

Elpida BioPharm P.C.

Contract Research & Preclinical Development

Integrated cellular, tissue and animal research.
Mice, rats, rabbits and short-duration porcine studies.
Formulation, nanomedicine, biomaterials and bioanalysis.

Thessaloniki, Greece

www.elbiopharm.com

Capabilities at a glance

Elpida BioPharm P.C. is a scientist-led contract research company and biotechnology developer in Thessaloniki, Greece. We work with biotech, pharmaceutical, medtech and academic teams.

Bring a study question or a product brief. We can design and source a candidate, prepare research batches or prototypes, and coordinate testing at specialist facilities through to a preclinical report.

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Project scope

For each study we agree the models, specialist facilities, required approvals, quality requirements and deliverables. Additional standard and bespoke models can be scoped on request.

Safety & toxicology

Identify potential safety liabilities at the cellular, tissue and whole-animal level, then define the specialist studies appropriate to the candidate and its intended use.



Area of study	Study scope	Readouts
Systemic toxicity	Single- and repeat-dose studies, including acute, subchronic and chronic exposure. Acute work can address LD_{50} where scientifically justified.	Clinical signs, body weight, food intake, haematology, blood chemistry, urinary markers, organ weights and histopathology.
Cellular & local effects	Assess cellular compatibility, local tolerance and irritation in models relevant to ocular, dermal or inhaled exposure.	Viability, membrane injury, apoptosis, oxidative stress and local tissue findings.
Blood & immune effects	Examine blood compatibility, immunotoxicity, allergenicity and sensitisation for drugs and materials.	Haemolysis, coagulation, complement, cytokines, immune-cell activation and sensitisation findings.
Safety pharmacology	Investigate functional effects on the cardiovascular, respiratory and central nervous systems.	Candidate-specific physiological or behavioural changes interpreted alongside exposure.
Reproduction & development	Scope specialist studies of fertility, embryo-fetal effects, pre- and postnatal development and juvenile exposure.	Reproductive outcomes and development during the relevant exposure window.
Genetic & long-term risk	Plan genotoxicity screening and specialist carcinogenicity programmes around the product and the intended use of the data.	Agreed genetic or long-term endpoints and a documented rationale for further testing.

Exploratory and regulatory studies

Exploratory screens can guide candidate selection. For work intended for regulatory use, we agree the facility, applicable standards, quality framework, approvals, duration and documentation before the study begins.

Pharmacological activity

Compare the strength, duration and mechanism of a therapeutic effect against a relevant reference treatment.



Area of study	Study scope	Readouts
Pain & local anaesthesia	Assess analgesic, anti-inflammatory and local anaesthetic effects.	Dose–response, functional activity and duration of effect.
CNS & behaviour	Study anticonvulsant, anxiolytic, sedative and cognitive effects, including exploratory alcohol-use therapies.	Behavioural and functional outcomes interpreted alongside tolerability.
Cardiovascular function	Examine blood pressure, ischaemia and responses to hypoxia, including cerebrovascular applications.	Perfusion, tissue injury and recovery.
Metabolism & organ protection	Evaluate antidiabetic, hepatoprotective and exploratory adaptogenic effects.	Metabolic function, biochemical markers of organ protection and stress responses.
Inflammation & airways	Test anti-inflammatory activity in asthma, allergic airway conditions and other inflammatory disorders.	Inflammatory markers, tissue response and airway function.
Haemostasis & repair	Assess haemostatic and wound-healing candidates, including therapeutic materials.	Time to effect, restored function and histological evidence of repair.
Specialist indications	Develop exploratory studies for antidotes and other indication-specific candidates.	Efficacy against a relevant comparator using a predefined functional endpoint.

Selecting the model

We can combine a functional endpoint with exposure, biomarkers or histology. Additional standard and bespoke models are available on request.

Pharmacokinetics & biodistribution

Measure exposure across time, tissues and routes. Discovery drug metabolism and pharmacokinetics (DMPK) studies help explain the differences between candidates.



Area of study	Study scope	Readouts
***In vivo* pharmacokinetics**	Compare single and repeated doses, routes and formulations in plasma, blood cells and tissues.	Absolute or relative bioavailability, exposure, accumulation, persistence and clearance.
Tissue distribution	Track drug or reporter distribution in organs, target tissues and selected cell types.	Tissue exposure, local retention and a map of target access.
***In vitro* ADME**	Measure plasma or blood stability, microsomal or hepatocyte stability, protein binding and blood partitioning.	Stability, binding and metabolic liabilities.
Transport & permeability	Examine solubility, epithelial permeability and selected uptake or efflux transporters.	Route feasibility and evidence for formulation or candidate selection.
Metabolism & elimination	Quantify small molecules, biologics or delivery markers. Profile selected metabolites and excretion where relevant.	Parent and metabolite exposure and elimination patterns.
Exposure–response	Relate exposure to target engagement, biomarkers, efficacy and tolerability.	A PK/PD interpretation to inform the next study.

