

Annex to the accreditation certificate: N° 1/038 According to standard ISO 15189:2022 For a medical laboratory

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Accredited organisation:

BioneXt S.A. 2-4, rue du Château d'eau L-3364 Leudelange

The list of collection sites is available under the following link: <u>https://www.bionext.lu/en/centres</u>

Contact person:

Mme Aline TUESTA Tél. : +352 285 777 1 E-Mail : aline.tuesta@bionext.lu

Document approved by:

Olivier Wagner Operations Manager Monique Jacoby Accreditation manager



OLAS | Office Luxembourgeois d'Accréditation et de Surveillance Southlane Tower I · 1, avenue du Swing · L-4367 Belvaux · Luxembourg Tél : (+352) 247 743 60 · Fax : (+352) 247 943 60 · E-mail : olas@ilnas.etat.lu · **www.portail-qualite.lu**

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Medical Biology

Objects submitted for analysis	Characteristics or properties measured	Measurement principle and equipment	Analysis methods		
(e.g. products, materials, samples, matrices, equipment)		(e.g. manual or automatic measurement)	(e.g. published, adapted, checked internally)		
General Domain: MED	1 – Clinical Biochemis	try			
Technical Domain: ME	Technical Domain: MED1.1 – General Biochemistry				
	Antistreptolysin ASLO C-Reactive Protein (CRP) Hypersensitive C- Reactive Protein (CRPhs) Lipoprotein a	Turbidimetry (automated system, COBAS 503)	Latex immunoturbidimetric method		
	Albumin	Colorimetry (automated system, COBAS 503)	Bromocresol Green method		
	T4L T3L Estradiol Progesterone Thyroglobulin	ECLIA Electrochemiluminescence (automated system, COBAS E801)	ECL method / competition		
Serum (or plasma)	Alanine amino transferases Aspartate amino transferase	Colorimetry (automated system, COBAS 503)	IFCC method, without pyridoxal phosphate		
	Protéines totales	Colorimétrie (automatique, COBAS 503)	Méthode colorimétrique dite du Biuret		
	HDL cholesterol LDL cholesterol Total cholesterol Triglycerides	Spectrophotometry (automated system, COBAS 503)	Enzymatic, colorimetric method		
	Alkaline phosphatase	Colorimetry (automated system, COBAS 503)	IFCC Method		
	Iron	Colorimetry (automated system, COBAS 503)	Ascorbate / FerroZine method		
	Cholinesterase	Colorimetry	Colorimetric method / Butyrylthiocholine		



Objects submitted for analysis	Characteristics or properties measured	Measurement principle and equipment	Analysis methods
		(automated system, COBAS 503)	
	Direct bilirubin Total Bilirubin	Colorimetry (automated system, COBAS 503)	Diazo Method
	Apolipoprotein A1 Apolipoprotein B IgA IgG IgM Transferrin	Immunoturbidimetry (automated system, COBAS 503)	Immunoturbidimetric method
	PSA PSAL HcG FSH LH TSH ACE CA 15-3 CA 19-9 CA 125 AFP NT-proBNP	ECLIA Electrochemiluminescence (automated system, COBAS E801)	ECL method / sandwich
	Creatine kinase CKNAC Creatine kinase CKMB Lactate dehydrogenase	Colorimetry (automated system, COBAS 503)	Immunological UV method
	Vitamin B12	ELISA and related immunoassays (automated system, COBAS 503)	ECLIA (electrochimiluminescence)
	Vitamin D 25OH, Vitamin B9	ELISA and related immunoassays (automated system, COBAS 503)	Electrochemiluminescence by competition
	Ferritin	ELISA and related immunoassays (automated system, COBAS 503)	Immunoturbidimetric
	P1NP	ELISA and related immunoassays (automated system, COBAS PRO)	Sandwich
Stool	Fecal occult blood test	Immunoturbidimetry automated system, Sentifit	Immunochemistry by absorbance



