



Equipment	Make and Model	Application
3D printer	Ultimaker + 3devo Composer	Based on Fused deposition modelling (FDM) technology. Printing filaments and making 3D printed pharmaceuticals dosage forms
Atomic Absorption Spectrophotometer	Shimadzu, AA-6200	Determining the concentration of a particular metal element within a sample
Atomic Force Microscopy	Multimode 8 AFM and Asylum AFM (IWRI)	Imaging of surfaces, adsorbed proteins/macromolecules and cells (including interaction forces)
Autoclave	Atherton, Tangent Tiger Series Sterilizer	Sterilizing materials and samples by subjecting them to high pressure saturated steam at 121 °C
Ball Mill	Fritsch, Pulverisette 23	Dry and wet grinding
Bench Mixer	Smith + Nobel	Mixing of liquid or semi-solid pharmaceutical preparations up to 3 kg capacity
BiaCore T100 (BCF)	GE Healthcare	Substrate binding to proteins; macromolecular interactions; enzyme kinetics
Breath analyser	Sercon	Automated breath C13 analyser
CD Spectrophotometer	Jasco-815	Protein secondary structure and folding
Cell Breaker	Constant Systems	Large-scale lysis of bacterial cells for protein purification
Centrifugal Thin-Layer Chromatography	Chromatotron Model 7924T	Preparative scale separation of mixtures such as fractions of natural product extracts. May be used as an alternative to preparative HPLC
Centrifuge	Beckman Coulter - Beckman Allegra X-12R	Routine processing such as sample preparations, pelleting, extractions, purifications, concentrations, phase separations, receptor binding, and column centrifugations, Cell isolation, Binding studies, and separation of whole blood
Coating pan	Erweka	Tablet or capsules coating and drying
Confocal microscope	Zeiss LSM710 and Lucid Vivascope	Includes Becker & Hickl Fluorescence Lifetime Detector and Horiba Raman spectroscopy detector
Cubis Microbalance	Sartorius	To precisely measure samples weighing less than 10mg
Deep freezer	New Brunswick scientific	Storage at -80°C

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Differential scanning calorimeter	Perkin Elmer, Pyris 6	Determining heat flow by measuring the temperature difference over a very acutely known thermal resistance
Dip Coater	Multi Corporation	Coating of pharmaceuticals
Disintegration tester	Electrolab	Testing if a solid dosage form disintegrates within a defined period when placed in the medium
Dissolution Test Station	Sotax CPT (USP Apparatus 1, 2 and 4)	Determining the drug release rate from the formulation and developing quality control specifications for its manufacturing process.
Dryer Oven	Steridium	Drying
Encapsulator	BUCHI - B-390	Production of monodisperse microbeads and microcapsules of particle diameters between 80 µm and 4000 µm
EPR Table-Top Analyser	Bruker Bio-spin E-scan M	ROS and RNS quantification and identification
Equipment for culturing of microbial and mammalian cells	Various models	Microbiology
Extruder (Liquid formulation)	Avastin	Preparation of liposomes on a small scale
Extruder and spheronizer (Solid formulation)	Caleva	Developing pellets formulations
Fluid Bed Drier	MIDI-Glatt	Drying, granulating/ agglomerating, coating for powder, pellets, or small tablets
Fluorimeter	Perkin Elmer LS55	Drug efflux in real time; fluorescence resonance energy transfer (FRET); fluorescence polarisation etc.
Fourier Transform Infrared Spectrometer	Shimadzu IR Prestige 21	A dynamic auto-alignment system to optimize reproducibility. Analyse a wide range of samples, from a monolayer to relatively thick films, good for studies of layered samples, coatings, monolayers on silicon and depth profiling studies.
FPLC	Acta Pure, GE healthcare	Fast and efficient protein purification
Franz Diffusion Cell		In-vitro drug release assays
Freeze Dryer	-	Lyophilization/ freeze drying
Friability tester	Electrolab	measuring the mechanical strength or hardness of tablet

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Gas Chromatography System	Shimadzu, GC-17A	High-precision trace analysis of compounds with high repeatability, utilizing detectors such as FID and FPD that feature best-in-class sensitivity. In addition, rapid oven cooling and backflush technology shorten analysis time greatly for significant improvements in productivity.
Gel imaging system	Bio-Rad Gel Doc XR (system with Image Lab version 4.1)	Enables quick and easy visualization, documentation, and analysis of nucleic acid and protein gels, blots, and macroarrays. The system supports fluorescence and colorimetric detection methods.
Hardness tester	Electrolab	Testing the mechanical integrity of a tablet, referred to as tablet break force
Heater incubator	Axyos incubator and Townson	Incubator
High Pressure Homogeniser	Emulsiflex-C3	Rapidly reduces particles and droplets from micron to nanometer sizes. Enables liposomes and emulsions to be processed from micron to nanometer sizes
High Speed Centrifuge	Sorvall RC-5B	Refrigerated and high-speed floor model centrifuge for laboratory and clinical applications capable of operating at speeds of 20,000 rpm (48,300 x g)
High-performance liquid chromatography (HPLC) - ELSD detector	Shimadzu	Qualitative and quantitative analysis of actives
High-performance liquid chromatography (HPLC) - Fluorescence detector	Shimadzu	Qualitative and quantitative analysis of actives
High-performance liquid chromatography (HPLC) - PDA detector	Shimadzu	Qualitative and quantitative analysis of actives
High-performance liquid chromatography (HPLC) - RID detector	Shimadzu	Qualitative and quantitative analysis of actives
High-performance liquid chromatography (HPLC) - UV detector	Shimadzu	Qualitative and quantitative analysis of actives
Homogeniser (high Pressure)	Avestin Emulsiflex-C3	Produces extremely uniform micro emulsions, with narrow nano - particle size distribution

