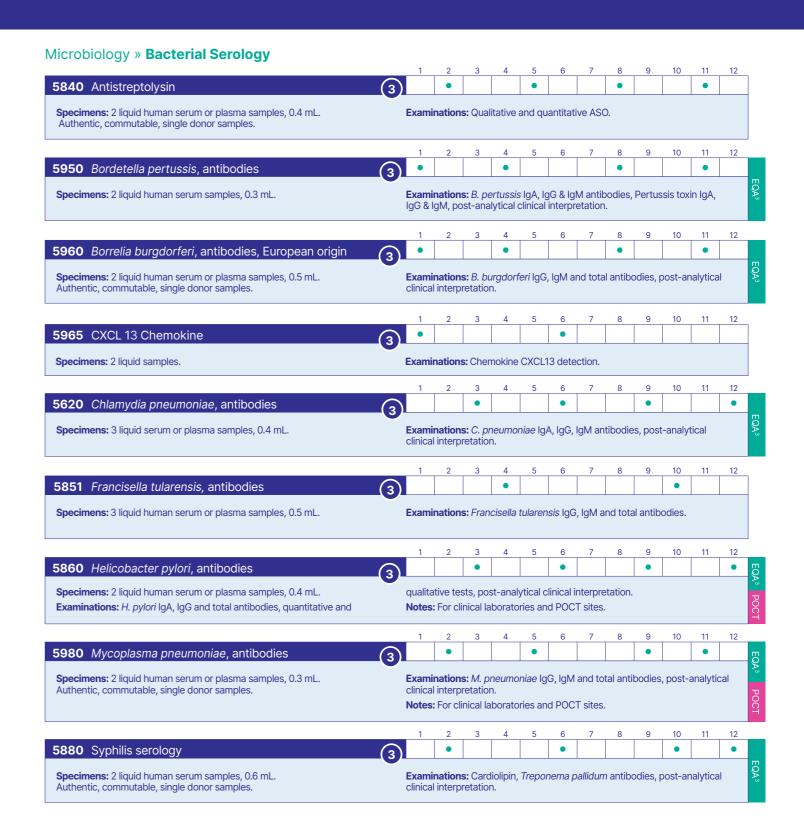
**Examinations:** Thyroid stimulating hormone receptor antibodies.

This program includes schemes for immunodiagnostic tests such as those for coeliac disease, rheumatoid factor and thyroid gland autoantibodies. All of the schemes involve analysis of liquid human serum or plasma samples. For allergy diagnostics, review the allergology program in the clinical chemistry portfolio.

### **5935** ANCA and GbmAb Specimens: 2 liquid human serum or plasma samples, 0.5 mL. Pre- and/or post-analytical cases in part of the rounds. Examinations: Anti-neutrophil cytoplasmic Ab, Myeloperoxidase Ab, Notes: Quantitative results are also processed (Pr3Ab, MPOAb, GbmAb). Proteinase-3 Ab and Glomerular basement membrane Ab. 5900 Antinuclear antibodies • Specimens: 3 liquid human serum or plasma samples, 0.6 mL. Notes: Extractable antinuclear antigens and double-stranded deoxyribonucleic acid are included. **Examinations:** ANA, ENAAb, RNPAb, SmAb (SmDAb and/or SmBAb), SSAAb, SSBAb, ScI70Ab, CENP-B, CENP-A, Jo1Ab, dsDNA, HistAb, RibP Ab, RNApol III Ab. Pre- and/or post-analytical cases in part of the rounds. **5938** Autoimmune diagnostics, IFA interpretation Specimens: 3-5 cases (digital images). Examinations: Interpretation (ANA, ANCA and EMA images). 5930 Autoimmune liver disease and gastric parietal cell antibodies (3) Specimens: 2 liquid human serum or plasma samples, 0.4 mL. **Examinations:** Smooth muscle antibodies, Mitochondrial antibodies, Gastric parietal cell antibodies. 5940 Coeliac disease, antibodies Notes: Quantitative results are also processed (tTGAbA, tTGAbG, DGPAbA, Specimens: 2 liquid human serum or plasma samples, 0.7 mL. DGPAbG). Scheme is not suitable for POCT. **Examinations:** Endomysium antibodies, tissue transglutaminase antibodies, deamidated gliadin peptide antibodies, interpretation of the Total IgA concentration of the sample. Pre- and/or post-analytical cases in part of the (3) Interferon Gamma Release Assay (IGRA) for Mycobacterium tuberculosis Specimens: One sample set (contains 3 lyophilized samples, 1 liquid blank/ Examinations: Quantitative result and qualitative interpretation of TbINFg. NIL sample and water to dissolve the samples) and a preanalytical case The scheme is not suitable for the TB T-Spot test. description including questions. **5937** Phospholipid antibodies beta-2-glycoprotein antibodies (IgG and IgM). Specimens: 2 liquid human serum or plasma samples, 0.5 mL. Notes: Quantitative results are also processed. **Examinations:** Phospholipid antibodies, Cardiolipin antibodies (IgG and IgM), **5820** Rheumatoid factor and citrullic peptide antibodies Examinations: Qualitative and quantitative RF, CCPAb. Specimens: 2 liquid human-derived samples, 0.7 mL. 10 **5920** Thyroid gland antibodies • Specimens: 2 liquid human serum or plasma samples, 0.4 mL. Pre- and/or post-analytical cases in part of the rounds. Notes: Quantitative results are also processed. **Examinations:** Thyroglobulin antibodies and thyroid peroxidase antibodies. **5913** TSH receptor antibodies Specimens: 2 liquid human serum or plasma samples, 0.4 mL. Notes: Quantitative results are also processed.

