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EXTERNAL QUALITY ASSESSMENT
PROFICIENCY TESTING
Quality System

External quality assessment programmes for medical laboratories, available through **EQAS.GR**

16	ISO/IEC 17043	1, 4 or 12
EQA schemes	accredited by ACCREDIA	samples per year, depending on scheme and frequency

EQAS.GR, your partner for external quality assessment

EQAS.GR offers medical laboratories the Quality System external quality assessment programmes, organised by Bio-Group Medical System S.r.l., Italy. With these programmes, your laboratory analyses samples of unknown value as if they were patient samples and receives an independent evaluation of its results, compared with laboratories that use the same method and the same instrument.

EQAS.GR takes care of your participation from start to finish:

- helps you choose the schemes and the frequency that fit your laboratory;
- prepares your offer and handles your enrolment;
- sends you the login details, the instructions and the shipping calendar;
- stays your contact throughout the year, for samples, result entry and reports.

01 AVAILABLE SCHEMES

Scheme	Material and frequency
Clinical Chemistry 34 parameters	Lyophilised human serum · Monthly (12 samples/year), quarterly (4 samples/year) or single sample
Immunology 35 parameters	Lyophilised human serum · Monthly (12 samples/year), quarterly (4 samples/year) or single sample
Haematology 11 parameters + optional differential	Human whole blood, liquid, ready to use · Monthly (12 samples/year), quarterly (4 samples/year) or annual (1 sample)
Coagulation 7 parameters	Lyophilised plasma · Monthly, quarterly or annual
Specific Proteins 9 parameters	Human serum, lyophilised or liquid · Monthly or quarterly

Scheme	Material and frequency
Cardiac Markers 10 parameters	Lyophilised human serum · Monthly or quarterly
Serum Protein Electrophoresis 5 fractions	Lyophilised human serum for agarose gel and cellulose acetate; liquid sample for capillary electrophoresis · Monthly or quarterly
HbA1c 1 parameter	Lyophilised human red blood cells · Monthly or quarterly
Serology 29 parameters	Lyophilised human serum · Quarterly
Urine 13 parameters	Synthetic urine, liquid · Quarterly
Urinary Sediment 5 elements	Electronic file · Quarterly
Drugs of Abuse 12 parameters	Synthetic urine, liquid · Quarterly
Faecal Occult Blood 1 parameter	Synthetic faeces or Nemesys card · Quarterly
ESR 3 parameters	Liquid sample · Quarterly
Blood Smear electronic file	Electronic file · Quarterly
Bacteriology 1 Bat-stick	Lyophilised bacterial strains (Bat-stick) · Quarterly

02 ACCREDITATION

ISO/IEC 17043, ACCREDIA

Accredited schemes: Clinical Chemistry, Immunology and Haematology.

03 HOW TO PARTICIPATE

1	2	3	4	5
Enrol at any time of the year	**Receive samples** by courier, on the calendar dates	**Analyse** as routine patient samples	**Enter results** online, by the deadline	**Get the report** online, kept for 4 years

1

Enrolment with EQAS.GR

- You can enrol at any time of the year. Shipments run from the month of enrolment until the end of the year.
- EQAS.GR sends you your login details, the instructions for participation and the shipping calendar.
- A certificate of participation for the current year comes with the first shipment.
- You need only internet access, a web browser and a PDF reader.

2

Samples

- Samples arrive by courier on the dates of the calendar, with instructions for use.
- Analyse them as routine patient samples, with your own method. Normally one determination per parameter.

- One level per sample; over the cycle, samples at different concentrations cover physiological and pathological ranges.
- Tell EQAS.GR promptly about any delivery problem (delay of more than 7 days, damaged or leaking samples). Replacement samples are sent for non-delivery or accidental damage.

3

Result entry

- Enter results online, in your restricted participant area, by the deadline in the calendar.
- For each parameter, report four items: method, unit, instrument and result. Results without all four are not evaluated.
- Results must be numerical; text such as "< …" is not accepted. Late results are not evaluated.

4

Reports

- Reports are published online on the calendar dates and remain available for four years.
- Each report contains statistical and performance indices and graphs that show at once whether there is an error and where it may come from.
- Confidentiality: your laboratory is identified only by a code.

04 HOW RESULTS ARE EVALUATED

- **Assigned value:** consensus mean of the participants, calculated with the robust algorithm A of ISO 13528:2022, which excludes outliers.
- **Performance score:** Z-score; Z'-score when the uncertainty of the assigned value is not negligible.

$\lvert Z \rvert \leq 2$	$2 < \lvert Z \rvert < 3$	$\lvert Z \rvert \geq 3$
Satisfactory	Questionable · warning signal	Unsatisfactory · action signal

- **Three comparison groups:** same method and same instrument; same method, all instruments; all participants for that parameter.
- **Trend over time:** Shewhart charts show the performance of your laboratory from one round to the next.
- **Qualitative schemes:** serology, bacteriology, urinary sediment and blood smear are evaluated as positive, negative or doubtful.