Define the measured entity

A study can follow the parent compound, payload, carrier or a functional marker. We agree the analyte and matrix before sample collection.



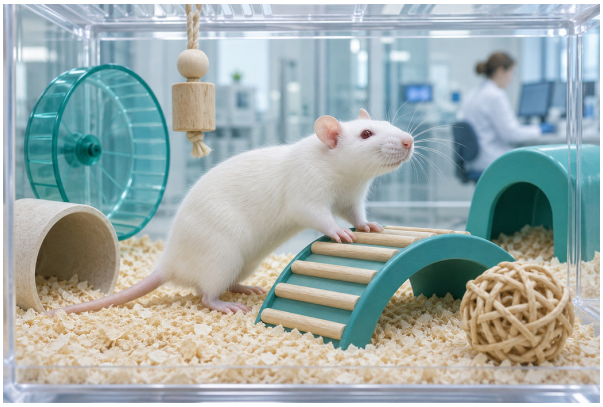
Mouse disease models

Select a model that matches the mechanism, immune background and tissue of interest. Link candidate exposure to a functional or disease-specific response.

Area	Representative models	Study readouts
Oncology	Syngeneic MC38, CT26, 4T1 and B16 tumours, human cell-line xenografts in suitable immunodeficient hosts, and selected leukaemia models.	Tumour response, tissue exposure, immune profiles, proliferation, apoptosis and histology.
Metabolism & liver	Diet-induced obesity and insulin resistance, *ob/ob* and *db/db* mice, type 1 and type 2 diabetes including selected chemically induced models, metabolic syndrome, MASLD, MASH, liver injury and fibrosis.	Weight, food intake, glucose regulation, lipids, liver markers and tissue pathology.
Gut & immunity	Acute or chronic DSS colitis, TNBS colitis, other immune-mediated intestinal inflammation, lupus and systemic inflammation. Probiotic or prebiotic evaluation in relevant gut or metabolic models.	Disease activity, barrier function, cytokines and intestinal histopathology.
Lung & airways	Asthma and allergic airway inflammation, COPD, emphysema, pulmonary fibrosis and inflammatory lung injury, including acute lung injury.	Inflammatory-cell recruitment, fibrotic markers, lung structure and histology.
Heart, vessels & kidney	Atherosclerosis, myocardial infarction, heart failure, acute or chronic kidney disease and ischaemia–reperfusion injury.	Organ function, injury markers, inflammation, fibrosis and histopathology.
CNS & pain	Experimental autoimmune encephalomyelitis (EAE) for multiple sclerosis, Alzheimer's and Parkinson's disease, stroke, traumatic brain injury, cognitive or behavioural models, and neuropathic pain.	Motor, sensory and cognitive outcomes, neuroinflammation and tissue pathology.
Skin & eye	Psoriasis-like inflammation, atopic or contact dermatitis, epidermolysis bullosa, wound repair, burns, and retinal or corneal disease.	Lesion severity, re-epithelialisation, local inflammation and tissue organisation.
Joints, bone & muscle	Collagen-induced or collagen antibody-induced arthritis for rheumatoid arthritis, osteoarthritis, osteoporosis and Duchenne muscular dystrophy.	Joint inflammation, musculoskeletal function, cartilage and bone changes, and biomarkers.

Specialist mouse models

Orthotopic and metastatic tumour formats, specialist strains, genetically engineered or humanised models, and less common disease applications can be scoped on request.



Rat disease models

Relate exposure to organ function, behaviour and tissue response. Studies can combine clinical pathology, imaging, histology and molecular analysis.