# Microbiology

The microbiological EQA programs are suitable for clinical laboratories and POCT sites performing testing in the areas of bacterial serology, bacteriology, mycology, parasitology and virology. While the selection includes schemes for antigen detection, antibody detection, culture, microscopy, and PCR tests, solutions for versatile needs are available. Authentic single donor samples are included in multiple schemes.



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### Microbiology » Bacteriology **5190** Faecal culture **5050** Bacteriological staining, direct Specimens: 2 lyophilized mixtures of bacteria. direct nucleic acid detection. Pathogens included are Aeromonas, Campylobacter, Plesiomonas, Salmonella, Shigella and Yersinia. **Examinations:** Culture, identification and antimicrobial susceptibility Specimens: 3 cases, 3-9 digital images. Examinations: Interpretation of digital images taken from direct (rounds 2 and 4). In addition to culture, samples are also suitable for bacteriological Gram staining of clinical samples. **5080** General Bacteriology 1 (aerobes and anaerobes) **5100** Blood culture (incl. sepsis multiplex methods) **Examinations:** Isolation of pathogens and antimicrobial susceptibility testing, Specimens: 4 lyophilized mixtures of microbes: both pathogens and normal flora. The samples intended for susceptibility testing may include both pre- and/or post-analytical cases. **Examinations:** Culture, identification, antimicrobial susceptibility testing. international quality control strains and susceptible or resistant clinical strains. **Specimens:** 3 Ivophilized samples. Brief case histories also given. Fresh Notes: 5080 includes 5081, General Bacteriology 2. Direct nucleic acid detection from positive blood culture bottles by multiplex blood is needed in the specimen preparation. The samples intended for Brief case histories are also given. Pre- and/or post-analytical cases in part of susceptibility testing may include both international quality control strains and methods is included in the scheme. the rounds. clinical strains **Notes:** Fresh blood is needed but not included in the shipment. • **5081** General Bacteriology 2 (aerobes) • • Blood culture, screening (incl. sepsis multiplex **Specimens:** 2 lyophilized mixtures of microbes: both pathogens and Examinations: Isolation of pathogens and antimicrobial susceptibility testing, (1)pre- and/or post-analytical cases. normal flora. The specimens intended for susceptibility testing may methods) include both international quality control strains and susceptible or Notes: 5080 General Bacteriology 1 includes 5081. resistant clinical strains. Brief case histories are also given. Pre- and/or **Specimens:** 3 lyophilized samples. Brief case histories also given. Fresh methods. The scheme is also suitable for stem cell banks screening only for post-analytical cases in part of the rounds. blood is needed in the specimen preparation. possible growth. **Examinations:** Culture, preliminary identification using Gram staining and/or Notes: Fresh blood is needed but not included in the shipment. direct nucleic acid detection from positive blood culture bottles by multiplex **5041** Gram stain, blood culture 5150 Cerebrospinal fluid, bacterial culture Specimens: 2 air-dried, unfixed microbe suspensions on slides. **Examinations:** Staining and microscopy. Brief case histories also given. **Specimens:** 2 lyophilized samples. Brief case histories are also given. Notes: See also scheme 5303 Meningitis-encephalitis multiplex, nucleic acid **Examinations:** Culture and identification. The scheme is also suitable • • **5040** Gram stain, colonies • for laboratories performing screening and reporting merely a preliminary identification. Specimens: 3 air-dried, unfixed microbe suspensions on a slide. Examinations: Staining and microscopy. Chlamydia trachomatis and Neisseria gonorrhoeae, • • • • 5596 Helicobacter pylori, antigen detection in faeces nucleic acid detection Specimens: 3 samples: lyophilized faecal. Notes: For clinical laboratories and POCT sites **Examinations:** Antigen detection. Notes: See also scheme 5302 Sexually transmitted diseases multiplex, Specimens: 3 simulated swab/urine samples. 2 mL. **Examinations:** Detection of *C. trachomatis* and *N. gonorrhoeae* nucleic acid. nucleic acid detection. The samples contain hDNA. • **5253** *Helicobacter pylori*, nucleic acid detection • Notes: The samples are suitable for all H. pylori NAT methods, Specimens: 3 simulated swab samples or lyophilized faecal samples. **5200** Clostridioides difficile, culture and toxin detection clarithromycin resistant samples can be included. The samples contain Examinations: H. pylori nucleic acid detection. Clarithromycin susceptibility (occasionally) **Examinations:** This scheme includes *C. difficile* culture, antigen detection Specimens: 2 lyophilized mixtures of bacteria. (GDH), toxin detection and direct nucleic acid detection. Hypervirulent C. difficile strains also included. • 5597 Legionella, antigen detection in urine Specimens: 3 simulated urine samples. **Examinations:** Legionella antigen detection. 5202 Clostridioides difficile, extra set of samples 5230 Mycobacterium tuberculosis, drug resistance, (3) Specimens: 2 lyophilized mixtures of bacteria. Notes: Only in connection with scheme 5200. nucleic acid detection **Examinations:** Mycobacterium tuberculosis nucleic acid detection, rifampicin Specimens: 2 simulated samples, 1 mL. susceptibility and isoniazid susceptibility. **5201** Clostridioides difficile, nucleic acid detection Mycobacterium tuberculosis, drug resistance, Specimens: 2 lyophilized mixtures of bacteria. Examinations: C. difficile direct nucleic acid detection. Hypervirulent C. difficile strains also included. nucleic acid detection, extra set of samples Notes: 5200 includes also this examination Notes: Only in connection with scheme 5230. Specimens: 2 simulated samples, 1 mL. • 5191 Faecal bacterial pathogens multiplex, nucleic acid detection • 5220 Mycobacterial culture and stain **Specimens:** 3 samples. Either lyophilized mixtures of bacteria and/or EIEC, E. coli EPEC, E. coli ETEC, Plesiomonas, Salmonella, Shigella and simulated samples. 1 mL. **Specimens:** 2 lyophilized samples and 2 fixed smears on slides. detection, acid-fast staining and microscopy. **Examinations:** Direct nucleic acid detection. Pathogens included are Notes: During the period of one calendar year, a comprehensive selection of