Objects submitted for analysis	Characteristics or properties measured	Measurement principle and equipment	Analysis methods
	Calprotectin	ELISA and related immunoassays (automated system, PHADIA 250)	Immuno- enzymofluorescence FEIA
	Lipase	Colorimetry (automated system, COBAS 503)	Colorimetric method
	γ-Glutamyl Transferase	Colorimetry (automated system, COBAS 503)	Carboxy-GLUPA / Szasz- Persijn / Tris method
	Rheumatoid factor Haptoglobin Transferrin saturation	Turbidimetry (automated system, COBAS 503)	Immunoturbidimetric method
	Pancreatic amylase	Spectrophotometry (automated system, COBAS 503)	Colorimetric method
	Troponin T hs	ELISA and related immunoassays (automated system, COBAS 801)	ECLIA
	Alkaline reserve	Spectrophotometry (automated system, COBAS PRO)	Absorption spectrometry
Serum	Procalcitonin	ELISA and related immunoassays (automated system, COBAS PRO)	Electrochemiluminescence ECLIA
	Myoglobin Prolactin Testosterone SHBG ACTH Insulin C-Peptide Parathormone CTX - CrossLaps	ELISA and related immunoassays (automated system, COBAS PRO)	Sandwich
	Homocysteine	Spectrophotometry (automated system, COBAS PRO)	Enzymatic method
	SDHEA Cortisol	ELISA and related immunoassays (automated system, COBAS PRO)	Competition
	Androstenedione	Direct immunoassay (automated system, LIAISON)	Chemiluminescence competition



Objects submitted for analysis	Characteristics or properties measured	Measurement principle and equipment	Analysis methods
	Beta-2 Microglobulin Complement C3 Complement C4	Spectrophotometry (automated system, COBAS PRO)	Immunoturbimetry
	CDT	Electrokinetic separation CAPILLARYS	Absorption spectrophotometry
	Protein electrophoresis	Capillary electrophoresis CAPILLARYS	Electrokinetic separation technique
	Urine dipstick analysis: glucose, bilirubin, blood, leukocytes, nitrite, pH	Urine dipstick, UC3500 (Sysmex)	Semi-quantitative method
Urine	Urine analysis with sediment: testing for glucose, acetone, protein, urobilin, bilirubin, blood, leukocytes, nitrite, determination of pH and specific gravity, examination of the sediment under the microscope	Urine dipstick, fluorocytometry, automated microscopy UC3500, UF4000, UD10 (Sysmex)	Semi-quantitative method, quantitative and qualitative method
	Urinary proteins	Spectrophotometry (automated system, COBAS PRO)	Turbimetry
Serum/ plasma – urine	Glucose	Spectrophotometry (automatique, COBAS 503)	Colorimetric method (hexokinase/G-6-PHD)
Serum/ plasma –	Uric acid Alpha-amylase Calcium Creatinine Magnesium Inorganic phosphorus Urea	Spectrophotometry (automated system, COBAS 503)	Colorimetric method
unne	Microalbumin	Turbidimetry (automated system, COBAS 503)	Turbidimetric method
	Chloride Potassium Sodium	Measurement of electrical potential - Electrochemistry (automated system, COBAS 503)	Indirect potentiometric method



Objects submitted for analysis	Characteristics or properties measured	Measurement principle and equipment	Analysis methods
Technical domain: ME	D1.2 – Pharmacology -	- Toxicology and radio-toxic	ology
Urine	Amphetamine Barbiturates Buprenorphine Benzodiazepine Cocaine 3,4-Methylendioxy-N- methylamphetamin (MDMA) Methamphetamine Morphine / Opiat Methadone Tricyclic antidepressants tetrahydrocannabinol (THC)	Immunochromatography (manual method, Drug- Screen Multi Test)	Rapid immunochromatographic test
General domain: MED	2 – Haematology		
Technical domain: ME	D2.1 – Hemocytology		
	HbA1c	HPLC method (Tosoh Bioscience G11)	HPLC method
EDTA whole blood	Automated blood count, microscopic blood count	Flow cytometry and diffraction (leukocytes, neutrophils, lymphocytes, monocytes, eosinophils, basophils); impedance (red blood cells, platelets) or PLT-I; photometry (hemoglobin; electrical pulses (hematocrit) XN1, XN2, XN3	Quantitative method
	Reticulocytes	Flow cytometry and impedance XN2, XN3	Quantitative method
	Sedimentation rate	Photometry (automatic measurement, Alifax)	Automated photometric reading of red cell sedimentation kinetics
Technical domain: ME	D2.2 – Coagulation		
	D-Dimer	Nephelometry (automated system, Siemens CS5100)	Adapted, nephelometric, quantitative method, 6-point calibration
Plasma	Fibrinogen	Chronometry (automated system, Siemens CS5100)	Adapted, chronometric, quantitative method, 5-point calibration



