Elpida BioPharm P.C.

Research Equipment & Assays



Selected major research instruments available through Elpida BioPharm.

For routine laboratory equipment, enquire separately.

Contract research services

Thessaloniki, Greece

elbiopharm.com

Contents

Explore available research methods by application, from sample preparation and analytical profiling to imaging and materials testing.

Cell phenotyping, sorting & metabolism 03
Flow cytometry, cell sorting, metabolic flux and electrophysiology

Molecular assays & sequencing 04
Short-read and capillary sequencing, qPCR and biomarker detection

Chromatography & mass spectrometry 05 - 06
Liquid and gas chromatography, compound screening and quantification

Lipidomics, trace elements & polymers 07
Lipid panels and profiling, ICP-MS and polymer molecular weight

Histology & digital pathology 08
Tissue processing, H&E staining, microscopy and slide digitisation

Preclinical imaging & microscopy 09 - 10
Optical reporter imaging, confocal microscopy and 3D structural analysis

Electron microscopy 11 - 12
Ultrastructure, surface morphology and specimen preparation

Particle & materials characterisation 13 - 17
Particle size, wettability, thermal behaviour, composition and solid forms

Molecular & optical spectroscopy 18
NMR, infrared spectroscopy and fluorescence measurements

Formulation processing & device prototypes 19
Drying, extraction, mechanical testing and research prototypes

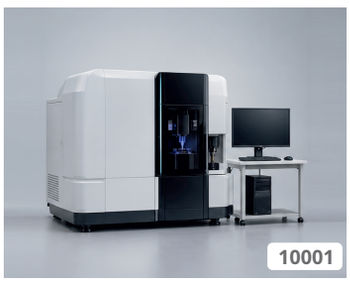
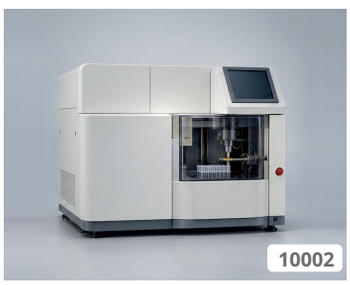
Project scope

We confirm sample suitability, instrument access, test conditions and reporting terms for each research project.

Photorealistic illustrations show representative instrument configurations.

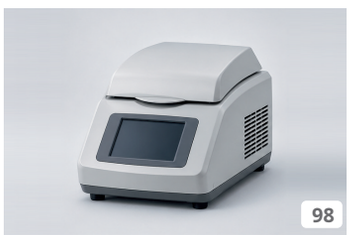
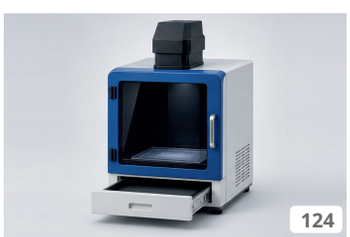
Cell phenotyping, sorting & metabolism

Profile cell populations and measure metabolic or electrophysiological responses.

	Instrument & specifications	Assays
 10001	**Spectral and image-enabled cell sorter** BD FACSDiscover S8 Four excitation lasers, full-spectrum detection and six real-time imaging channels, with sorting into up to six populations.	Multiparameter flow cytometry, image-guided phenotyping and sorting of compatible research cell populations.
 10002	**High-speed fluorescence cell sorter** BD FACSAria III High-speed fluorescence-activated sorting of selected cell populations using multichannel optical detection.	Enrich marker-defined viable cells for downstream research. Scope sorting conditions and collection format to the sample.
 10003	**Full-spectrum flow cytometer** Cytek Northern Lights Full-spectrum fluorescence collection and spectral unmixing for multiparameter analysis of cells in suspension.	Immunophenotyping, reporter-positive cell quantification and viability analysis with compatible panels and controls.
 10004	**Extracellular flux analyser** Agilent Seahorse XFe96 A 96-well live-cell platform for simultaneous oxygen consumption and extracellular acidification measurements.	Compare mitochondrial respiration, glycolytic activity and cellular metabolic responses across research conditions.
 131	**Patch-clamp electrophysiology setup** Low-noise amplifier, micromanipulator and optical microscope on a vibration-isolated recording platform.	Membrane current and potential measurements, and functional profiling of ion-channel responses in suitable preparations.

Molecular assays & sequencing

Select short-read sequencing, targeted molecular assays or biomarker detection.