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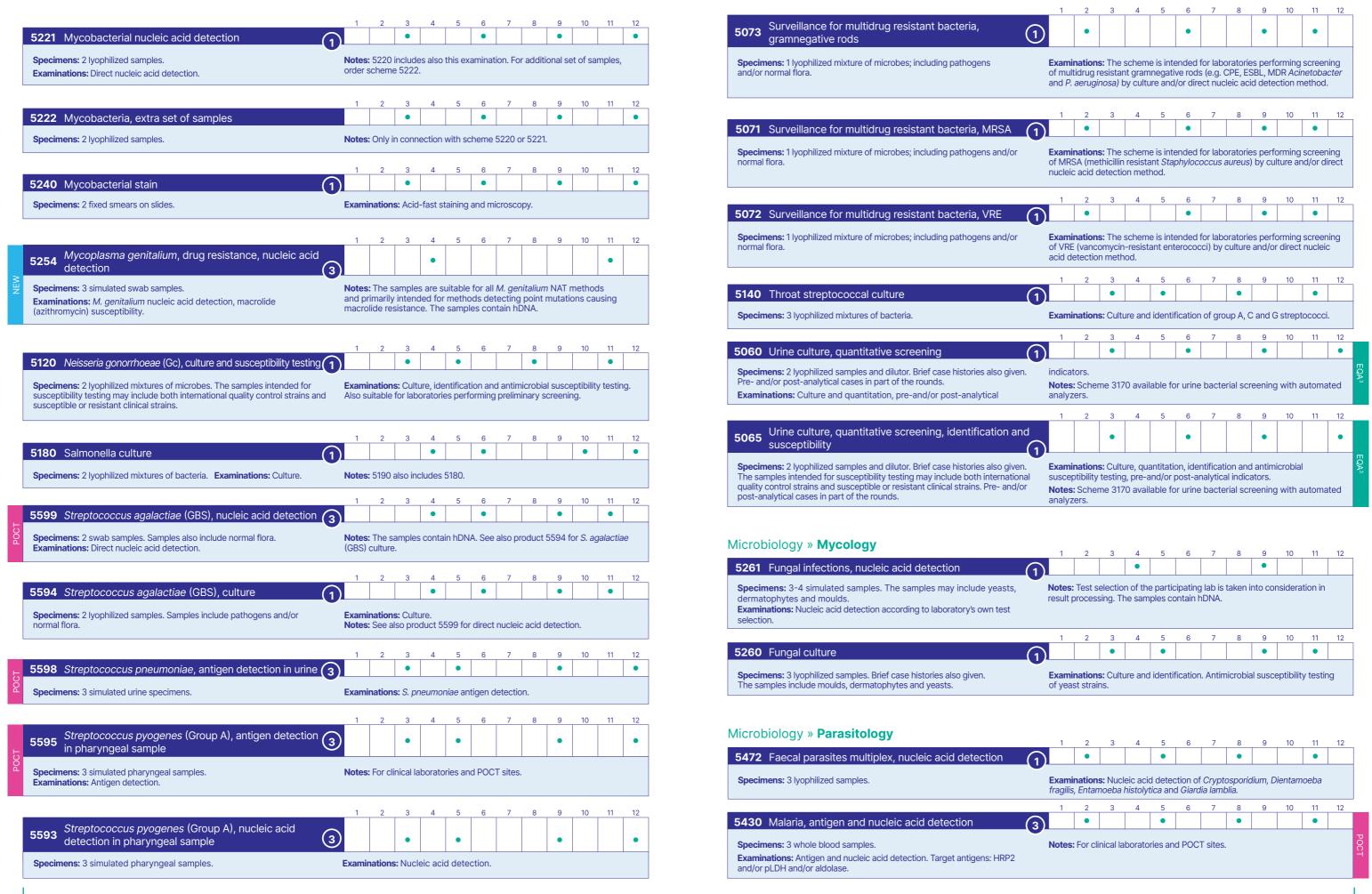
Aeromonas, Campylobacter, E. coli EHEC (stx1/stx2), E. coli EAEC, E. coli

listed pathogens will be covered.

