

Analysis	Quantity/Material	Pre-analytics/Notes	Reference range	Frequency Test duration	Method
Alkaline phosphatase (AP) ⁺	1 ml serum		46 – 116 U/l	daily Mon. - Fri.	UV / VIS Photometry
ALT		see GPT			
AMA-M2 (IgG) ⁺	1 ml serum		not detectable	daily Mon. - Fri.	ELISA
ANA (Screen) ⁺	1 ml serum		not detectable	daily Mon. - Fri.	ELISA
Annexin V antibodies (IgG) ⁺	1 ml serum		<5 U/ml	daily Mon. - Fri.	ELISA
Annexin V antibodies (IgM) ⁺	1 ml serum		<5 U/ml	daily Mon. - Fri.	ELISA
Antibody screening test Erythrocyte antibodies	7 ml EDTA blood		negative	daily Mon. - Fri.	Gel card
AST		see GOT			
Bilirubin (total) ⁺	1 ml serum	Sensitive to light! Protect against daylight and artificial light.	0,2 – 1 mg/dl	daily Mon. - Fri.	UV / VIS Photometry
Blood count, large ⁺ (differential blood count automated)	5 ml EDTA blood		see report	daily Mon. - Fri.	automated
Blood count, small ⁺ (blood count automated)	5 ml EDTA blood		see report	daily Mon. - Fri.	automated
Blood group ABO Rh system antibody screening test	7 ml EDTA blood			daily Mon. - Fri.	Gel card
Blood sedimentation rate ⁺	3.5 ml citrate blood in S-Sedivette (Sarstedt) or 2 ml citrate blood in S-Monovette BSG (Sarstedt)	Mix blood sample thoroughly immediately after collection. The measurement should start no later than 4-6 hours after the blood sample has been taken.	Women ≤ 50 y.: < 20 mm/h > 50 y.: < 30 mm/h Men ≤ 50 y.: < 15 mm/h > 50 y.: < 20 mm/h	2-3 hours	
C-reactive protein		see CRP			
CA 15-3 ⁺	1 ml serum		≤ 31 U/ml	Tues. and Thurs.	CMIA

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CA 19-9 ⁺	1 ml serum		≤ 37 U/ml	Tues. and Thurs.	CMIA
Calcium ⁺	1 ml serum		2,12 – 2,52 mmol/l	daily Mon. - Fri.	UV / VIS Photometry
CEA ⁺	1 ml serum		≤ 5 ng/ml	Tues. and Thurs.	CMIA
Cholesterol ⁺	1 ml serum		< 200 mg/dl (desirable) 200 - 239 mg/dl (upper limit range) ≥ 240 mg/dl (high)	daily Mon. - Fri.	UV / VIS Photometry
Chorionic gonadotropin		see hCG/β-hCG			
Coombs test, indirect	5 ml EDTA blood		negative	daily Mon. - Fri.	Gel card
Creatinine ⁺ (enzymatic)	1 ml serum		0,51 – 1,17 mg/dl	daily Mon. - Fri.	UV / VIS Photometry
CRP ⁺	1 ml serum		< 3 mg/l	daily Mon. - Fri.	PETIA
dsDNA ⁺	1 ml serum		not detectable	daily Mon. - Fri.	ELISA
Estradiol (E2) ⁺	1 ml serum		Men: 11 - 44 pg/ml Women: Follicular phase: 21 - 251pg/ml Cycle center: 38 - 649 pg/ml Luteal phase: 21 - 312 pg/ml Postmenopause without hormone therapy: 10 - 28 pg/ml Postmenopause with hormone therapy: 10 - 144 pg/ml	Tues. and Thurs.	CMIA
Ferritin ⁺	1 ml serum		Men: 21,8 - 274,7 ng/ml Women: 4,6 - 204 ng/ml	daily Mon. - Fri.	CMIA
Folate ⁺	1 ml serum	Centrifuge blood after collection, freeze serum, send frozen, avoid hemolysis	3,1 - 20,5 ng/ml	daily Mon. - Fri.	CMIA