	Instrument & specifications	Assays
	**High-throughput short-read sequencer** Illumina NextSeq 2000 Short-read sequencing by synthesis with single-end or paired-end runs, subject to the selected flow cell and chemistry.	Targeted DNA panels, bulk RNA sequencing and research sample microbiome profiling according to library and project scope.
	**96-well real-time PCR system** Applied Biosystems 7500 96-well qPCR platform with five-colour fluorescence detection for compatible dyes and sequence-specific probes.	Target and gene-expression quantification, standard curves and research genotyping using compatible assays.
	**Rotary real-time PCR system** QIAGEN Rotor-Gene Q 5plex Rotor-based thermal cycling with five optical detection channels for compatible multiplex fluorescence assays.	Multiplex target quantification and compatible single-target fluorescence qPCR for research samples.
	**Capillary genetic analyser** Applied Biosystems SeqStudio Four-capillary electrophoresis cartridge with fluorescence detection for Sanger sequencing and fragment analysis.	Sequence confirmation and fluorescent DNA-fragment sizing using compatible sample types and methods.
	**Gel and blot imaging system** Bio-Rad ChemiDoc Enclosed digital imaging chamber supports colourimetric and chemiluminescent acquisition of gels and membranes.	DNA, RNA and protein gel documentation, ECL Western blot imaging and compatible membrane assays.
	**Automated chemiluminescent immunoassay analyser** Fujirebio LUMIPULSE G600II Automated chemiluminescent enzyme immunoassay platform rated at 60 tests per hour, with kit-dependent parameters.	Research quantification of supported protein biomarkers in compatible serum, plasma or other kit-appropriate matrices.

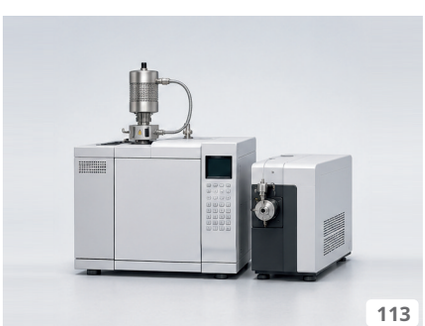
Liquid chromatography-mass spectrometry

Screen, identify and quantify compatible compounds in formulations and other research samples.

	Instrument & specifications	Assays
 92	**High-resolution LC-QTOF mass spectrometer** SCIEX ExionLC / X500R QTOF Liquid chromatography with accurate-mass quadrupole time-of-flight detection and tandem MS.	Targeted and untargeted small-molecule screening, formulation profiling and identification of candidate degradation products.
 152	**Two-dimensional UHPLC-MS/MS system** Shimadzu Nexera LC×LC / LCMS-8060RX Two-dimensional UHPLC, heated electrospray ionisation and triple-quadrupole detection with 5 ms polarity switching.	Targeted quantification of small molecules, lipids or selected peptide markers, with enhanced separation of complex samples.
 62	**UHPLC with electrospray mass spectrometry** Ultra-high-performance liquid chromatography coupled to mass detection by electrospray ionisation.	Chromatographic separation and mass detection of ionisable compounds in compatible mixtures, extracts or formulations.

Gas chromatography-mass spectrometry

Profile volatile and semi-volatile compounds or examine thermal decomposition products.

	Instrument & specifications	Assays
 150	**GC-MS/MS triple-quadrupole system** Shimadzu Nexis GC-2030 / GCMS-TQ8040 NX Gas chromatography with split/splitless and PTV inlets, electron ionisation and triple-quadrupole tandem MS.	Targeted analysis and screening of volatile and semi-volatile organic compounds in compatible matrices.
 89	**GC-MS with headspace sampling** Thermo Scientific TRACE GC Ultra / ISQ Electron-ionisation single-quadrupole GC-MS with liquid autosampling and dynamic headspace preconcentration.	Volatile and semi-volatile profiling, headspace analysis and quantification using established methods where applicable.
 113	**Pyrolysis GC-MS system** A pyrolyser thermally decomposes solid materials for separation and detection of the resulting compounds by GC-MS.	Compositional fingerprinting of polymers, coatings and complex solids, and comparison of degradation products.

Research capabilities

Lipidomics, trace elements & polymers

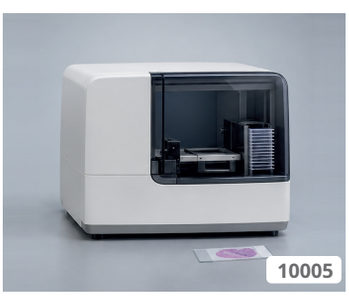
Profile complex lipids, trace elemental content and compatible formulation polymers.