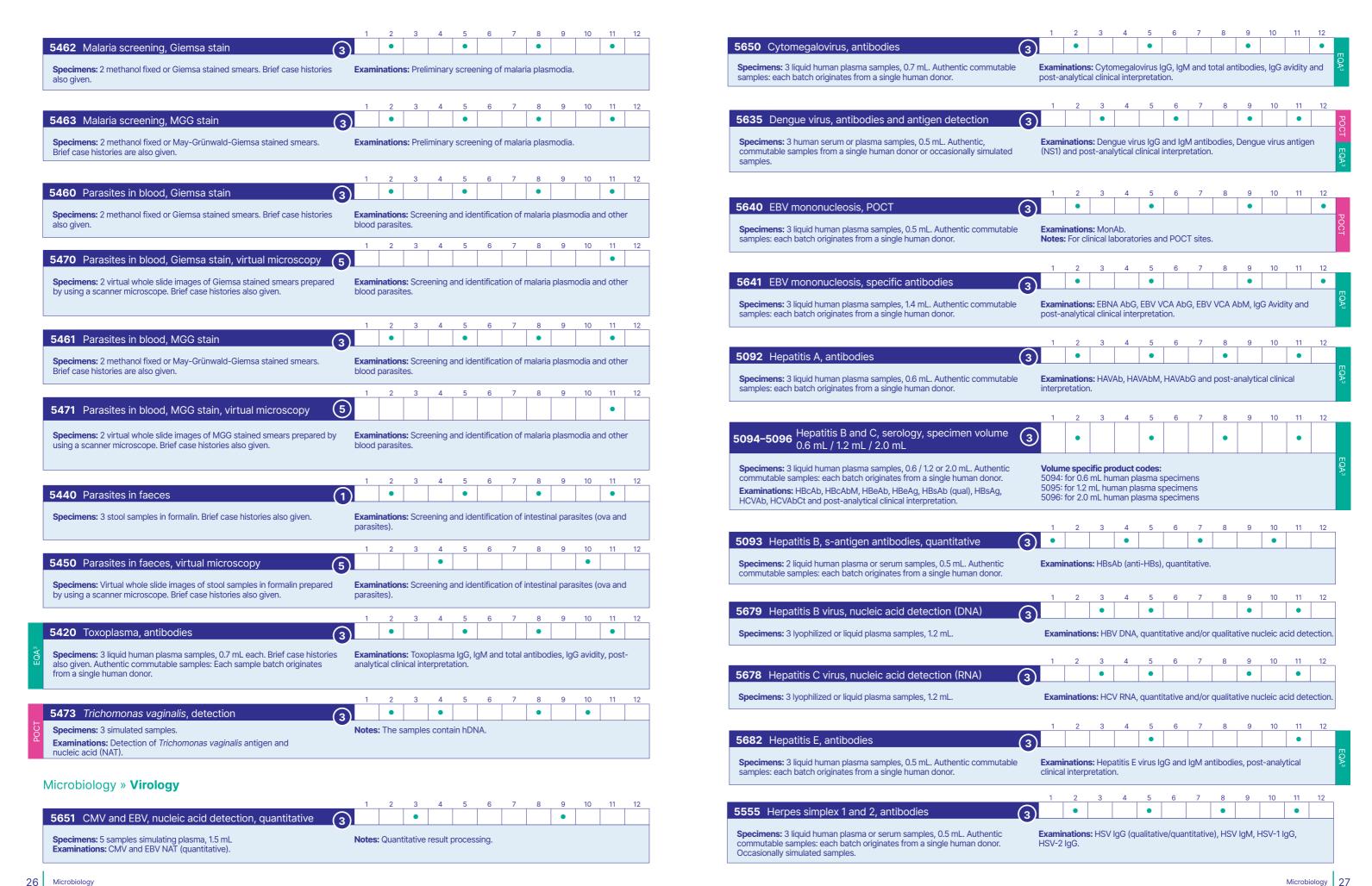
**Examinations:** Detection of *Mycobacterium tuberculosis*, *Mycobacterium* 

