

**Uncertainties of quantitative measurements for the tests carried out at the laboratory. GULBENE**

Tests	Units of measurement	2013			2014			2015			2016			2017			Target CV	Admissible total CV
		Low numbers	Average numbers	High numbers	Low numbers	Average numbers	High numbers	Low numbers	Average numbers	High numbers	Low numbers	Average numbers	High numbers	Low numbers	Average numbers	High numbers		
		CV%	CV%	CV%	CV%	CV%	CV%	CV%	CV%	CV%	CV%	CV%	CV%	CV%	CV%	CV%		
Progesterone		8.7	5.7		8.85	5.62			7.7	5.1		9,01	4,44		8,2	5,37	10.6	<b>20.0</b>
Testosterone		10.4	6.9		9.15	8.72			10.5	8.9		8,25	6,84				4.7	<b>14.0</b>
LH		4.6	4.5		4.72	5.51			4.9	4.6							7.3	<b>27.9</b>
Parathormons	pg/ml	6.3	6.6		5.82	5.08			5.8	5.1		5,89	4,67		5,68	4,95	8.4	<b>30.2</b>
Ferritins	ng/ml	6.4	7.3		6.25	7.65			5.8	7.5		4,77	5,87		4,83	5,96	7.5	<b>17.3</b>
FSH		3.3	3.1		3.43	4.09			4.6	4.0							4.4	<b>12.2</b>
PSA	ng/ml	4.4	4.6		4.33	5.26			5.8	5.4		4,69	3,79		5,03	4,38	7.0	<b>33.6</b>
IgE total	U/ml	6.2	6.5		5.90	6.24			5.7	7.2		6,4	6,98		7,75	7,03	6.7	<b>15.0</b>
Free T4	pmol/l	4.1	3.7		5.11	3.88			4.9	3.4		4,03	2,79		3,98	3	7.7	<b>9.9</b>
Estradiol	pg/ml	7.8	6.7		7.83	5.62			7.7	6.3							11.0	<b>26.9</b>
T4	nmol/l																2.5	<b>7.0</b>
TSH	mU/L	4.5	4.8		6.65	6.52						4,48	4,69		5,7	6,17	9.7	<b>22.8</b>
T3	nmol/l																4.4	<b>12.0</b>
C peptide	ng/ml	6.6	7.8		7.11	7.04			10.2	7.8							4.8	<b>20.8</b>
Free T3	pmol/l	8.1	5.6														4.0	<b>15.0</b>
AV against tireoperoxidase	U/ml	7.6	7.8		10.9	8.62			7.6	7.0							8.15	<b>46.2</b>
Frees PSA	ng/ml	4.0	4.1		4.93	4.83			6.2	5.3							9.0	<b>33.6</b>
HCG	mU/ml		5.7	4.1	5.47	5.03			6.2	5.9		5,17	4,54		6,89	5,87	7.4	<b>20.0</b>
ALAT	U/L		1.5	2.9		1.0	1.7		1.1	2.9		1,13	2,91		0,96	2,34	1.9	<b>32.1</b>
ASAT	U/L		0.7	0.9		1.3	0.7		1.0	1.3		0,77	1,12		1,16	0,89	1.7	<b>15.2</b>
KFK	U/L		0.6	1.0		0.9	1.2		0.6	0.9							2.0	<b>30.3</b>
KFK MB fraction	U/L		1.5	0.8		1.1	1.6		2.0	1.6							2.8	<b>31.2</b>
LDH	U/L		1.0	1.1		0.7	1.2		0.9	1.5		0,98	1,42		1,15	1,46	1.1	<b>11.4</b>
Alkaline phosphatase	U/L		2.9	1.0		3.2	2.8		5.1	1.0		3,96	1,16		3,92	2,63	2.8	<b>11.7</b>
Gamma GT	U/L		0.9	0.7		0.5	1.3		0.9	0.8					1,64	1,31	1.8	<b>22.2</b>
Alpha amylase	U/L		0.9	0.8		0.7	0.9		1.3	0.9		0,83	0,92		1,71	1,81	1.4	<b>14.6</b>
Creatinine	μmol/l		0.9	1.7		1.4	1.1		1.1	1.8		0,94	1,47		1,15	1,85	3.1	<b>8.2</b>
Ethanol	g/l		0.7	1.4		2.7	1.1		3.5	1.4							1.7	<b>4.8</b>
Albumin	g/l		1.0	0.9		0.9	0.7		0.6	0.7		1,14	1,42		2,1	1,9	2.6	<b>3.9</b>