	Instrument & specifications	Assays
 10008	**UHPLC-ion mobility-TOF mass spectrometer** TIMS-TOF platform Reverse-phase UHPLC with trapped ion mobility and high-resolution time-of-flight mass spectrometry.	Untargeted lipidomics and comparative lipid profiling in compatible biological or food sample matrices.
 10009	**Targeted lipid LC-MS/MS system** Waters ACQUITY UPLC / SCIEX API 3200 UPLC coupled to a SCIEX API 3200 triple quadrupole for targeted lipid measurement.	Quantitative four-ceramide panel in serum. Alternative matrices are assessed on request.
 10007	**ICP-MS trace-element analyser** Agilent 7850 ICP-MS Quadrupole inductively coupled plasma mass spectrometry for sensitive multi-element measurements in compatible sample matrices.	Trace metals and elemental-impurity screening in suitable ingredients, materials or extracts, subject to method and matrix.
 10010	**Gel permeation chromatography system** SEC/GPC platform Size-exclusion separation of soluble polymers by hydrodynamic size.	Polymer molecular-weight distribution and dispersity for compatible biomaterials, excipients and formulation polymers.

Research capabilities

Histology & digital pathology

From paraffin tissue processing and H&E staining to digital slides and microscopy.

	Instrument & specifications	Assays
	**Automated histology tissue processor** Intelsint ETP vacuum tissue processor Automated vacuum tissue processor for dehydration, clearing and paraffin infiltration.	Paraffin embedding, microtome sectioning, H&E staining and high-resolution digital slide scanning for research tissue samples.
	**Digital histology slide scanner** High-resolution digitisation of stained glass slides within a complete histology workflow.	Digital imaging of tissue sections after paraffin embedding, microtomy and H&E staining.
	**Upright light and fluorescence microscope** ZEISS Axio Imager.Z2 Upright platform with 5× to 100× objectives, phase contrast, differential interference contrast and fluorescence filters.	Histology imaging, immunofluorescence documentation and fluorescence *in situ* hybridisation microscopy.
	**Refrigerated high-speed centrifuge** Refrigerated separation up to 70,450 × g, with temperature setpoints from -20 to +40 °C depending on configuration.	Pelleting, clarification, sample cleanup and fractionation of compatible biological or nonbiological dispersions.

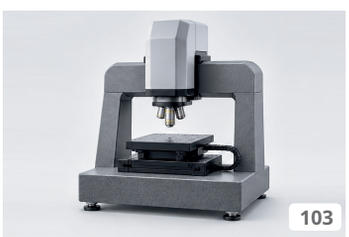
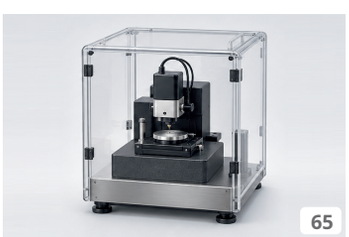
Preclinical optical & live-cell imaging

Newton 7.0 reporter imaging, live-cell microscopy and localisation studies.

	Instrument & specifications	Assays
	**Vilber Newton 7.0 FT500** Preclinical optical imaging system 2D bioluminescence and visible/near-infrared fluorescence imaging with 3D optical tomography capability.	Reporter signal and biodistribution in compatible *in vitro* and *ex vivo* samples, and approved *in vivo* models.
	**Spectral confocal laser-scanning microscope** ZEISS LSM 780 Inverted confocal system with spectral GaAsP detection, 10× to 100× objectives and temperature and CO_2 control.	Multichannel fluorescence z-stacks, colocalisation, live-cell time-lapse and fluorescence recovery after photobleaching.
	**Laser-scanning confocal microscope** Nikon Eclipse 80i / eC1 Upright microscope with eC1 confocal head, 488 nm and 543 nm laser lines and fluorescence filter sets.	Immunofluorescence localisation, tissue-section imaging, cultured-cell imaging and stereological cell counts.
	**Modular confocal imaging platform** ZEISS Axio Imager Z1 Modular upright digital microscopy platform. Available confocal modules, objectives and detectors depend on configuration.	Fluorescence imaging and optical sectioning for compatible preparations, subject to the available confocal module.
	**Inverted widefield fluorescence microscope** Leica DMi8 S Inverted widefield platform for transmitted-light and fluorescence microscopy of compatible cell and tissue preparations.	Reporter fluorescence, multichannel localisation and compatible live-cell imaging when environmental controls are available.

