Acceptable differences

(criteria for the evaluation of quantitative results)

D_{max} = acceptable difference
C = comparability
T = traceability

Only the tests included in the long-term evaluation process are listed in this overview.
The supervisor of the EQA round is authorised to extend Dmax in justified cases (e.g. unexpected bias or dispersion, concentration near the limit of quantification, etc.).

Biochemistry

EQA programme Test		D_{max}
ABR: Acid-base Status and Electrolytes		
Potassium cation (ISE)		8 %
Glucose		15 %
Chloride anion (ISE)		7 %
Lactate		
to 1 mmol/L:		0,18 mmol/L
from 1 mmol/L:		18 %
pCO_2		12 %
pH		0,8 %
pO_2		
to 14 kPa:		25 %
14 to 17 kPa:		17 %
from 17 kPa:		12 %
Sodium cation (ISE)		5 %
Calcium cation (ISE)		
to 1 mmol/L:		0,1 mmol/L
from 1 mmol/L:		10 %
AKS: Basic Clinical Chemistry - Serum		
α-amylase	C	13 %
	T	15 %
α-amylase pancreatic		18 %
γ-globulin (elfo)		30 %
Albumin		10 %
Albumin (elpho)		15 %
ALP	C	14 %
	T	18 %
ALT	C	13 %
	T	15 %
AST	C	14 %
	T	15 %
Bilirubin total	C	20 %
	T	26 %
Bilirubin direct	C	20 %
	T	26 %
Total protein	C	8 %
	T	9 %
CK	C	17 %
	T	20 %
Potassium	C	6 %
	T	7 %
Inorganic phosphate	C	10 %
	T	15 %
gamma-GT	C	11 %
	T	21 %
Glucose	C	7 %
	T	8 %
Magnesium	C	11 %
	T	15 %
Chloride	C	7 %
	T	11 %
Cholesterol	C	8 %
	T	9 %
Cholinesterase		12 %
Creatinine	C	11 %
	T	13 %
Uric acid	C	10 %
	T	12 %
Lactate		15 %
LD	C	14 %
	T	18 %
Lipase		24 %
Lithium	C	12 %
	T	12 %
Urea	C	13 %
	T	15 %
Osmolality		5 %

EQA programme Test		D_{max}
Sodium	C	4 %
	T	5 %
Triacylglycerols	C	13 %
	T	18 %
Calcium	C	7 %
	T	8 %
Calcium ionised		10 %
Iron		15 %
ALB: Albumin in Urine		
ACR		24 %
Albumin		
to 30 mg/L:		30 %
from 30 mg/L:		21 %
Creatinine	C	16 %
	T	21 %
AM: Basic Clinical Chemistry - Urine		
Total protein		
to 0,1 g/L:		0,024 g/L
from 0,1 g/L:		24 %
Potassium		15 %
Inorganic phosphate		18 %
Glucose		22 %
Magnesium		20 %
Chloride		14 %
Creatinine	C	16 %
	T	21 %
Uric acid		23 %
Urea		17 %
Osmolality		4 %
pH		5 %
Sodium		11 %
Calcium		18 %
BIL: Bilirubin Neonatal		
Bilirubin total	C	18 %
	T	20 %
Bilirubin direct	C	18 %
	T	20 %
BM: Bone Markers		
25-hydroxyvitamin D		33 %
Osteocalcin		13 %
P1NP		20 %
Parathyrin biointact (PTH 1-84)		17 %
Parathyrin intact (PTH)		23 %
Collagen telopeptide CTx-β		17 %
CC: Cystatin C		
Cystatin C		23 %
CRP: C-Reactive Protein		
C-reactive protein		24 %
CRPP: C-Reactive Protein POCT		
C-reactive protein		24 %
CSFB: Cerebrospinal Fluid Analysis		
Albumin		23 %
Total protein		27 %
Glucose		18 %
IgA		32 %
IgG		24 %
IgM		31 %
Lactate		
to 0,8 mmol/L:		27 %
from 0,8 mmol/L:		20 %
CSFK: Cerebrospinal Fluid Diagnostics		
Albumin		23 %
Glucose		18 %
IgA		32 %
IgG		24 %
IgM		31 %

