Details of the instruments available with ICMR-NIREH, Bhopal

Name of equipment	**Millipore Milli-Q™ Integral System**
Make/ Model	SUREPROM1 SUREPRO PRE FILTRATION M/S Millipore/ Cat No ZRXQ003T0
SPECFICATION	
Capacity (Metric)	60L/day
Resistivity at 25 °C[1]	18.2 MΩ•cm
TOC[2]	≤ 5 ppb
Particulates (> 0.22 µm)[3]	< 1 particulate/mL
Bacteria[3,4]	< 0.01 CFU/mL
Pyrogens (endotoxins)[4]	< 0.001 EU/mL
RNases[4]	< 1 pg/mL
DNases[4]	< 5 pg/mL
Flow Rate	Up to 2 L/min
Certifications/Compliance	ISO 9001 v.2000, ISO 14001
Uses and Principle	Milli-Q Integral is a unique combination of optimized water purification and monitoring technologies. It allows, in a single device, both pure (Type 2) and ultrapure (Type 1) water to be produced directly from potable water. Pure and ultrapure water is used for the preparation of reagents and buffers, for microbiology media or histology. To obtain purified water, the machine circulates water passes through a long-life dual wavelength UV lamp, which ensures organic molecule degradation by photooxidation. The Quantum® polishing cartridge then removes the remaining ionic and organic contaminants below trace levels. Finally, the ultrapure water recirculates through a loop to the Q-POD® (Quality-Point-Of-Delivery) dispenser, where an Application-Pak removes specific contaminants critical for experiments – Ultrapure water free of particulates, bacteria, pyrogens, nucleases, proteases, VOCs, endocrine disruptors and organics for LC.

Image: Millipore Milli- Integral System

Name of equipment	**ELISA READER**
Make/ Model	BIOTEK; UNIVERSAL AUTOMATED MODEL NO. ELX800NB
Specifications	
Accuracy	±1%, ±0.010Abs (from 0 to 2.000Abs @405nm)
Measurement Speed	96 wells: 30 seconds
Electrical Requirement	100-240V 50/60Hz
Hertz	50/60Hz
Linearity	±1% (from 0 to 2.000Abs @405nm), ±3% (from 2.000 to 3.000Abs @405nm)
Features	ELx800 has 24-, 48-, and 96-well microplate read modes
Description	Two 24-character LCD and convenient soft-keys for easy use Onboard data analysis offers extensive curve-fitting options: linear, cubic, quadratic, 4-P, log-logit, cubic-spline, and point-to-point; plus endpoint and kinetic measurement. Three modes of performance and optical specifications testing: optical self-test, a calibration test plate, and a "wet test". Auto or manual plate layout for blanks, controls, standards, and samples. Compatible with optional Gen5™ software. USB and RS232 ports for PC connection; parallel printer port.
Use and Principle	Plate readers are used to detect biological, chemical or physical events of samples in microtiter plates. They are widely used in research, drug discovery, bioassay validation, quality control and manufacturing processes in the pharmaceutical and biotechnological industry and academic organizations. The ELISA reader uses the principals of light transmittance and absorbance. Using a defined path length (b), ELISA reader uses Beer-Lambert Law (A=εbc) to determine the concentration (c) of a substance in solution, with a known molar absorptivity (e), or log I0/I=εbc.