3D imaging & surface microscopy

Examine internal structure, optical layers and surface topography in research specimens.

	Instrument & specifications	Assays
 95	**High-resolution bench micro-CT scanner** Bruker SKYSCAN 1276 Compact X-ray micro-CT scanner with a 40-100 kV source and nominal minimum pixel size of 2.8 µm.	Three-dimensional morphology of bone, dental materials and compatible contrast-enhanced specimens.
 147	**X-ray microscope for materials micro-CT** Non-destructive X-ray computed tomography reconstructs internal three-dimensional structure from multiple projections.	Porosity, internal defect and structural analysis for compatible biomaterials, scaffolds and solid specimens.
 104	**Optical coherence tomography system** Low-coherence optical interferometry acquires depth-resolved cross-sections without physically sectioning a sample.	Non-destructive cross-sectional imaging and layer-thickness measurements in optically suitable tissues or coatings.
 103	**Confocal and interferometric profilometer** Leica DCM8 Non-contact 3D optical metrology platform combining confocal imaging and interferometry for fine surface profiling.	Surface texture, roughness, geometry and step-height measurements on compatible films, materials and coatings.
 77	**3D optical interference profilometer** Bruker Contour GT Non-contact interferometric surface metrology with nanometre-scale vertical resolution and a 150 mm XY stage.	3D surface topography and roughness analysis of compatible biomaterials, polymer films, coatings and engineered surfaces.
 65	**Atomic force microscope** Topometrix Explorer 2000 TrueMetrix Contact, tapping and lateral-force modes with 100 × 100 µm and 2.5 × 2.5 µm scanners, plus a liquid scanner.	Nanometre-scale surface topography, roughness measurements and lateral-force mapping of compatible specimens.

Transmission electron microscopy

Resolve nanostructure, crystalline interfaces and biological ultrastructure.

	Instrument & specifications	Assays
	**Cold-FEG TEM / STEM** JEOL JEM-F200 80 and 200 kV cold field emission with annular bright- and dark-field STEM detectors and an EDS system.	High-resolution imaging of nanostructures and interfaces, electron diffraction and elemental mapping of compatible specimens.
	**High-resolution transmission electron microscope** JEOL JEM-2011 200 kV LaB_6 source, 0.19 nm HRTEM resolution and a 20-megapixel CMOS camera. Single- and dual-tilt holders.	Lattice imaging, selected-area and convergent-beam electron diffraction, and interface analysis in suitable solids.
	**High-resolution transmission electron microscope** JEOL JEM-2000FX 200 kV high-resolution transmission electron microscope with reported point resolution of 0.28 nm.	High-resolution microstructure and lattice imaging of suitable solid materials, with electron diffraction for structural studies.
	**Conventional transmission electron microscope** JEOL JEM-1010 100 kV TEM with 0.5 nm reported resolution, KeenView G2 CCD imaging and a beam-precession accessory.	Nanoscale morphology and structural characterisation of electron-transparent solid samples and particle preparations.
	**Transmission electron microscope for ultrastructure** JEOL JEM-1011 Conventional TEM platform with an accelerating voltage of up to 100 kV for electron-transparent specimens.	Ultrastructure imaging of fixed biological sections and morphology of suitably prepared particles and materials.

Scanning microscopy & preparation

Characterise surfaces and prepare specimens for high-resolution imaging.

	Instrument & specifications	Assays
 71	**Field-emission scanning electron microscope** JEOL JSM-7610FPlus Schottky field-emission SEM with energy-dispersive X-ray spectroscopy for point, line and area analysis.	High-resolution surface and particle morphology, coating and scaffold structure, and elemental composition mapping.
 72	**Low-vacuum scanning electron microscope** JEOL JSM-6390LV Scanning electron microscope with low-vacuum operation. The platform is listed for SEM and EDS workflows.	Surface micrographs of compatible materials and particles, with elemental microanalysis when the detector is available.
 102	**High-vacuum sputter coater** Leica EM ACE600 High-vacuum film deposition system for thin metal or carbon coatings, depending on the deposition source.	Apply conductive or protective films to compatible specimens before scanning or transmission electron microscopy.
 106	**Precision specimen preparation system** Leica EM TXP Targeted cross-sectioning and mechanical specimen preparation with integrated optical observation of the work area.	Trim, grind and polish selected areas for optical or electron microscopy, or prepare sections for further ion-beam thinning.