EQA programme Test		D_{max}
Lactate		
to 0,8 mmol/L:		27 %
from 0,8 mmol/L:		20 %
E1: Hormones 1		
17-OH-progesterone		
to 6 nmol/L:	C	1,98 nmol/L
	T	2,64 nmol/L
from 6 nmol/L:	C	33 %
	T	44 %
Aldosterone	C	29 %
	T	38 %
DHEA-S		21 %
17-beta-estradiol		
to 200 pmol/L:	C	44 pmol/L
	T	60 pmol/L
from 200 pmol/L:	C	22 %
	T	30 %
Ferritin		
to 70 µg/L:		16,8 µg/L
from 70 µg/L:		24 %
Cortisol	C	16 %
	T	22 %
Progesterone	C	20 %
	T	26 %
Total T3		
to 1,5 nmol/L:	C	0,285 nmol/L
	T	0,36 nmol/L
from 1,5 nmol/L:	C	19 %
	T	24 %
Free T3		
to 4 pmol/L:		0,6 pmol/L
from 4 pmol/L:		15 %
Total T4	C	17 %
	T	21 %
Free T4		13 %
Testosterone	C	22 %
	T	30 %
TSH		14 %
E2: Hormones 2		
C-peptide		20 %
Ferritin		
to 70 µg/L:		16,8 µg/L
from 70 µg/L:		24 %
FSH		15 %
hGH		
to 8,1 mU/L:		1,54 mU/L
from 8,1 mU/L:		19 %
IGF-1		22 %
IGF-BP3		20 %
Insulin		20 %
Folate		
to 5 nmol/L:		1,35 nmol/L
from 5 nmol/L:		27 %
LH		15 %
Parathyrin biointact (PTH 1-84)		
to 1,2 pmol/L:		0,276 pmol/L
from 1,2 pmol/L:		23 %
Parathyrin intact (PTH)		
to 1,2 pmol/L:		0,276 pmol/L
from 1,2 pmol/L:		23 %
Prolactin		
to 110 mU/L:		17,6 mU/L
from 110 mU/L:		16 %
Renin		20 %
SHBG		20 %
Vitamin B_{12}		20 %
FOB: Faecal Occult Blood		
Haemoglobin		25 %

Acceptable differences

(criteria for the evaluation of quantitative results)