Area	Representative models	Study readouts
Heart, vessels & lung	Hypertension, myocardial infarction or ischaemia–reperfusion, heart failure and vascular injury. Asthma, emphysema, pulmonary fibrosis and pulmonary hypertension.	Cardiac, vascular or respiratory function, injury markers, fibrosis and histopathology.
CNS & stroke	Parkinsonian models including 6-OHDA, Alzheimer's disease, ageing, cognitive impairment, neuroinflammation, epilepsy, cerebral ischaemia–reperfusion, ischaemic or haemorrhagic stroke, and brain or spinal trauma.	Motor and behavioural performance, neurological function, neurochemical markers and pathology.
Pain, vision & hearing	Inflammatory pain, peripheral nerve injury and chemotherapy-associated neuropathy. Glaucoma, corneal injury, retinal degeneration, ototoxicity and noise-related hearing loss.	Sensory, visual or auditory function, tissue structure and molecular markers.
Metabolism & liver	Diet-induced metabolic dysfunction, obesity, metabolic syndrome, diabetes and its complications, MASLD, MASH, liver injury and fibrosis.	Glucose and lipid regulation, blood chemistry, liver injury, inflammation and fibrosis.
Kidney	Acute kidney injury, renal ischaemia–reperfusion and selected chronic kidney disease models.	Renal function, blood and urine chemistry, tissue injury and histology.
Gut & inflammation	Colitis, peptic ulcer and selected inflammatory diseases. Probiotic or prebiotic evaluation in relevant intestinal or metabolic models.	Disease activity, systemic biomarkers, local inflammation and tissue pathology.
Joints, bone & soft tissue	Inflammatory arthritis, osteoarthritis, osteoporosis, fractures and bone defects, and tendon or ligament injury.	Musculoskeletal function, structural repair, tissue integration and histology.
Skin & specialist models	Dermatitis, burns, wound healing and dermal fibrosis. Selected tumour and reproductive-function studies can be scoped on request.	Wound closure, tissue response and repair, or endpoints specific to the specialist indication.

PK and formulation comparisons

Compare systemic or local formulations after single or repeated exposure in healthy rats or disease models. Readouts include concentration–time profiles, tissue distribution, target exposure and exploratory tolerability.



Rabbit disease models

Investigate local exposure, tissue repair and device performance in anatomically relevant models. Pair functional endpoints with imaging, clinical pathology and molecular analysis.

Area	Representative models	Study readouts
Ocular disease	Corneal injury and repair, dry eye, ocular inflammation, neovascularisation, glaucoma, cataract and selected retinal disease.	Ocular examination, staining, imaging, local tissue response and histopathology.
Ocular formulations	Eye drops, gels, drug-releasing contact lenses and other locally delivered prototypes.	Local exposure, release, retention and ocular tolerability.
Skin & wounds	Cutaneous wounds and burns, rabbit-ear wound and scar models, hypertrophic scarring and cutaneous fibrosis. Topical and local treatment studies.	Wound closure, re-epithelialisation, granulation, scar characteristics and histology.
Bone, cartilage & dental	Bone and osteochondral defects, cartilage repair, osteoarthritis, fractures, osteoporosis, and periodontal or jaw defects.	New tissue formation, integration, imaging, histology and mechanical performance.
Soft tissue & nerve repair	Tendon and ligament injury, peripheral nerve repair, and soft-tissue regeneration with scaffolds or hydrogels.	Repair quality, tissue organisation, host response and mechanical or functional recovery.
Biomaterials & devices	Local implantation, tissue integration, degradation or resorption, and drug-releasing materials.	Local reaction, integration, material persistence and biological performance.
Heart, vessels & metabolism	Hypercholesterolaemia and atherosclerosis, hypertension, myocardial infarction, heart failure, aneurysm, thrombosis, ischaemia–reperfusion injury, diabetes and its complications, and MASLD.	Lipids, vascular pathology, organ function and tissue injury.
Specialist indications	Selected VX2 tumours, acute lung injury, sinonasal and middle-ear disease, urethral stricture, and urinary-tract injury or reconstruction.	Indication-specific function, imaging, tissue response and histopathology.

Local and systemic pharmacokinetics

A study can follow drug exposure in target tissues alongside local retention, functional response and exploratory safety. Additional standard or custom models are scoped to the project.



Short-duration studies in domestic pigs

Conventional domestic pigs provide the anatomy and tissue access needed for a single acute session or a short, predefined observation period.

Area of study	Study scope	Readouts
Devices & procedures	Evaluate catheter, endoscopic and other procedural prototypes during access and deployment.	Handling, immediate function and local tissue findings.
Cardiovascular & vascular	Study acute haemodynamics, electrophysiology, perfusion and device performance.	Physiology and blood flow supported by imaging or tissue analysis.
Skin & local exposure	Compare topical, intradermal and other local formulations.	Early penetration, retention, reporter distribution, local response and histology.
PK & biodistribution	Measure short-term exposure to drugs, biologics or delivery systems and collect target tissues.	Concentration–time profiles and tissue concentrations.
Imaging & monitoring	Evaluate imaging agents, monitoring technologies and image-guided procedures.	Signal localisation and target visualisation confirmed against tissue findings.
Biomaterials & tissues	Examine acute tissue contact, implantation feasibility and prototype function. Collect samples for *ex vivo* analysis.	Permeation, histology, molecular findings and early tissue response.