05 SCHEME DETAILS

Clinical Chemistry	
Frequency	Monthly (12 samples/year), quarterly (4 samples/year) or single sample
Evaluation	Quantitative
Product codes	Monthly MSQSCH12 / MSEQSCH12 · Quarterly MSQSCH4 / MSEQSCH4 · Single MSEQSCH1

Parameters	Albumin, Alkaline phosphatase, ALT, Amylase, AST, Bicarbonate, Bile acids, Bilirubin direct, Bilirubin total, Calcium, Chloride, Cholesterol HDL, Cholesterol LDL, Cholesterol total, Cholinesterase, CK NAC, Copper, Creatinine, Gamma GT, Glucose, Iron, LDH, Lipase, Lithium, Magnesium, Phosphorus, Potassium, Sodium, Total protein, Triglycerides, UIBC, Urea, Uric acid, Zinc

Immunology

Frequency	Monthly (12 samples/year), quarterly (4 samples/year) or single sample
Evaluation	Quantitative
Product codes	Monthly MSQSI12 / MSEQSI12 · Quarterly MSQSI4 / MSEQSI4 · Single MSEQSI1
Parameters	25-OH Vitamin D, Alpha-fetoprotein, β-hCG, C-peptide, CA 125, CA 15-3, CA 19-9, Carbamazepine, CEA, Cortisol, DHEA sulphate, Digoxin, Estradiol, Ferritin, Folate, FSH, FT3, FT4, IgE, Insulin, Intact PTH, LH, Progesterone, Prolactin, PSA free, PSA total, T3, T4, Testosterone, TG Ab, Thyroglobulin, TM Ab, TPO Ab, TSH, Vitamin B12

Haematology

Frequency	Monthly (12 samples/year), quarterly (4 samples/year) or annual (1 sample)
Evaluation	Quantitative
Product codes	Monthly MSQSE812 / MSEQUALITYE12 · Quarterly MSQUALITYE8 / MSEQUALITYE8 · Annual MSEQSE8
Parameters	WBC, RBC, Haemoglobin, Haematocrit, MCV, MCH, MCHC, Platelets, RDW, RDW-SD, MPV. Leukocyte differential (NEUT %, LYMPH %, MONO %, EOS %, BASO %) available as an option

Coagulation

Frequency	Monthly, quarterly or annual
Evaluation	Quantitative
Product codes	MSQSC4 · MSQSC12
Parameters	PT (time, activity, INR), APTT (time, ratio), Fibrinogen, D-dimer, Antithrombin III (activity, concentration), Protein C, Protein S

Specific Proteins

Frequency	Monthly or quarterly
Evaluation	Quantitative
Product codes	MSQUALITYPS · MSQSPS12
Parameters	Antistreptolysin O, C3, C4, CRP, IgA, IgG, IgM, Rheumatoid factor, Transferrin

Cardiac Markers

Frequency	Monthly or quarterly
Evaluation	Quantitative
Product codes	MSQUALITYPC
Parameters	BNP, NT-proBNP, CK-MB, Troponin I, Troponin T, Myoglobin, D-dimer, Homocysteine, hs-CRP, Procalcitonin

Serum Protein Electrophoresis

Frequency	Monthly or quarterly
Evaluation	Quantitative
Product codes	MSQUALITYEF · MSQSE12
Parameters	Albumin, Alpha-1 globulin, Alpha-2 globulin, Beta globulin, Gamma globulin

HbA1c

Frequency	Monthly or quarterly
Evaluation	Quantitative
Product codes	MSQUALITYH
Parameters	HbA1c

Serology

Frequency	Quarterly
Evaluation	Qualitative (positive / negative / doubtful)
Product codes	MSQUALITYS
Parameters	Chlamydia IgG, IgM · Cytomegalovirus IgG, IgM · Epstein-Barr VCA IgG, IgM · HAV IgG, IgM · HBcAb, HBcAb IgM, HBcAg, HBeAb, HBeAg, HBsAb, HBsAg · HCV · H. pylori IgG · Herpes simplex I IgG, II IgG · HIV, HIV 1-2 · Rubella IgG, IgM · Syphilis IgG, IgM · Toxoplasma IgG, IgM · Treponema IgG, IgM

Urine

Frequency	Quarterly
Evaluation	Quantitative
Product codes	MSQUALITYU
Parameters	Albumin, Ascorbic acid, Bilirubin, Blood, Glucose, Ketones, Leukocytes, Microalbumin, Nitrites, pH, Protein, Specific gravity, Urobilinogen

Urinary Sediment

Frequency	Quarterly

Evaluation	Qualitative
Product codes	MSQUALITYSU
Parameters	Red blood cells, white blood cells, casts, crystals, cellular elements

Drugs of Abuse

Frequency	Quarterly
Evaluation	Quantitative
Product codes	MSQUALITYD
Parameters	Amphetamine, Amphetamine/Methamphetamine, Barbiturates, Benzodiazepines, Buprenorphine, Cannabinoids, Cocaine, Ecstasy, Methadone, Methamphetamine, Morphine, Opiates

Faecal Occult Blood

Frequency	Quarterly
Evaluation	Quantitative
Product codes	MSQUALITYSO
Parameters	Faecal occult blood (FOB)

ESR

Frequency	Quarterly
Evaluation	Quantitative
Product codes	MSQUALITYVES
Parameters	ESR 1st hour, ESR 2nd hour, K index

Blood Smear

Frequency	Quarterly
Evaluation	Qualitative
Product codes	MSQUALITYSE
Parameters	Evaluation of the blood smear

Bacteriology

Frequency	Quarterly
Evaluation	Qualitative
Product codes	MSQUALITYB
Parameters	Identification of bacterial strains representative of routine laboratory work

06 CONTACT

Join the Quality System programmes

Send us the schemes you are interested in, the frequency you prefer and the instruments you use. We will prepare your offer and take care of your enrolment.

Athanasios Tserpes

EQAS.GR

Email: info@eqas.gr

Phone: +30 6907 833 433

Web: www.eqas.gr