EQA programme Test		D_{max}
GHP: Glycated Haemoglobin POCT		
Haemoglobin A_{1c}	C	10 %
	T	11 %
GLC: Glucose (including glucometers)		
Glucose (laboratory systems)	C	10 %
	T	15 %
Glucose (Abbott POCT)		
to 5,55 mmol/L:		0,833 mmol/L
from 5,55 mmol/L:		15 %
Glucose (ACON POCT)		
to 5,55 mmol/L:		0,833 mmol/L
from 5,55 mmol/L:		15 %
Glucose (Arkray POCT)		
to 5,55 mmol/L:		0,833 mmol/L
from 5,55 mmol/L:		15 %
Glucose (Ascensia POCT)		
to 5,55 mmol/L:		0,833 mmol/L
from 5,55 mmol/L:		15 %
Glucose (ForaCare POCT)		
to 5,55 mmol/L:		0,833 mmol/L
from 5,55 mmol/L:		15 %
Glucose (Infopia POCT)		
to 5,55 mmol/L:		0,833 mmol/L
from 5,55 mmol/L:		15 %
Glucose (LifeScan POCT)		
to 5,55 mmol/L:		0,833 mmol/L
from 5,55 mmol/L:		15 %
Glucose (MED TRUST POCT)		
to 5,55 mmol/L:		0,833 mmol/L
from 5,55 mmol/L:		15 %
Glucose (Nova POCT)		
to 5,55 mmol/L:		0,833 mmol/L
from 5,55 mmol/L:		15 %
Glucose (Roche POCT)		
to 5,55 mmol/L:		0,833 mmol/L
from 5,55 mmol/L:		15 %
HIL: Serum Indices		
Hemolytic index (quantitative)		20 %
Icteric index (quantitative)		20 %
Lipemic index (quantitative)		20 %
KD: Glycated Haemoglobin		
Haemoglobin A_{1c}	C	10 %
	T	11 %
KM: Cardiac Markers		
CK-MB mass		27 %
Homocysteine		20 %
Myoglobin		22 %
NT-proBNP		27 %
Troponin I		
to 10 ng/L:		2,7 ng/L
from 10 ng/L:		27 %
Troponin T		22 %
BNP		30 %
RFA: Risk Factors for Atherosclerosis		
Apolipoprotein AI		17 %
Apolipoprotein B		14 %
Cholesterol		8 %
Cholesterol HDL		15 %
Cholesterol LDL (direct determination)		20 %
Cholesterol LDL (calculation)		15 %
Lipoprotein (a) [g/L]		25 %
Lipoprotein (a) [nmol/L]		20 %
Triacylglycerols		15 %
TDM: Therapeutic Drugs		
Digoxin	C	30 %
	T	36 %
Ethosuximide		24 %
Phenobarbital		20 %
Phenytoin		20 %
Carbamazepin		20 %
Valproic acid		20 %
Lithium	C	12 %
	T	12 %
Primidone		24 %
Theophylline	C	19 %
	T	24 %
Amicacin		20 %
Gentamicin		31 %
Methotrexate		30 %
Vankomycin		28 %
TE: Trace Elements		
Al - plasma		25 %
Co - plasma		25 %
Cr - plasma		25 %
Cu - plasma		25 %
Mg - plasma		25 %
Mn - plasma		25 %
Se - plasma		25 %
Zn - plasma		25 %
Cd - blood		25 %
Hg - blood		25 %
Mn - blood		25 %
Pb - blood		25 %
Al - urine		25 %
Cd - urine		25 %
Cr - urine		25 %
Cu - urine		25 %
Hg - urine		25 %
I - urine		25 %
Mn - urine		25 %
Ni - urine		25 %
Pb - urine		25 %
Se - urine		25 %
Zn - urine		25 %
TM: Tumour Markers		
β-2-microglobulin		21 %
AFP		
to 10 µg/L:		2 µg/L
from 10 µg/L:		20 %
CA 15-3		18 %
CA 19-9		
to 14 kU/L:		2,8 kU/L
from 14 kU/L:		20 %
CA 72-4		22 %
CA 125		
to 10 kU/L:		2 kU/L
from 10 kU/L:		20 %
CEA		16 %
CYFRA 21-1		
to 1,3 µg/L:		0,234 µg/L
from 1,3 µg/L:		18 %
hCG		
to 8 U/L:		1,44 U/L
from 8 U/L:		18 %
Calcitonin		31 %
NSE		
to 3 µg/L:		0,9 µg/L
from 3 µg/L:		30 %
PSA		
to 0,7 µg/L:		0,105 µg/L
from 0,7 µg/L:		15 %
p2PSA		15 %
free-PSA		
to 0,7 µg/L:		0,112 µg/L
from 0,7 µg/L:		16 %
S-100		
to 0,04 µg/L:		0,013 µg/L
from 0,04 µg/L:		32 %
SCCA		
to 0,8 µg/L:		55 %
from 0,8 µg/L:		32 %
TPA		
to 50 U/L:		12,5 U/L
from 50 U/L:		25 %
Thyreoglobulin		30 %
VVV: Maternal Diagnostic Screening (Triple Test)		
free β-hCG		15 %
PAPP-A		
to 0,1 U/L:		0,015 U/L
from 0,1 U/L:		15 %
PlGF		23 %
AFP		20 %
hCG		18 %
Estriol unconjug.		33 %

(criteria for the evaluation of quantitative results)