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Free light chains ⁺	1 ml serum	in monoclonal gammopathy: follow-up in serum recommended	kappa light chains, free: 3.3 - 19.4 mg/l lambda light chains, free: 5.7-26.3 mg/l kappa/lambda quotient: 0,26-1,65	Thus.	Nephelometry
FSH ⁺ (Follicle-stimulating hormone)	1 ml serum		Men: 0.95 - 11.95 mIU/ml Women: Follicular phase: 3.03 - 8.08 mIU/ml Cycle center: 2.55 - 16.69 mIU/ml Luteal phase: 1.38 - 5.47 mIU/ml Postmenopause: 26,72 - 133,41 mIU/ml	Tues. and Thurs.	CMIA
FT3 ⁺ (Free triiodothyronine)	1 ml serum		1,7 - 3,7 pg/ml	Tues. and Thurs.	CMIA
FT4 ⁺ (Free thyroxine)	1 ml serum		9 - 19 pmol/l	Tues. and Thurs.	CMIA
GGT ⁺	1 ml serum		Men: 15 – 85 U/l Women: 5 – 55 U/l	daily Mon. - Fri.	UV / VIS Photometry
Glucose ⁺	1 ml sodium fluoride plasma	To determine a correct glucose value, the measurement of glucose in sodium fluoride citrate plasma (GlucoEXACT tube with light grey cap) is recommended; sodium fluoride in combination with citrate inhibits glycolysis and thus the degradation of glucose.	74 – 106 mg/dl	daily Mon. - Fri.	UV / VIS Photometry
Glucose ⁺	1 ml serum	To determine a correct glucose value, the measurement of glucose in sodium fluoride citrate plasma (GlucoEXACT tube with light grey cap) is recommended; sodium fluoride in combination with citrate inhibits glycolysis and thus the degradation of glucose.	74 – 106 mg/dl	daily Mon. - Fri.	UV / VIS Photometry
GOT (AST) ⁺	1 ml serum		15 – 37 U/l	daily Mon. - Fri.	UV / VIS Photometry
GPT (ALT) ⁺	1 ml serum		Men: 16 – 63 U/l Women: 14 – 59 U/l	daily Mon. - Fri.	UV / VIS Photometry

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hCG/ β -hCG (Human Chorionic Gonadotropin) ⁺	1 ml serum	Specification of the pregnancy week or suspected diagnosis required	see report	daily Mon. - Fri.	CMIA
HDL ⁺	1 ml serum	Blood collection after 12 hours of dietary leave.	Men: > 40 mg/dl Women: > 45 mg/dl	daily Mon. - Fri.	UV / VIS Photometry
Homocysteine ⁺	0.5 ml heparin sodium fluoride plasma		Men: 5,46 - 16,2 μ mol/l Women: 4,44 - 13,56 μ mol/l	Tues. and Thurs.	CMIA
Immunophenotyping ⁺ (leukemia, lymphoma, PNH)	min. 2 ml EDTA or heparin blood	Limited stability of the sample, store at room temperature, send sample immediately, submission: Monday to Thursday	Interpretation see report	daily Mon. - Fri.	Flow cytometry
Immunophenotyping ⁺ (leukemia, lymphoma)	min. 2 ml EDTA or heparin bone marrow	Limited stability of the sample, store at room temperature, send sample immediately, submission: Monday to Thursday	Interpretation see report	daily Mon. - Fri.	Flow cytometry
Immunophenotyping ⁺ (lymphoma)	rice grain-sized lymph node biopsy	Limited stability of the sample, store at room temperature, send sample immediately, submission: Monday to Thursday	Interpretation see report	daily Mon. - Fri.	Flow cytometry
Immunophenotyping ⁺ (leukemia, lymphoma)	min. 10 ml bronchial lavage	Limited stability of the sample, store at room temperature, send sample immediately, submission: Monday to Thursday	Interpretation see report	daily Mon. - Fri.	Flow cytometry
Iron ⁺	1 ml serum		Men: 65 – 175 μ g/dl Women: 50 – 170 μ g/dl	daily Mon. - Fri.	UV / VIS Photometry
Kell antigen	5 ml EDTA blood			daily Mon. - Fri.	Gel card

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LDH ⁺	1 ml serum	Do not freeze or expose to lower temperatures! Phlebotomies must be performed with special care to prevent hemolysis (increased LDH concentration in erythrocytes).	85 – 227 U/l	daily Mon. - Fri.	UV / VIS Photometry
LDL ⁺	1 ml serum	Blood collection after 12 hours of dietary leave.	< 100 mg/dl	daily Mon. - Fri.	UV / VIS Photometry
LH (Luteinizing hormone) ⁺	1 ml serum		Men: 0.57 - 12.07 mIU/ml Women: Follicular phase: 1.80 - 11.78 mIU/ml Cycle center: 7.59 - 89.08 mIU/ml Luteal phase: 0.56 - 14.0 mIU/ml Postmenopause without hormone therapy: 5.16 - 61.99 mIU/ml	Tues. and Thurs.	CMIA
Lipoprotein (a) ⁺ (Lp(a))	1 ml serum		< 30 mg/dl	daily Mon. - Fri.	Nephelometry
Lymphocyte differentiation ⁺ (CD3, CD4, CD8, CD16, CD 56, CD19)	5 ml EDTA blood	Limited stability of the sample, store at room temperature, send sample immediately, submission: Monday to Thursday	Interpretation see report	daily Mon. - Fri.	Flow cytometry
Lymphocyte differentiation ⁺ (Sarcoidosis)	min. 10 ml bronchial lavage	Limited stability of the sample, store at room temperature, send sample immediately, submission: Monday to Thursday	Interpretation see report	daily Mon. - Fri.	Flow cytometry
Monocytes ⁺	3 ml EDTA blood		regardless of age 3 - 9 % up to 7 days 6 - 13 % up to 6 months 5 - 16 % up to 2 years 4 - 11% up to 16 years 4 - 9 %	daily Mon. - Fri.	automated
Neutrophils ⁺	3 ml EDTA blood		regardless of age 45 – 75 % up to 7 days 18 - 58% up to 6 months 14 - 54% up to 2 years 21 - 67% up to 6 years 30 - 74% up to 16 years 36 - 77%	daily Mon. - Fri.	automated