Objects submitted for analysis	Characteristics or properties measured	Measurement principle and equipment	Analysis methods
	APPT	Chronometry (automated system, Siemens CS5100)	Adapted, chronometric, quantitative method, no calibration
	Prothrombin Time (PT) / INR	Chronometry (automated system, Siemens CS5100)	Adapted, chronometric, quantitative method, 6-point calibration
	Protein S	Chronometry (automated system, Siemens CS5100)	Prolongation of coagulation time by inhibition of factor Va
	Protein C ATIII	Chromogenic method (automated system, Siemens CS5100)	OD measurement
	Resistance to activated protein C	Chronometry (automated system, Siemens CS5100)	Quantitative method
Technical domain: ME	D2.3 – Immunohemato	logy	
Serum (or plasma)	ABO blood grouping, Rhesus, Kell	Agglutination (automated system, ORTHO VISION)	Agglutination column filtration
	IAT	Agglutination (automated system, ORTHO VISION)	Agglutination column filtration
General domain: MED	3 – Immunology		
Technical domain: ME	D3.1 – Allergology		
Serum	Specific IgE Total IgE	Automatic measurement PHADIA	FEIA Sandwich immunoassay
Technical domain: ME	D3.2 – Autoimmune dia	agnostics	
	Anti-acetylcholine receptor antibodies Anti-Musk antibodies	ELISA and related immunoassays (automated system, ZENIT UP)	ELISA (Quantitative method)
Serum	anti-LGI1/CASPR2 antibodies Pancreatic islet-cell antibodies (ICA)	Fluorescence microscopy	Immunofluorescence (Qualitative method)
	Anti-phospholipid antibodies IgG Anti-phospholipid antibodies IGM	Fluorescence (automated system, Phadia)	Immunoenzymatic method
	Anti-actin antibodies	Fluorescence microscopy	Immunofluorescence / DOT



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Objects submitted for analysis	Characteristics or properties measured	Measurement principle and equipment	Analysis methods
	Anti-LKM antibodies Anti-LC1 antibodies Anti-neuron antibodies Anti-nuclear antibodies ANCA Anti-myelin antibodies Anti-mitochondria antibodies Anti-parietal cell antibodies Anti-liver antibodies Anti-Iver antibodies Anti-PR3 antibodies Anti-kidney antibodies (GBM)	Immunoassay	(Qualitative and quantitative methods)
	Anti-intrinsic factor antibodies Anti-ganglioside antibodies	Immunoassay	DOT (Quantitative method)
	Anti-Gliadine IgA antibodies, Anti- transglutaminase IgA antibodies	Immunoassay Automated system, Profiblot 48	DOT
	Anti-TPO antibodies Anti-Thyroglobulin antibodies Anti-TSHr antibodies	ELISA and related immunoassays (automatic measurement, COBAS PRO)	ECLIA Competition method
	Anti-CCP antibodies	ELISA and related immunoassays (automated system, PHADIA 250)	Immuno- enzymofluorescence FEIA
General domain: MED4 – Medical microbiology			
Technical domains: MED4.2 – Medical bacteriology / MED4.3 – Medical parasitology / MED4.4 – Medical mycology			
Macro- and microscopic examinations			
URINARY TRACT INFECTION / CYTOBACTERIOLOGICAL EXAMINATION OF URINE			

Urine / Urine sediment	Red blood cells,	Flow cytometry	Enumeration of red and
	leukocytes, epithelial	Automated method	white blood cells, epithelial
	cells and crystals	UF4000 (Sysmex)	cells and crystals
	1		