tuberculosis complex and atypical mycobacteria: culture, direct nucleic acid

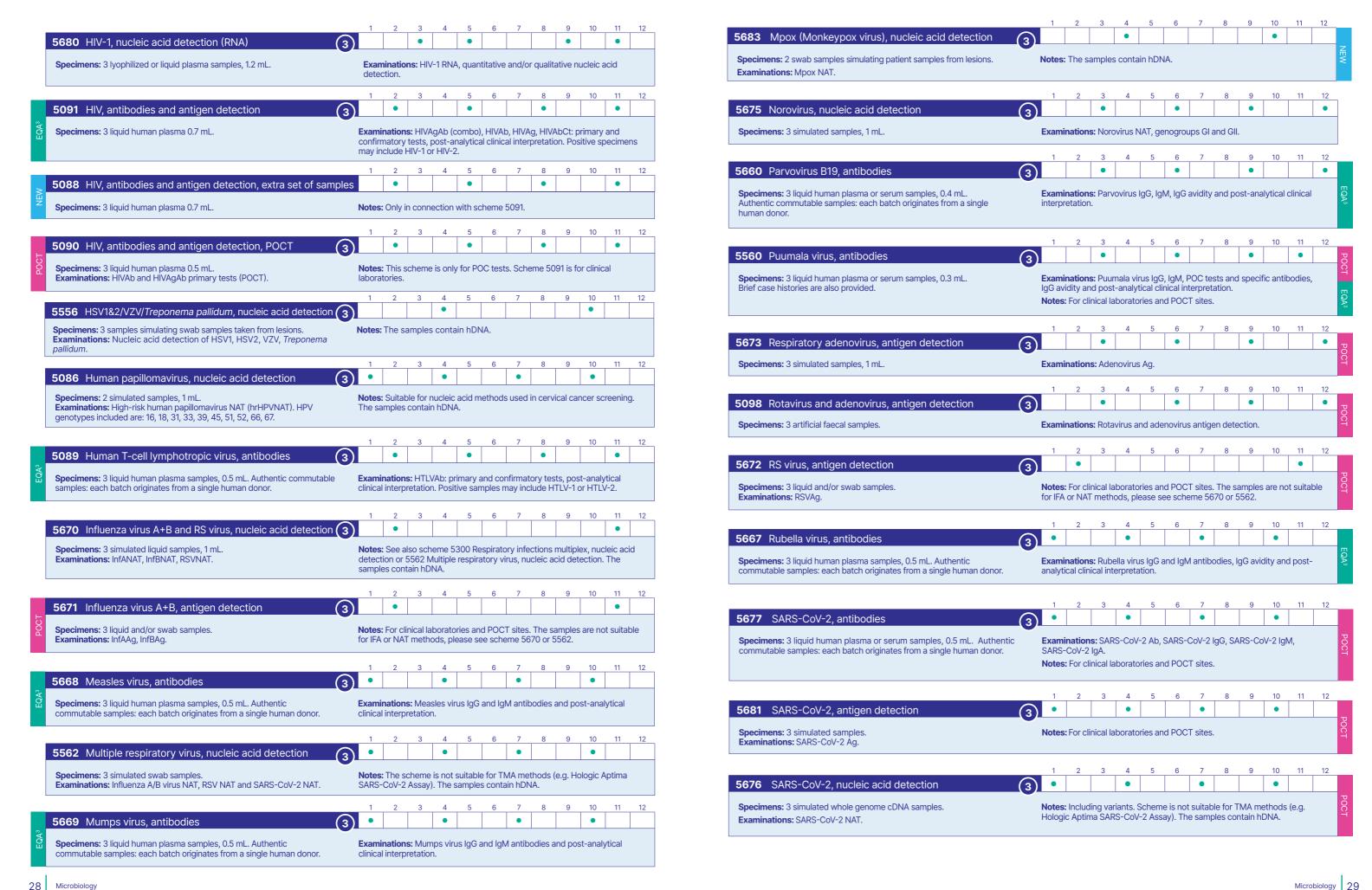
Notes: See also product 5250 IGRA for M. tuberculosis.



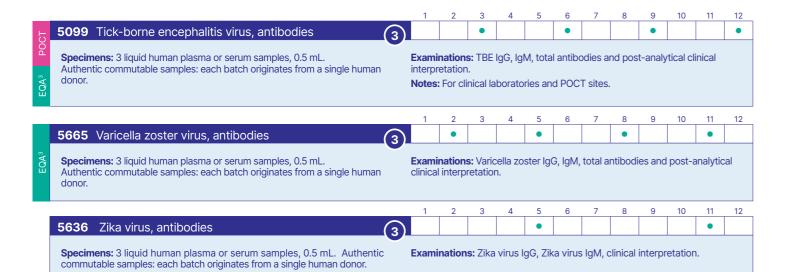
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### **EQA schemes including Antimicrobial Susceptibility Testing**

### Bacteriology and mycology

5100 Blood culture

5190 Faecal culture (rounds 2 and 4)

5260 Fungal culture

5080 General Bacteriology 1

5081 General Bacteriology 2

5253 Helicobacter pylori, nucleic acid detection

5230 Mycobacterium tuberculosis, drug resistance, nucleic acid detection

- 5254 Mycoplasma genitalium, drug resistance, nucleic acid
- 5120 Neisseria gonorrhoeae (Gc), culture and susceptibility testing
- 5073 Surveillance for multidrug resistant bacteria, gramnegative rods
- 5071 Surveillance for multidrug resistant bacteria, MRSA
- 5072 Surveillance for multidrug resistant bacteria, VRE
- 5065 Urine culture, quantitative screening, identification and susceptibility

### **EQA** schemes suitable for direct nucleic acid testing methods

### Bacteriology

- 5612 Chlamydia trachomatis and Neisseria gonorrhoeae, nucleic acid detection
- 5253 Helicobacter pylori, nucleic acid detection

- 5593 Streptococcus pyogenes (Group A), nucleic acid detection in
- 5071 Surveillance for multidrug resistant bacteria, MRSA
- 5072 Surveillance for multidrug resistant bacteria, VRE

### Multiplex

- 5191 Faecal bacterial pathogens multiplex, nucleic acid detection
- 5472 Faecal parasites multiplex, nucleic acid detection
- 5304 Gastrointestinal viral multiplex, nucleic acid detection
- 5303 Meningitis-encephalitis multiplex, nucleic acid detection
- 5300 Respiratory infections multiplex, nucleic acid detection

- 5201 Clostridioides difficile, nucleic acid detection
- 5191 Faecal bacterial pathogens multiplex, nucleic acid detection
- 5221 Mycobacterial nucleic acid detection
- 5230 Mycobacterium tuberculosis, drug resistance, nucleic acid
- 5254 Mycoplasma genitalium, drug resistance, nucleic acid detection
- 5599 Streptococcus agalactiae (GBS), nucleic acid detection
- pharyngeal sample
- 5073 Surveillance for multidrug resistant bacteria gramnegative rods