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		CV%	CV%	CV%	CV%	CV%	CV%	CV%	CV%	CV%	CV%	CV%	CV%	CV%	CV%	CV%		
Albumin in urine	mg/l					4.5	10.1		7.8	3.6		7,54	3,34		6,34	4,93	2.2	<b>46.0</b>
Protein in urine	mg/dl		5.0	4.7		4.0	6.0		3.0	2.2		3,97	1,99		6,41	4,98	17.8	<b>40.0</b>
Urea	mmol/l		1.9	1.6		1.6	1.6		1.5	1.3		1,34	1,19		1,43	0,94	3.9	<b>15.7</b>
LDL cholesterol	mmol/l		1.6	0.7		1.3	1.4		1.8	1.5		2,77	2,34		1,93	4,1	1.9	<b>13.6</b>
HDL cholesterol	mmol/l		1.1	1.1		1.7	1.5		1.6	1.6		2,29	1,97		1,21	1,03	1.1	<b>11.1</b>
Glucose	mmol/l		1.4	0.6		1.2	1.2		1.0	0.7		2,64	0,68		2,97	0,63	1.4	<b>6.9</b>
Iron	µmol/l		1.4	0.8		1.4	1.2		2.2	2.3		1,42	1,48		2,18	1,64	2.3	<b>30.7</b>
Bilirubin total	µmol/l		2.2	0.5		3.1	1.3		1.5	2.3		1,43	1,44		1,34	2,01	4.7	<b>31.1</b>
Protein total	g/l		1.5	3.0		1.0	2.0		0.9	1.2		1,06	1,61		2,15	1,94	2.2	<b>3.4</b>
Uric acid	µmol/l		1.3	1.0		0.8	0.7		0.4	0.5		1,19	1,08		0,63	0,85	1.7	<b>8.0</b>
Phosphorus	mmol/l		0.6	0.8		1.0	1.0		0.6	0.7		1,38	0,78		0,94	0,73	2.5	<b>7.8</b>
Calcium	mmol/l		0.8	1.2		0.7	0.8		0.5	0.6		0,43	0,67		0,43	0,84	2.9	<b>2.4</b>
Calcium in urine	mmol/24h								0.5	0.9		0,58	0,64		1,18	0,94	2.5	<b>34.2</b>
ASO	vien.		2.0	0.8		1.3	0.8		1.1	0.9		1,02	1,04		1,23	1,73	5.3	<b>20.0</b>
CRO	mg/dl		2.4	1.6		2.2	1.3		3.8	2.3		4,12	3,24		3,81	2,34	2.9	<b>56.6</b>
RF	U/ml		3.9	2.0		3.5	2.4		1.4	1.3		4,9	2,85		2,12	1,36	4.4	<b>13.5</b>
Glycosylated Hb	%		1.2	1.0		3.0	2.6		1.9	2.3		2,5	2,65		2,39	2,55	1.3	<b>4.3</b>
Cholesterol	mmol/l		0.4	0.5		0.7	0.5		1.1	1.1		1,1	0,9		0,83	0,53	1.9	<b>8.5</b>
Triglycerides	mmol/l		0.9	1.0		0.4	0.6		0.7	0.8		0,71	0,71		1,61	1,94	1.9	<b>27.9</b>
Magnesium	mmol/l		0.7	1.4		0.6	0.7		1.4	1.3							2.9	<b>4.8</b>
Sodium	mmol/l		1.3	0.9		1.4	1.6		0.8	1.5		0,62	0,84		0,57	0,39	0.6	<b>0.9</b>
Calcium	mmol/l		1.4	1.2		2.0	0.8		0.8	1.2		0,61	0,72		0,74	0,71	2.4	<b>5.8</b>
Chlorine	mmol/l		1.5	1.8		1.2	1.3		0.9	0.9		2,1	1,05		2,85	0,91	1.5	<b>1.5</b>
Erythrocytes	x10 <sup>12</sup> /l	1.2	1.1	1.2	0.98	0.85	0.84	0.9	0.8	0.8	0.8	0.9	0.8	0.7	0.8	0.9	1.6	<b>4.4</b>
Hemoglobin	g/l	1.8	0.8	0.8	0.86	0.89	1.03	0.8	0.8	0.5	0.6	0.6	0.6	0.6	0.9	0.7	1.4	<b>4.1</b>
Hematocrit	%	4.4	1.2	1.2	1.31	1.24	0.98	1.3	1.3	1.2	1.2	1.4	1.2	1.1	1.4	1.2	1.4	<b>4.1</b>
Er. volume (MCV)	fl	0.7	0.6	0.6	0.86	0.84	0.42	0.7	0.8	0.8	0.8	0.8	0.7	0.7	0.8	0.6	0.7	<b>2.3</b>
Aver.Hb conc.Er (MCH)	pg	1.2	1.4	1.1	0.84	0.83	0.60	0.7	1.0	0.9	0.8	1.1	0.9	1.2	1	0.9	0.8	<b>2.7</b>
Aver. Hb conc. (MCHC)	g/l	1.4	1.2	1.4	1.07	1.34	0.67	1.0	1.3	1.1	1.4	1.3	1.2	1.1	1.3	1.2	0.9	<b>2.2</b>
Thrombocytes	x10 <sup>9</sup> /l	3.0	4.6	2.3	2.92	6.0	1.95	2.3	7.5	1.5	2,15	7,2	1,5	2,3	7,3	1,4	4.6	<b>13.4</b>
Leukocytes	x10 <sup>9</sup> /l	2.0	3.1	1.9	2.39	3.56	2.88	1.6	2.0	1.0	1,3	1,9	0,9	1,5	1,8	1,2	5.5	<b>14.6</b>
Lymphocytes	%	2.3	2.8	2.3				3.4	3.9	3.9	2,8	3,4	4,1	3,9	4,6	3,8	5.2	<b>16.0</b>
Eosinophilic	%	7.2	9.7	5.1				7.4	7.7	7.2	7,4	7,6	7,1	8,3	6,5	8,1	10.5	<b>37.1</b>