Objects submitted for analysis	Characteristics or properties measured	Measurement principle and equipment	Analysis methods
	Microorganisms	Automated light microscopy UD10 (Sysmex)	Direct examination: Search for bacteria and yeast on a GRAM stained slide
	Bacteria and yeast	Automated method Wasp (MLS)	Manual plating Culture and recognition of colonies
	Testing for urinary soluble antigens of Legionella pneumophila and Streprococcus pneumoniae	Immunochromatography (manual method, BinaxNOW Legionella Ag Urinary)	Rapid immuno- chromatographic test
UROGENITAL AND SE	XUALLY TRANSMITTEI	D INFECTIONS	
		Measurement principle and equipmentAnalysis metAutomated light microscopy UD10 (Sysmex)Direct examination for bacteria and ye GRAM stained slide Manual plating Culture and recog coloniesAutomated method Wasp (MLS)Manual plating Culture and recog coloniesImmunochromatography (manual method, BinaxNOW Legionella Ag Urinary)Rapid immuno- chromatographic toED INFECTIONSFresh state: Seard microorganisms of Direct examination for bacteria and ye GRAM / MGG staitMéthode automatisée WASP (MLS)Direct examination for bacteria and ye GRAM / MGG staitLUREManual or automated slide staining (PREVI Color, Biomérieux) Light microscopyDirect examination Search for bacteri GRAM stained slide staining Culture and recog colonies by autom methodManual and/or automated technique WASP (MLS)Direct examination Search for bacteri GRAM stained slide staining Culture and colony recognition by ma automated methodManual and/or automated technique WASP (MLS)Manual or automated plating Culture and recog colonies by manualManual or automated slide staining (PREVI Color, BioMérieux) Light microscopyDirect examination for bacteria and ye gRAM stained slide staining (PREVI Color, BioMérieux) Light microscopyDirect examination for bacteria and ye gRAM stained slide staining (PREVI Color, BioMérieux) Light microscopyManual or automated slide staining (PREVI Color, BioMérieux) Light microscopyDirect examination 	Fresh state: Search for microorganisms on the slide
Vaginal swab	Bacteria and yeast		Direct examination: Search for bacteria and yeast on a GRAM / MGG stained slide
	Bacteria and yeast	Méthode automatisée WASP (MLS)	Automated plating Culture and recognition of colonies by automated method
DIGESTIVE TRACT INF	FECTION / STOOL CUL	TURE	
	Microorganisms	Manual or automated slide staining (PREVI Color, Biomérieux) Light microscopy	Direct examination : Search for bacteria on GRAM stained slides
Stool	Bacteria and yeasts	Manual and/or automated technique WASP (MLS)	Manual or automated plating Culture and colony recognition by manual or automated method
	Bacteria	Manual technique Macroscopic characteristics	Manual plating Culture and recognition of colonies by manual method
OTHER TYPES OF INF	ECTIONS		
Sperm Secretion and exudates of the otorhinolaryngeal	Microorganisms	Manual or automated slide staining (PREVI Color, BioMérieux) Light microscopy	Direct examination: Search for bacteria and yeast on a GRAM stained slide
Expectoration Puncture fluid	Bacteria and yeast	Manual and/or automated method WASP (MLS)	Manual or automated plating



Objects submitted for analysis	Characteristics or properties measured	Measurement principle and equipment	Analysis methods
Urethral swab Intrauterine device (IUD)			Culture and recognition of colonies by manual or automated methods
Skin Wound Pus	Bacteria	Manual method Macroscopic characteristics	Manual plating Culture and recognition of colonies by manual method
		Light microscopy (manual measurement)	Microscopic examination
Skin and appendages	Filamentous fungi and yeasts	Manual plating	Culture in solid medium Macroscopic and microscopic examination in the fresh state and after culture
Whole blood	Malaria	Light microscopy (manual method)Light microscopy slide reading after MGG staImmunochromatography (manual method)Rapid immuno- chromatographic test	Light microscopy slide reading after MGG staining
			Rapid immuno- chromatographic test
Antibiograms and add	itional tests		
Culture from matrices : Urine Vaginal swab Sperm Secretion and exudates of the otorhinolaryngeal	Antibiotic susceptibility	Diameter measurement Agar diffusion (manual technique)	ANTIMICROBIAL SUSCEPTIBILITY TESTING MIC and complementary tests in solid media: diffusion in agar media
Expectoration Puncture fluid Urethral swab Intrauterine device (IUD) Ocular specimen Skin Wound Pus Stool	Antibiotic susceptibility	Spectrophotometry Diffusion in liquid media (automated method, Vitek2, BioMérieux)	ANTIMICROBIAL SUSCEPTIBILITY TESTING MIC and complementary tests: Measurement of growth inhibition in liquid medium in the presence of antibiotics
Swabs (armpits, nose, inguinal folds, throat, wound)	MRSA	Manual method	Qualitative method on specific chromogenic media
Swabs (rectal, nasal, inguinal folds, armpits, wound, throat)	ESBL	Manual method	Qualitative method on specific chromogenic media