- 5302 Sexually transmitted diseases multiplex, nucleic acid detection

### **Parasitology**

- 5472 Faecal parasites multiplex, nucleic acid detection
- 5430 Malaria, antigen and nucleic acid detection
- 5473 Trichomonas vaginalis, detection

### Virology

- 5651 CMV and EBV, nucleic acid detection, quantitative
- 5679 Hepatitis B virus, nucleic acid detection (DNA)
- 5678 Hepatitis C virus, nucleic acid detection (RNA)
- 5680 HIV-1, nucleic acid detection (RNA)
- 5556 HSV1&2/VZV/T. pallidum, nucleic acid detection
- 5086 Human papillomavirus, nucleic acid detection
- 5670 Influenza virus A+B and RS virus, nucleic acid detection
- 5562 Multiple Respiratory Virus, nucleic acid detection
- 5683 Mpox (Monkeypox virus), nucleic acid detection
- 5675 Norovirus, nucleic acid detection
- 5676 SARS-CoV-2, nucleic acid detection

### Mycology

5261 Fungal infections, nucleic acid detection

# Multiplex

Multiplex EQA schemes are aimed to support laboratories to fulfill quality requirements of multiplex nucleic acid tests. All schemes include clinically relevant samples specially designed for multiplex nucleic acid testing. The multiplex schemes are annual programs and during the period of one calendar year, a comprehensive selection of listed pathogens will be covered.

### 5100 Blood culture (incl. sepsis multiplex methods) **Specimens:** 3 lyophilized samples. Brief case histories also given. Fresh **Examinations:** Culture, identification, antimicrobial susceptibility testing. blood is needed in the specimen preparation. The samples intended for Direct nucleic acid detection from positive blood culture bottles by multiplex susceptibility testing may include both international quality control strains and methods is included in the scheme Notes: Fresh blood is needed but not included in the shipment. 5101 Blood culture, screening (incl. sepsis multiplex methods) **Specimens:** 3 lyophilized samples. Brief case histories also given. Fresh methods. The scheme is also suitable for stem cell banks screening only for blood is needed in the specimen preparation. possible growth. Examinations: Culture, preliminary identification using Gram staining and/or Notes: Fresh blood is needed but not included in the shipment. direct nucleic acid detection from positive blood culture bottles by multiplex 5191 Faecal bacterial pathogens multiplex, nucleic acid detection (1) • Specimens: 3 samples. Either lyophilized mixtures of bacteria and/or E. coli EIEC, E. coli EPEC, E. coli ETEC, Plesiomonas, Salmonella, simulated samples. 1 mL. Shigella and Yersinia **Examinations:** Direct nucleic acid detection. Pathogens included are Notes: During the period of one calendar year, a comprehensive selection of Aeromonas, Campylobacter, E. coli EHEC (stx1/stx2), E. coli EAEC, listed pathogens will be covered. 11 12 10 5472 Faecal parasites multiplex, nucleic acid detection • Specimens: 3 lyophilized samples. **Examinations:** Nucleic acid detection of *Cryptosporidium*, *Dientamoeba* fragilis, Entamoeba histolytica, Giardia lamblia. • **5304** Gastrointestinal viral multiplex, nucleic acid detection Specimens: 3 simulated samples, 1 mL. Notes: During the period of one calendar year, a comprehensive selection of listed pathogens will be covered. **Examinations:** Direct multiplex nucleic acid detection. Pathogens included are: Adenovirus, Astrovirus, Norovirus, Rotavirus, Sapovirus. 5303 Meningitis-encephalitis multiplex, nucleic acid detection simplex virus 1 (HSV1), Herpes simplex virus 2 (HSV2), Human herpesvirus Specimens: 3 simulated samples, 1 mL. 6 (HHV6), Human parechovirus (HPeV), Varizella zoster virus (VZV) **Examinations:** Direct multiplex nucleic acid detection. Pathogens included Cryptococcus neoformans and Cryptococcus gattii. are Escherichia coli K1, Haemophilus influenzae, Listeria monocytogenes, Neisseria meningitidis, Streptococcus agalactiae, Streptococcus pneumoniae, Notes: During the period of one calendar year, a comprehensive selection of Cytomegalovirus (CMV), Enterovirus, Epstein-Barr virus (EBV), Herpes listed pathogens will be covered. 5300 Respiratory infections multiplex, nucleic acid detection (1 • Specimens: 4 simulated samples. 1 mL. pneumophila, metapneumovirus, M. pneumoniae, parainfluenzavirus 1-4. rhinovirus, RSV A/B, SARS-CoV-2 and S. pneumoniae. **Examinations:** Direct multiplex nucleic acid detection. Pathogens included **Notes:** During the period of one calendar year, a comprehensive selection of are adenovirus, bocavirus, B. parapertussis, B. pertussis, C. pneumoniae, coronavirus (OC43, 229E, NL63, HKU1), enterovirus, influenzavirus A/B, L listed pathogens will be covered. The samples contain hDNA. 12

Specimens: 4 simulated swab/urine samples, 2 mL.

detection

**Examinations:** Direct multiplex nucleic acid detection. Pathogens included are C. trachomatis, M. genitalium, M. hominis, N. gonorrhoeae, T. vaginalis,

Sexually transmitted diseases multiplex, nucleic acid

U. parvum and U. urealyticum.

Notes: During the period of one calendar year, a comprehensive selection of listed pathogens will be covered. The samples contain hDNA.