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		CV%	CV%	CV%	CV%	CV%	CV%	CV%	CV%	CV%	CV%	CV%	CV%	CV%	CV%	CV%		
Basophilic	%	1.6	1.8	0.9				2.6	3.3	2.4	2,6	3,9	2,5	2,6	3,8	2,5	14.0	<b>38.5</b>
Neutrophilic	%	1.3	2.3	0.9	1.38	2.86	0.78	2.2	2.7	1.9	2,3	2,6	1,9	2,3	3,2	2,1	8.1	<b>22.4</b>
Monocytes	%							7.4	9.3	7.5	7,4	8,7	9,7	7,9	9,3	8,8	8.9	<b>27.9</b>
Prothrombin	%		5.3	1.9		6.3	3.7		5.2	4.2		6,8	4		5,6	4,3	3.5	<b>5.3</b>
APTL	sek		1.5	1.9		3.3	3.0		2.8	2.9		4,7	3,5		4,5	3,8	2.8	<b>4.5</b>
Fibrinogen	g/l								4.6			6,7			7,9		7.2	<b>13.6</b>
Bilirubin direct	μmol/l		1.9	2.0		3.1	1.3		2.1	1.2		1,32	1,29		1,34	2,01	7.7	<b>44.5</b>
Phosphorus n urine	mmol/24h								1.7	0.8		1,38	1,42		1,98	1,69		

\* Permissible uncertainties are indicated in the international inter-laboratory comparative testing programmes: Lab quality (Finland), UK NEQAS (Britain), CLIA (US) requirements for analytical quality.