EQA programme Test	D_{max}
Haematology	
AP: Antithrombotic Agents	
Apixaban	25 %
Dabigatran	30 %
Rivaroxaban	25 %
DD: D Dimers	
D Dimers (FEU)	
to 0,7 mg/L FEU:	0,189 mg/L FEU
from 0,7 mg/L FEU:	27 %
D Dimers (DDim)	
to 0,3 mg/L D Dimer:	0,081 mg/L D Dimer
from 0,3 mg/L D Dimer:	27 %
HKG: Haemocoagulation Tests	
Antithrombin	
to 50 %:	25 %
from 50 %:	18 %
APTT - ratio	20 %
Fibrinogen	25 %
Prothrombin test (INR)	20 %
Prothrombin test (ratio)	20 %
Thrombin time (time)	15 %
Thrombin time (ratio)	20 %
HS: Haemocoagulation Special	
Factor VIII	
to 5 %:	1,25 %
from 5 %:	25 %
von Willebrand f. (activity)	25 %
von Willebrand f. (antigen)	20 %
Factor IX	
to 5 %:	1,25 %
from 5 %:	25 %
Factor XI	25 %
Factor XII	
to 5 %:	1,25 %
from 5 %:	25 %
Protein C	20 %
Protein S	
to 10 %:	3 %
from 10 %:	30 %
ProC Global (norm. ratio)	25 %
Factor II	25 %
Factor V	25 %
Factor VII	25 %
Factor X	25 %
INRP: INR measurement on POCT	
Prothrombin test (CoaguChek)	20 %
Prothrombin test (microINR)	20 %
Prothrombin test (Xprecia)	20 %
KO: Blood Count	
WBC	
to 4 $\cdot 10^9$/L:	18 %
from 4 $\cdot 10^9$/L:	15 %
RBC	7 %
Haemoglobin	6 %
HCT	10 %
MCV	10 %
RDW	10 %
Platelets	18 %
MPV	18 %
PDW [%]	15 %
PDW [fL]	15 %
PDW [-]	15 %
Neutrophiles	25 %
Lymphocytes	25 %
Monocytes	50 %
Eosinophils	50 %
Basophiles	100 %
LMWH: Low Molecular Weight Heparin	
Low Molecular Weight Heparin	25 %
RET: Reticulocytes	
Reticulocyte count (analyser)	40 %
Reticulocyte count (microscope)	45 %
Immature reticulocyte fraction	45 %
Mean amount of hemoglobin in reticulocytes	10 %
Mean reticulocyte volume	10 %
SED: Erythrocyte Sedimentation Rate	
Erythrocyte sedimentation (1 h)	
to 10 mm/1hour:	5 mm/1hour
from 10 mm/1hour:	50 %
Erythrocyte sedimentation (2 h)	
to 10 mm/2hours:	5 mm/2hours
from 10 mm/2hours:	50 %
Immunology	
CD34: Population of CD34+ Cells	
CD 34+ (absolute count)	
to 5 count/µL:	1,25 count/µL
from 5 count/µL:	25 %
CD 34+ (relative count)	
to 0,1 %:	0,025 %
from 0,1 %:	25 %
WBC	15 %
GP: Detection of Monoclonal Components	
Total protein (plasma)	8 %
Index kappa/lambda	25 %
Total protein (urine)	30 %
IFT: Immunophenotypisation	
B lymphocytes	
to 1 %:	100 %
from 1 %:	30 %
NK cells	26 %
T lymphocytes (CD3+)	7 %
Th lymphocytes (CD4+)	10 %
T lymphocytes (CD8+)	17 %
PIG: IgG subclasses	
IgG total	15 %
IgG1	15 %
IgG2	15 %
IgG3	19 %
IgG4	21 %
PRO: Specific Proteins	
α-1-antitrypsin	25 %
α-2-macroglobulin	21 %
Albumin	10 %
C3 complement	14 %
C4 complement	21 %
Total protein	18 %
Ceruloplasmin	19 %
Haptoglobin	13 %
IgA	14 %
IgG	13 %
IgM	18 %
Orosomucoid	20 %
Prealbumin	17 %
Soluble Transferrin Receptor (sTfR)	20 %
Transferrin	12 %
RF: Diagnostics of Rheumatoid Arthritis and ASLO	
anti-streptolysin O (ASLO)	20 %
TIE: Allergy Control Scheme (Total IgE)	
Total IgE	25 %