Objects submitted for analysis	Characteristics or properties measured	Measurement principle and equipment	Analysis methods
Stool			
Identification			
Culture from matrices : Urine Vaginal swab Sperm Secretion and exudates of the otorhinolaryngeal sphere Expectoration Puncture fluid Urethral swab Intrauterine device (IUD) Ocular specimen Skin Wound Pus Stool	Bacteria and yeast Search for MRSA Search for ESBL	Automated method Mass spectrometry Maldi- Tof (Bruker)	Automated identification by mass spectrometry
Bacterial or fungal strains grown from matrices : Urine Vaginal swab Sperm Secretion and exudates of the otorhinolaryngeal sphere Expectoration Puncture fluid Urethral swab Intrauterine device (IUD) Ocular specimen Skin Wound Pus Stool	Bacteria and yeast	Automated method using biochemical tests (Vitek2)	Automated identification using biochemical tests



Objects submitted for analysis	Characteristics or properties measured	Measurement principle and equipment	Analysis methods
Technical domain: ME	D4.6 - Infectious molec	cular biology	
Stool	Testing for parasites : Giardia lamblia Entamoeba histolytica Cryptosporidium spp. Blastocystis hominis Dientamoeba fragilis Cyclospora cayetanensis Enterocytozoon spp. Encephalitozoon spp. Strongyloides spp. Ascaris spp. Taenia spp. Trichuris trichiura Ancylostoma spp. Enterobius vermicularis Necator americanus		
Stool	Testing for viruses: Norovirus GI Norovirus GII Rotavirus Adénovirus Astrovirus Sapovirus	DNA/RNA detection and amplification (gene hybridization with amplification) (STAR/STARLET/CFX96)	Quantitative and qualitative methods
Stool	Testing for bacteria : Campylobacter spp. Salmonella spp. Shigella spp. E. coli entéro-invasif Yersinia enterocolitica Escherichia coli 0157		
Stool	Testing for bacterial toxin : <i>Clostridium difficile</i> (toxine B) (stx1/stx2) toxine (A/B) de <i>Clostridium difficile</i>		
Vaginal swab	G. vaginalis (quantitatif)		



Objects submitted for analysis	Characteristics or properties measured	Measurement principle and equipment	Analysis methods
	A. vaginae (quantitatif) Mobiluncus spp Lactobacillus spp (quantitatif) Trichomonas vaginalis Candida albicans Candida spp		
Genital swabs, urine, oropharyngeal swabs, rectal swabs and semen	Sexually transmitted diseases <i>Chlamydia</i> <i>trachomatis</i> <i>Neisseria</i> gonorrhoeae <i>Trichomonas</i> <i>vaginalis</i> <i>Mycoplasma</i> <i>genitalium</i> <i>Ureaplasma</i> <i>urealitycum</i> <i>Mycoplasma hominis</i> <i>Ureaplasma parvum</i>		
Respiratory samples	Testing for SARS- COV-2 Coronavirus Influenza A - Influenza B - RSV - Coronavirus SARS- Cov2		
Respiratory samples	Chlamydia pneumoniae, Mycoplasma pneumoniae, Bordetella pertussis, Bordetella parapertussis, Legionella pneumoniae	DNA detection and amplification (gene hybridization with amplification) (STAR/STARLET/CFX96)	Qualitative method