Particle sizing & dispersions

Measure size distributions in compatible dispersions, emulsions and powders, and colloidal charge where relevant.

	Instrument & specifications	Assays
	**Dynamic light scattering and zeta potential** Malvern Panalytical Zetasizer Nano ZS 173° backscatter DLS and electrophoretic light scattering for hydrodynamic size, polydispersity and zeta potential.	Characterise liposomes, lipid nanoparticles and other compatible colloids. Compare size, dispersity and zeta potential.
	**Wet-dispersion laser diffraction** Malvern Panalytical Mastersizer 3000E / Hydro EV Wet-dispersion laser diffraction with Hydro EV recirculation and ultrasound for suitable suspensions and dispersed powders.	Measure volume-based particle size distributions in compatible powders, suspensions, aggregates and larger droplets.
	**Laser diffraction particle sizing** Anton Paar PSA 1190 Multi-laser diffraction. Nominal ranges are 0.04-2,500 µm in liquid and 0.1-2,500 µm dry, subject to configuration.	Compare volume-weighted particle size distributions for compatible powders, granules, dispersions and process lots.

Interfacial rheology & wettability

Measure interfacial mechanics, droplet shape and how liquids spread on surfaces.

	Instrument & specifications	Assays
 110	**Interfacial rheology** Anton Paar Physica MCR 301 / IRS Rotational rheometer fitted with an interfacial rheology system for measurements at suitable liquid interfaces.	Compare interfacial film mechanics and viscoelastic response at model liquid interfaces under agreed test conditions.
 111	**3D drop contour and forced wetting** Kerberos Three-dimensional drop-contour analyser designed to reconstruct drop shape during forced wetting experiments.	Compare droplet spreading and wetting behaviour on solid surfaces while tracking changes in the three-dimensional drop profile.
 127	**Contact-angle measurement** Optical measurement of the angle formed by a liquid droplet where it meets the tested solid surface.	Compare wettability and hydrophobicity across compatible coatings, films, substrates and surface treatments.

Thermal analysis

Assess thermal transitions, mass loss and stability in suitable materials.

	Instrument & specifications	Assays
	**Differential scanning calorimetry** Heat-flow measurements during programmed temperature ramps or isothermal holds using compatible sample pans.	Measure melting and crystallization transitions and assess glass-transition behaviour in compatible polymers and formulations.
	**Thermogravimetric analysis** SETARAM Labsys evo TGA/DSC 1150 25-1,150 °C thermal analysis with mass and heat-flow acquisition, controlled atmosphere and programmed ramps or holds.	Mass-loss profiles, moisture and volatile content, decomposition and oxidation behaviour in compatible specimens.
	**Simultaneous thermal analysis** NETZSCH STA 449 F5 Jupiter Simultaneous TGA and DSC with documented heating rates of 0.001-50 K/min and a nitrogen atmosphere option.	Correlate mass loss with thermal transitions to investigate melting, crystallization and thermal stability of materials.

Surface & elemental analysis

Compare surface chemistry and elemental composition in suitable materials.

	Instrument & specifications	Assays
 105	**CHNS/O elemental analysis** Bulk elemental analyser for measuring carbon, hydrogen, nitrogen, sulfur and oxygen in compatible matrices.	Determine bulk elemental composition of suitable polymers, powders and research samples such as food or environmental specimens.
 56	**XPS / AES surface analysis** Kratos AXIS Ultra DLD 165 mm analyser, delay-line detector and monochromated Al Kα source. Small-area analysis down to 15 µm.	Measure surface elemental composition and chemical states. Request elemental mapping or depth profiling for compatible solids.
 112	**X-ray fluorescence spectrometry** Elemental analysis by X-ray fluorescence. Powder samples can be prepared as pressed pellets or fused glass beads.	Screen inorganic powders for elemental composition and compare suitable raw materials, formulations or process lots.

X-ray diffraction & scattering

Compare crystallinity, solid forms, coatings and interfaces in suitable materials.