Image: ELISA reader

Name of equipment	**HIGH SPEED BENCH TOP CENTRIFUGE**
Make/ Model	BECKMAN COULTER MODEL NO. ALLEGRA X 22R BENCH TOP CENTRIFUGE
SPECIFICATION	
UNSPSC:	41103903
Approximate Acceleration Time:	10 acceleration profiles
Approximate Deceleration Time:	10 deceleration profiles
Electrical Requirements:	50 Hz; 230 VAC, 2.6 A
Maximum Heat Dissipation into Room under Steady-State Conditions:	0.48 kW (1,638 Btu/hr)
Speed Range:	0 to 14,500 rpm or equivalent RCF
Ambient Temperature Range:	4°C to 35°C ambient
Humidity Restrictions:	< 80% (noncondensing)
Ventilation Clearances Required:	7.6 cm (3.0 in) sides
ROTORS	
Part No	Max (rpm) Speed
364640	10,000
361171	15,500
364680	9,500
392243	4,500
Use and Principle	The Beckman coulter Allegra X-22 Series Benchtop centrifuges generate centrifugal forces required for wide variety of application such as routine sample preparation, pelleting, extraction, purification, concentration, phase separation, receptor binding and column centrifugation.

Image: Centrifuge

Name of Instrument	**Microtome**
Make	Thermo Scientific
Model	Mirom HM325
Specification	
Trimming	Automatic
Specimen Movement	Vertical, retraction in return stroke
Section Feed	0.5 – 60 µm
Feed time for 2um	0.5 µm
Feed time for 10um	1 µm
Feed time for 20um	2 µm
Max Horizontal Range	28 mm
Uses and Principle	A microtome is a tool used to cut extremely thin slices of material, known as sections. Microtomes are commonly used for microscopy applications, for the preparation of samples for observation under transmitted light or electron radiation.

Image: Microtome

Name of Instrument	**Blood gas analyzer**
Make/Model	Roche Diagnostics, Cobas b 121
Specification and features	
The system is Barcode (scan) enabled to prevent patient data mix-up, is durable and robust with low maintenance electrodes. Graphical user interface ensures ease of operation, and provide complete documentation of results including patient and operator identification	
Throughput	30 samples per hour
Low sample volume	60 µL allows use in neonatal settings
Parameters:	Blood gases pH, PO2, PCO2, Total hemoglobin tHb, Oxygen saturation SO2, Hematocrit Hct
Uses	Instrument for measurement of up to 10 key critical care blood parameters including blood gas, electrolytes, total haemoglobin, oxygen saturation and hematocrit.

Image: Blood gas analyzer

Name of Instrument	**Tissue Processer**
Make/Model	Leica Biosystem, Leica TP 1020
Specifications	
Dimensions	
Carousel lid	820 mm Ø
Height	595 – 780 mm
Diameter of rollers	610 mm
Dry weight (including accessories)	60 kg
Wax baths	
Number	2 (3 optional)
Capacity	1.8 l
Temperature range	45 °C – 65 °C
Excess temperature cutout	75 °C ± 4 °C
Reagent containers	
Number	10 (9)
Capacity	1.8 l
Standard tissue basket	
Number	1 (2 optional)
Capacity	max. 100 cassettes
Programs	
Number	9, freely selectable
Programmable infiltration time per station	99 h 59 min
Delayed start	9 days
Drain time	60 s
Uses	For tissue processing (dehydration, clearing, infiltration) required prior to sectioning of tissues, making slides and immunohistochemistry

Image: Tissue Processor

Name of Instrument	**Fully automated biochemistry analyser**
Make/Model	ERBA, EM200
Specifications	
Throughput	200 photometric tests/hour & 400 tests/hour with ISE (Optional)
Sample Type	Whole blood, Serum, Plasma, Urine, CSF other
Reading Volume	180 µ
Sample Volume	2-70 µl (Adjustable in 0.1 µl)
Light Source	Halogen lamp
Calibration Type	Linear, Non-Linear, Multipoint
Onboard Parameters	50 + 4 ISE
Tests	All routine clinical chemistry profiles like LFT, KFT, lipids, diabetic; specialized chemistries like HbA1c, ADA, Apo A1, Apo (B), Lp(a); Immunoturbidimetric assay like ASO, RF, CRP etc.
Uses	The EM 200 is a compact, fully automated random access, discrete clinical chemistry analyzer to run special chemistry, electrolytes & immunoturbidimetry assays apart from routine chemistry tests.

Image: Biochemistry Analyzer