Objects submitted for analysis	Characteristics or properties measured	Measurement principle and equipment	Analysis methods
General domain: MED	5 – Sérologie		
Technical domain: ME	D5.1 – Sérologie infect	lieuse	
Serum	Chlamydia pneumonia serology (IgG, IgM)	ELISA and related immunoassays (automated system, Etimax)	ELISA (Quantitative method)
	Borrelia burgdorpi serology (IgG, IgM); screening serology Chlamydia trachomatis serology (IgG, IgA) Mycoplasma pneumoniae serology (IgG, IgM) Epstein Barr virus serology (EBNA IgG, VCA IgG, VCA IgM) Herpes simplex virus serology (HSV2 IgG, HSV 1 IgG, HSV 1 et 2 IgM) Parvovirus B19 serology (IgG, IgM) Varicella Zoster virus serology (IgG, IgM)	ELISA and related immunoassays (automated system, Liaison XL)	Chemiluminescence (Quantitative method)
	Cytomegalovirus serology (IgG) Rubella IgG Toxoplasmosis IgG	Electrochemiluminescence ECLIA (automated system, COBAS E801)	ECL method / sandwich
	Cytomegalovirus serology (IgM) Rubella IgM Toxoplasmosis IgM	Electrochemiluminescence ECLIA (automated system, COBAS E801)	ECL method / μ-Capture
Whole blood	Interferon-γ (Quantiferon)	Immunoluminometric technology (automated system, LIAISON)	Chemiluminescence sandwich
Sérum humain (ou plasma)	HIV, Anti HAV total antibodies, Anti HAV IgM antibodies, HBs antigen, Anti HBc antibodies HCV,	ELISA and related immunoassays (automated system, COBAS E801)	ECLIA (electrochemiluminescence)



Objects submitted for analysis	Characteristics or properties measured	Measurement principle and equipment	Analysis methods
	HBs antigen confirmation by neutralisation		
	HBs antibodies Syphilis	ELISA and related immunoassays (automated system, COBAS E801)	ECLIA/Sandwich
	COVID serology	ELISA and related immunoassays (automated system, COBAS E801)	ECLIA / Dual antigen sandwich method
	Rubella IgM, IgG Toxoplasmosis IgM, IgG	ELISA and related immunoassays (automated system, VIDAS)	Enzyme-linked immunosorbent assay with final fluorescence detection (ELFA)
	VDRL (Syphilis)	Agglutination test Manual technique	Indirect haemagglutination
	TPHA (Syphilis)	Agglutination test Manual technique	Agglutination reaction
General domain : MED	7 – Reproductive biolo	рду	
Technical domain: MED7.1 – Spermiology			
Sperm	Sperm detection and identification, volume, pH, viscosity, agglutination, motility, concentration, round cells	Manual method Direct macro- and microscopic examination, with or without treatment (centrifugation, gradient,) on fresh sample or after thawing	WHO Standard 2021 Bioforma 42 Spermogram / TMS / Post- vasectomy control
	Morphological examination and identification of cells (round cells, spermatozoa, etc.) and/or vitality	Manual method Staining (Papanicolaou, Eosin-Nigrosin, Harris- Schorr,) and/or microscopic examination (MSOME)	WHO Standard 2021Bioforma 42 Spermogram / Spermocytogram / TMS
	Detection, identification and determination of the concentration of anti- spermatozoa antibodies	Latex agglutination	WHO Standard 2021 Bioforma 42 MAR-Test



Objects submitted for analysis	Characteristics or properties measured	Measurement principle and equipment	Analysis methods
Technical domain: MED7.2 – Medically assisted procreation			
Sperm	Sperm preparation for MAP: Sperm detection and identification, volume, motility, concentration	Manual method Direct macro- and microscopic examination, with or without treatment (centrifugation, gradient,) on fresh or thawed samples	WHO Standard 2021 Bioforma 42
General domain : MED9 – Collection of biological samples			
Technical domain: MED9.1 – Collection of biological samples, carried out by the laboratory or under its responsibility			
Venipuncture	/	Venipuncture	Sampling manual D_PREA_002
Microbiological samples: Skin Phanera ENT Mucous membrane	/	Other samples and collections	Sampling manual D_PREA_002