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Microbiology Multiplex

# **Pathology**

blocks or from one multiblock.

Seven high quality schemes are available for pathology laboratories. With changing topics in the rounds, both the routine and more advanced needs are covered. The challenges are realistic and include also less commonly encountered clinically relevant cases. In the cytology and histopathology schemes virtual microscopy is used. With this technology, viewing of several fields of vision and levels of focus are enabled on a computer screen simulating analysis with an optical microscope.

round (6600S for 3 antibodies, 6600 for 5).

# **Preanalytics**

**Examinations:** Participants are asked to find preanalytical error(s) in the

The preanalytical schemes provide laboratories and POCT sites with tools for extending quality assurance beyond the commonly assessed analytical phase. As a result of the improved analytical quality, most errors have been suggested to now occur in the preanalytical phase. Managing all phases of the total testing cycle is equally important to ensure patient safety.

sample collection. Scheme is carried out online.

### Pathology » Preanalytics **7806** Preanalytics and process in anatomic pathology 8817 HIL-index [DEKS] **Specimens:** 3-5 cases with preanalytical and process error(s). Notes: The scheme is intended for all laboratory staff of pathology laboratories. Scheme is carried out online. **Examinations:** Participants are asked to find preanalytical or laboratory Specimens: 2 samples, 1 mL each. **Examinations:** Selected components are asked to be analysed. One of the process error(s) in the cases. samples is haemolysed, icteric or lipemic. Pathology » Diagnostics 7806 Preanalytics and process in anatomic pathology • 6701 Gynaecological cytology (liquid based), virtual microsc 5 Specimens: 3-5 cases with preanalytical and process error(s). Notes: The scheme is intended for all laboratory staff of **Examinations:** Participants are asked to find preanalytical or laboratory pathologylaboratories. Scheme is carried out online. Specimens: Virtual images of at least 5 Papanicolaou stained slides of liquid **Examinations:** Observations and diagnoses. process error(s) in the cases. based cytology (LBC) samples (ThinPrep). Diagnostics of cellular atypias in Notes: Virtual microscopy program does not work with Internet Explorer. samples taken from gynaecological loci is assessed. Brief case histories and • 6700 Gynaecological cytology (smear), virtual microscopy 7800 Preanalytics, clinical chemistry **Specimens:** Virtual images of at least 5 Papanicolaou stained slides of Examinations: Observations and diagnoses. **Specimens:** 3 cases with preanalytical error(s). Notes: The scheme is intended for personnel using POCT tests and devices. conventional pap smear samples. The samples are selected from routine Notes: Virtual microscopy program does not work with Internet Explorer. Scheme is carried out online. cytological material. Diagnostics of cellular atypias in samples taken from **Examinations:** Participants are asked to find preanalytical error(s) in the gynaecological loci is assessed. Brief case histories and instructions are provided. 6542 Histopathology, virtual microscopy 7802 Preanalytics, microbiology Topics 2023: 1/2024 Skin pathology, 2/2024 Urothelial tumors **Examinations:** Observations and diagnoses. **Specimens:** Virtual images of at least 5 slides of miscellaneous tissue. Notes: Topics may vary annually. **Specimens:** 3 cases with preanalytical error(s). Notes: The scheme is intended for all laboratory staff of clinical microbiology Brief case histories and instructions are provided. laboratories. Scheme is carried out online. **Examinations:** Participants are asked to find preanalytical error(s) in the cases. 6702 Non-gynaecological cytology, virtual microscopy **7807** Preanalytics, Pneumatic Sample Transport Specimens: Virtual images of Papanicolaou stained slides of non-**Examinations:** Observations and diagnoses. gynaecological cytosentrifuge (CCF) or smear preparations or May-Grünwald Notes: Virtual microscopy program does not work with Internet Explorer. -Giemsa stained smears or imprint preparations. Images of at least 5 cases Specimens: Two surrogate blood vials (i.e. measurement devices for Notes: Vials are sent to the participating laboratories during Septemberfrom representative loci. Brief case histories and instructions are provided. recording 3-axis acceleration during pneumatic tube system transport (PTS). October. Laboratories are asked to perform the recordings within one week upon receiving the vials and to return the vials using a courier (shipping costs **Examinations:** Vials are sent through the PTS as regular blood samples, not included). It is possible to measure 3 different lines from the same PTS no laboratory analysis is performed. Rejection probability of LDH, ASAT and manufacturer K will be calculated using the cumulative vibration level, laboratory defined Pathology » Technology anayte-specific hemolysis cutoffs, and a hemolysis model. • **6543** Histological staining techniques Topics: 1/2024 Masson Trichrome, Reticulin 2/2024 Helico-GIEMSA, AB-PAS. **Examinations:** Staining of the slides. A set of stained slides is returned to 7804 Preanalytics, POCT in chemistry Labquality for evaluation by an expert board. **Specimens:** Unstained paraffin sections or smears. Notes: Stains vary annually. Specimens: 3 cases with preanalytical error(s). Notes: The scheme is intended for personnel using POCT tests and devices. Scheme is carried out online **Examinations:** Participants are asked to find preanalytical error(s) in the 9 10 11 12 **6600, 6600S** Immunohistochemical staining methods Topics: 1/2024 Unknown tumour: CD34, alfa-SMA, S-100, CD117, CYT5/6 **Examinations:** Staining of the slides. A set of stained slides is returned to 2/2024 Breast cancer: PR, HER2, ER, Ki-67 ja HER2 -ISH\*\*) also double Labquality for evaluation by an expert board. **7801** Preanalytics, urine and blood sample collection stain accepted, but no FISH 3/2024 Lymphoma: CD3, CD5, CD43, CD45, Notes: Changes in frequency, antibodies and sample type. Three rounds with distinct topics available annually. Multiblock samples are now Specimens: 3 cases with preanalytical error(s). **Notes:** The scheme is intended for personnel performing blood and urine **Specimens:** Unstained paraffin embedded tissue from different tissue included. Participants can select 3 or 5 antibodies of their choice in each