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iBlot	Invitrogen	Fast and efficient Western Blotting
Isothermal Calorimeter (BCF)	GE Healthcare	Measure substrate binding to proteins; macromolecular interactions; enzyme kinetics
Laboratory Mixer	Diosna	Mixing and granulating
LCMS - 4500	SCIEX	Quantification of drugs and biomarkers in pharmaceutical and biological matrices
LCMS - 6500	SCIEX	Quantification of drugs and biomarkers in pharmaceutical and biological matrices
LCMS - 6500+	SCIEX	Quantification of drugs and biomarkers in pharmaceutical and biological matrices
Liquid Chromatograph-Mass Spectrometry (LC-MS)	Shimadzu (API3000 and API2000,)	Quantification of drugs and biomarkers in pharmaceutical and biological matrices
Mastersizer	Malvern	Measuring particle size in range of 0.01 - 3500 μm^*
Mini coater drier	Caleva	Tablet and pallets coating
Mini Spray Dryer	BUCHI - B-290	To spray-dry aqueous solutions or suspensions in one operating process. To generate particles in the inhalable size range from a solution of suspension
Nanosight	NS300	Allows rapid analysis of the size distribution and concentration of all types of nanoparticles from 0.01 - 1 μm^* in diameter
NMR Spectroscopy	-	The AVANCE III features the most advanced RF generation in the industry, a unique digital lock for superb experimental stability, and second-generation digital receiver (2G-DR technology) for high dynamic range, high digital resolution, and large bandwidth digital filtering.
Orbital shaker	Ratek	shaker incubator
Particle Sizing	Mastersizer (Malvern) (IWRI)	Particle size measurements (from ~0.1 to 3500 microns)
PCR machine	Bio-Rad	PCR
Photostability test chambers	Binder	Stability assessment
Plate reader	BioTek EL800	Reading absorbance in different format plates

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Plate shaker/incubator	Heidolf Titramax 1000, Incubator 1000	High speed shaking and incubating of different format plates
Preparative High-performance liquid chromatography (HPLC)	Shimadzu	Quantification of drugs and biomarkers in pharmaceutical and biological matrices and semi-preparative scale separation of compounds from mixtures such as natural product extracts
Preparative high-performance liquid chromatography (Prep HPLC)	Shimadzu	With fraction collector, used for separating and collection fractions of different chemicals from a mixture
Probe Sonicator	Qsonica	Sonication
Real Time PCR System	ABI 7500 FAST	96-well format, high-speed thermal cycling, SNP genotyping and high-resolution melting analysis
Refrigerated Centrifuge	Sigma 10680	High capacity table-top centrifuge with built-in refrigeration system
Rheometers	Various types	Measurement of viscosity and rheological behaviour of liquids, suspensions, emulsions etc
Rotary evaporator	Buchi, R-125	Evaporation of organic solvents under vacuum without the need for strong heating
Rotational Vacuum Concentrator	Christ, RVC 2-18	Evaporating solvent from samples that may be temperature sensitive
Solvent Evaporator	Genovac EZ-2 Personal	for solvent removal
Sonicater	Misamix	Sonication
Spectrophotometer	Nanodrop-2000 and Jenway 6305	Measures the absorbances of samples of nucleic acid or protein to determine their concentration and purity. Also measures the absorbance when performing colorimetric protein assays (such as BCA, Bradford, Lowry and Pierce 660nm assays), and measures the optical density of cell cultures to determine their growth rate

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Stability Chambers - 30°C/65% RH (ICH conditions)	Binder	Testing and storing a wide range of products in specific temperature, light and/or humidity conditions. Applications include, but are not limited to, shelf life testing, stability testing, expiration date testing, accelerated aging and other testing for pharmaceutical, packaging, life science, personal care, medical, biomedical storage, and research.
Stability Chambers - 40°C/75% RH (ICH conditions)	Binder	
Stability Chambers 25°C/60% RH (ICH conditions)	Binder	
Surface Tensiometers	Various types	Measure surface and interfacial tension
Tablet Press	Korsch XP 1	Initial feasibility, screening, and solid product characterization for single or multi-layer tablets
Texture Analyser	TA.XTplus	To measure and quantify fundamental, empirical and imitative tests in both compression and tension, covering those relating to texture analysis, materials properties as well as effects of rheology of solid, semi-solid, viscous liquid, powder and granulate materials.
TGA/DSC	TGA-5500	For thermal analysis and physicochemical characterization
Tissue homogenizer	Bertin cryolis and precellys 24	Homogenization by bead milling of tissues
Ultra Turrax	IKA Laborstechnik - T25 basic	High-performance dispersing instrument for volumes from 1 – 2000 ml (H ₂ O). Homogenizing wastewater samples, use in laboratory reactors, dispersion tasks under vacuum / pressure and sample preparation in medical research.
Ultracentrifuge	Beckman Coulter, L80-XP and XPN-100	Pelleting of fine particulate fractions, gradient separations
UV-Vis spectrophotometer	Shimadzu, UV1700	Measuring absorbance over a long wavelength region and monitors absorption changes at a single wavelength over time



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UV-Visible spectrophotometer	Evolution 201	Measuring absorbance over a long wavelength region and monitors absorption changes at a single wavelength over time
Water purifier	Sartorius Stedium arium proVF	for preparing high purity water
Weighing chamber	erlab Gally medical and scientific	Weighing container for harmful chemicals equipped with HEPA filter
Zetasizer	Nano ZSP	Characterization of proteins and nanoparticles where the highest sensitivity for size and zeta potential measurement is required