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Potassium ⁺	1 ml serum		3,6 – 5,5 mmol/l	daily Mon. - Fri.	Potentiometry with ion-selective electrodes
Progesterone ⁺	1 ml serum		Men: 0.1 - 0.2 ng / ml Women: Follicular phase: 0.1-0.3 ng / ml Luteal phase: 1.2 - 15.9 ng / ml Postmenopause: 0.1 - 0.2 ng / ml Pregnancy: 1st trimester: 2.8-147.3 ng / ml 2nd trimester: 22.5 - 95.3 ng / ml 3rd trimester: 27.9 - 242.5 ng / ml	Tues. and Thurs.	CMIA
Protein (total) ⁺	1 ml serum		64 – 82 g/l	daily Mon. - Fri.	UV / VIS Photometry
Prothrombin antibodies (IgA) ⁺	1 ml serum		not detectable	daily Mon. - Fri.	ELISA
Prothrombin antibodies (IgG) ⁺	1 ml serum		not detectable	daily Mon. - Fri.	ELISA
Prothrombin antibodies (IgM) ⁺	1 ml serum		not detectable	daily Mon. - Fri.	ELISA
PSA (prostate specific antigen) ⁺ (Total PSA)	1 ml serum	If PSA is in the extended grey range (PSA values between 4 and 10 ng/ml), the determination of the free PSA is carried out additionally and an interpretation aid is given by quotient formation.	< 4.0 ng/ml	Tues. and Thurs.	CMIA
Rheumatoid factor ⁺ (RF)	1 ml serum		< 15 U/ml	daily Mon. - Fri.	Nephelometry
Sodium ⁺	1 ml serum		133 – 146 mmol/l	daily Mon. - Fri.	Potentiometry with ion-selective electrodes
T3, free (FT3)		see FT3			
T4, free (FT4)		see FT4			

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Thrombin-Antithrombin complex (TAT) ⁺	5 ml citrate plasma	Centrifuge blood immediately after collection, freeze plasma and send frozen. Please send in a separate tube!	<2,0–4,2 µg/l	daily Mon. - Fri.	ELISA
Thrombocytes ⁺	3 ml EDTA blood		Adults: 130 - 430 / nl Children: up to 6 months 126 - 615 / nl up to 2 years 219 - 465 / nl up to 12 years 183 - 405 / nl up to 16 years 165 - 335 / nl	daily Mon. - Fri.	automated
Thrombocytes ⁺	3 ml citrate blood		Adults: 150 - 361 / nl Children: up to 7 days 220 - 490 /nl up to 30 days 230 - 520 /nl up to 2 years 237 - 535 /nl up to 6 years 200 - 461 /nl up to 12 years 187 - 405 /nl up to 18 years 175 - 386 /nl	daily Mon. - Fri.	automated
Thyroid peroxidase autoantibodies ⁺ (Anti-TPO)	1 ml serum		< 60 U/ml	Thus.	CMIA
Thyroxine, free (FT4)		see FT4			
Transferrin ⁺	1 ml serum		200 – 360 mg/dl	daily Mon. - Fri.	TIA
Triglycerides ⁺	1 ml serum	Do not use blood collection tube with glycerin coated stopper!	< 150 mg/dl (normal) 150 – 199 (upper limit range) 200 – 499 (high) ≥ 500 (very high)	daily Mon. - Fri.	UV / VIS Photometry
Triiodothyronine, free (FT3)		see FT3			
TSH (Thyroid-stimulating hormone) ⁺	1 ml serum		0,35 - 4,94 mIU/l	Tues. and Thurs.	CMIA
Uric acid ⁺	1 ml serum		Men: 3,5 – 7,2 mg/dl Women: 2,6 – 6,0 mg/dl	daily Mon. - Fri.	UV / VIS Photometry

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Urea nitrogen ⁺	1 ml serum		3 years: 11 - 36 mg/dl 13 years: 15 - 36 mg/dl 19 years: 18 - 45 mg/dl 50 years: 19 - 44 mg/dl (male) 50 years: 15 - 40 mg/dl (female) 120 years: 18 - 55 mg/dl (male) 120 years: 21 - 43 mg/dl (female)	daily Mon. - Fri.	UV / VIS Photometry
Vitamin B ₁₂ (Cyanocobalamin) ⁺	1 ml serum	Protect sample from light, limited stability of sample, send serum immediately, freeze if necessary.	200 – 1000 pg/ml	daily Mon. - Fri.	CMIA