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cases.

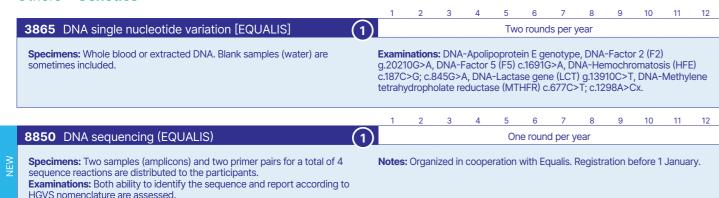
# **Others**

### Others » Andrology

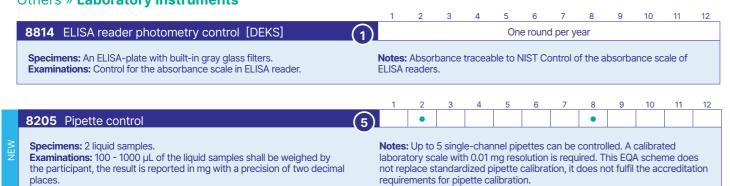


	Others » Clinical physiology		1	2	3	4	5	6	7	8	9	10	11	12
	<b>7130</b> ECG, interpretation					•						•		
EQA3	Specimens: 3 digital ECG registrations (images). Examinations: Technical quality and findings.	for	r pers	sonnel	in POO	CT unit	d for no s. Parti or both	cipants	s are ev					

### Others » Genetics



### Others » Laboratory instruments



# **External quality assessment** for extra-analytical phases

PREANALYTICAL EQA | ANALYTICAL EQA | POSTANALYTICAL EQA

Labquality has two advanced external quality assessment programs for extra-analytical phases of clinical laboratory investigation process. Preanalytical EQA programs are independent schemes for the evaluation of preanalytical phase and Integrated EQA programs includes pre- and/or postanalytical evaluation together with traditional EQA samples.

### **Pre- and postanalytical EQA programs**

### Preanalytical EQA programs

8817	HIL-index [DEKS]	7807	Preanalytics, Pneumatic sample transport
7800	Preanalytics, clinical chemistry	7804	Preanalytics, POCT in chemistry
7802	Preanalytics, microbiology	7801	Preanalytics, urine and blood sample collection
7806	Preanalytics and process in anatomic pathology		

### Integrated EQA programs

### **Clinical chemistry**

•		
2570, 2580, 2590 Glucose meters	2200	Lipids and lipoproteins
2114 Haemoglobin, 1-level, POCT	2240	Proteins, electrophoresis
2300, 2300S Hormones A: Basic analytes of hormone and	2050	Serum B and C (2-level)
immunochemistry	2480	Vitamin A, E and D metabolite
2301, 2301S Hormones B: Steroid and peptide hormones		

### Clinical physiology

7130 ECG, interpretation

5935 ANCA and GbmAb

### Haematology

4480 Column agglutination methods: grading of reactions and patient cases

### **Immunology**

5900	Antinuclear antibodies			
5940	Coeliac disease, antibodies			
5250	Interferon Gamma Release Assay (IGRA) for			
	Mycobacterium tuberculosis			
5920	Thyroid gland antibodies			
Microbiology				

5950 Bordetella pertussis, antibodies

5960	Borrelia burgdorferi, antibodies, European origin
5620	Chlamydia pneumoniae, antibodies
5650	Cytomegalovirus, antibodies
5635	Dengue virus, antibodies and antigen detection
5641	EBV mononucleosis, specific antibodies
5080	General Bacteriology 1 (aerobes and anaerobes)
5081	General Bacteriology 2 (aerobes)
5860	Helicobacter pylori, antibodies
5092	Hepatitis A, antibodies
5094-	- 5096 Hepatitis B and C, serology
5682	Hepatitis E, antibodies
5091	HIV, antibodies and antigen detection
5089	Human T-cell lymphotropic virus, antibodies

5668	Measles virus, antibodies
	Mumps virus, antibodies
	Mycoplasma pneumoniae, antibodies
	Parvovirus B19, antibodies
5560	Puumala virus, antibodies
5667	Rubella virus, antibodies
5880	Syphilis serology
5099	Tick-borne encephalitis virus, antibodies
5420	Toxoplasma, antibodies
5060	Urine culture, quantitative screening
5065	Urine culture, quantitative screening, identification
	and susceptibility
5665	Varicella-zoster virus, antibodies
5636	Zika virus, antibodies

Others Pre- and postanalytical EQA programs

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