	Instrument & specifications	Assays
 158	***In situ* and *in operando* X-ray diffraction** Rigaku SmartLab SE Cu and Mo sources with 1D/2D detectors and options for *in situ* heating, vacuum or controlled atmospheres.	Identify and quantify crystalline phases and track how phases change under agreed temperature or atmosphere conditions.
 157	**Advanced X-ray diffraction and scattering** Rigaku SmartLab XE Cu/Mo sources and 1D/2D detectors support XRD, reflectivity, grazing-incidence diffraction and SAXS/GISAXS.	Study phases, layer thickness and roughness, residual stress and nanoscale structure in suitable films, powders and materials.
 108	**Single-crystal X-ray diffraction** Bruker system with APEX II CCD Four-circle kappa goniometer, APEX II CCD detector and a focused X-ray source. Data collection down to 100 K.	Determine unit cells, space groups and crystal structure for suitable single crystals, with structure refinement where applicable.
 55	**Multi-geometry X-ray diffraction** Rigaku Ultima+ Cu radiation, two-circle goniometer and automated alignment. Bragg-Brentano and grazing-incidence geometries.	Identify and quantify crystalline phases in powders and bulk solids. Characterise thin films and coatings by grazing incidence or reflectivity.
 114	**X-ray diffraction** XRD-600 X-ray diffractometer for solid materials. Measurement geometry and achievable resolution depend on specimen and configuration.	Identify crystalline phases and compare crystallinity in suitable solid formulations, powders and materials.

Molecular & optical spectroscopy

Identify molecular structures, spectral signatures and chemical environments.

	Instrument & specifications	Assays
 63	**600 MHz NMR Spectrometer** Agilent Technologies 600 MHz instrument for solution- and solid-state NMR with variable-temperature acquisition.	Molecular structure elucidation, pharmaceutical polymorph screening and characterisation of polymers or membrane interactions.
 64	**500 MHz NMR Spectrometer** Agilent Technologies 500 MHz solution NMR with 1D, 2D and variable-temperature measurements for ^{1}H, ^{13}C, ^{31}P, ^{11}B and ^{15}N.	Structure elucidation and research-grade purity assessment of small molecules and compatible solution samples.
 81	**FTIR Spectrometer and Infrared Microscope** Agilent Cary 670 + Cary 620 Bulk FTIR from 6,000 to 120 cm^{-1}, with reflectance, diamond ATR, infrared microscopy and 64 × 64 detector-array mapping.	Functional-group identification and spatial chemical mapping of polymers, coatings, biomaterials and particulate samples.
 73	**Fluorescence Spectrophotometer** Hitachi F-2500 Benchtop fluorometer with wavelength-scanning excitation and emission optics for compatible fluorescent samples.	Excitation and emission scans, fluorophore profiling and quantitative fluorescence assays with suitable standards.

Formulation processing & device prototypes

Explore formulation processing, mechanical performance and early device prototypes.

	Instrument & specifications	Assays
 68	**Laboratory Spray Dryer** Yamato ADL311S-A Bench-scale dryer for mainly aqueous feeds, with adjustable airflow and feed rate and up to 220 °C inlet temperature.	Research-scale powder production, drying-condition screening and microencapsulation of suitable bioactive ingredients.
 156	**Supercritical CO_2 Extraction System** Core Separations SFX5L Supercritical and subcritical CO_2 extraction with adjustable pressure, temperature and flow, and co-solvent dosing.	Extraction and fractionation of bioactives from compatible solid natural materials and agri-food feedstocks.
 144	**Universal Mechanical Test Frame** Instron 34TM-5 Dual-column electromechanical Universal Testing Machine with a nominal force capacity of 5 kN.	Tensile, compressive and bending tests with fixtures selected for specimen geometry and test method.
 148	**Polymer Selective Laser Sintering System** EOS FORMIGA P110 Powder-bed laser sintering for polymers, with PA12, PA11, TPU and aluminium-filled polyamide among material options.	Polymer prototypes, functional parts and test coupons for design iteration and mechanical evaluation.
 153	**Metal Laser Powder-Bed Fusion System** EOS EOSINT M 280 Direct metal laser sintering for suitable light alloys, stainless steels, tool steels and superalloys.	Metal prototypes, functional components, tooling inserts and complex features such as internal channels.

Elpida BioPharm P.C.

Discuss a project

Tell us what you need to measure. We will use your project brief to define a feasible assay plan and prepare a quotation.

This catalogue is a selection. If a platform or assay is missing, ask us about equipment and methods that may be available on request.

What to include

- Sample type, number and any handling requirements
- Targets, endpoints or the problem you need to solve
- Requested deliverables and intended timing

Project enquiries

elbiopharm.com/discuss-a-project

dr.alex.yar@gmail.com

+30 697 024 1994