Planning the observation window

We agree the duration, peri-procedural care, observation and sampling before the study. The full programme, including animal housing, is scoped for this short window.

Organ & disease pharmacology

Match the intended therapeutic effect to a functional endpoint, then use cellular, biomarker and tissue measurements to explain the response.



Area of study	Study scope	Readouts
Metabolic & endocrine	Examine obesity, diabetes, insulin resistance and selected endocrine conditions.	Body weight and composition, glucose regulation, lipid profiles and tissue response.
Gut, skin & joints	Assess colitis, epithelial barrier dysfunction, inflammatory arthritis, skin inflammation and other immune-mediated disease.	Disease activity, barrier integrity, joint or skin function, cytokines and histology.
Cardiovascular	Evaluate hypertension, ischaemia–reperfusion and cardiac or vascular injury.	Blood pressure, perfusion, functional recovery, injury biomarkers and tissue changes.
Liver, kidney & lung	Assess organ injury, fibrosis, renal dysfunction and inflammatory airway or pulmonary disease.	Organ function, blood and urinary markers, inflammatory findings and fibrosis.
Neurology & pain	Study Parkinsonian, cognitive and neuroinflammatory changes and investigate neuropathic or inflammatory pain.	Motor, sensory and behavioural outcomes alongside molecular and tissue findings.
Sensory organs & repair	Investigate ocular disease or local exposure, ototoxicity, wound repair and bone, cartilage or tendon regeneration.	Vision- or hearing-related function, local exposure, tissue structure and repair.

Rare disease and custom models

For a new indication, a mechanistic cell assay or small feasibility study can establish whether an endpoint captures the disease process before a dedicated animal study.

Oncology & immune models

Connect tumour response with target engagement, exposure and immune-cell behaviour in models selected for the candidate's mechanism of action.



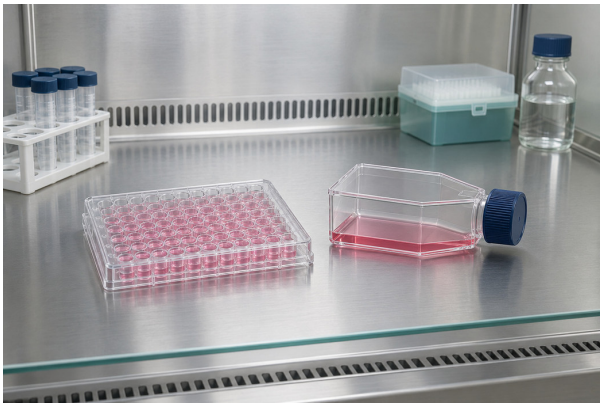
Area of study	Study scope	Readouts
Cellular oncology	Compare candidates in tumour cell cultures and spheroids using mechanism-linked assays.	Potency, proliferation, apoptosis and biomarker profiles for candidate ranking.
Tumour models	Select syngeneic or human cell-line xenograft models. Orthotopic, metastatic and other specialist formats are scoped individually.	Tumour response, tissue exposure, histology and molecular markers.
Combination studies	Compare single agents, immunotherapies, treatment combinations and delivery systems in the same model.	The contribution of each component, interaction patterns and the size of an added effect.
Immune-cell function	Study peripheral blood mononuclear cells, other immune cells and co-cultures using functional assays and immunophenotyping.	Cell activation, cytokines and tissue immune profiles alongside unwanted inflammation.
Biologics & engagement	Evaluate antibody and protein pharmacology against the intended receptor or pathway.	Receptor occupancy, pathway activity and functional response interpreted with exposure.
Immunogenicity	Examine antibody and cellular responses to vaccine or biologic research candidates.	Specificity, magnitude and persistence of the immune response.

Selecting a host background

Target expression, the immune compartment needed for activity and the reference treatment guide the choice of an immunocompetent, immunodeficient or specialist model.

Cellular assays & functional activity

Use concentration–response and mechanism-specific assays to rank candidates and distinguish cellular uptake from a functional effect.



Area of study	Study scope	Readouts
Cell systems	Select established or primary epithelial, endothelial, immune, tumour or fibroblast models, including co-cultures and spheroids.	A cellular system and controls matched to the mechanism.
Activity & potency	Measure viability, proliferation, apoptosis and mechanism-linked effects across concentrations.	Effect size, potency and candidate ranking.
Uptake & trafficking	Use fluorescence or luminescence tracking, microscopy and flow cytometry.	Cell association, uptake, cell-type selectivity and intracellular localisation.
Functional expression	Monitor reporter expression, gene-expression changes and functional responses to mRNA, siRNA or other payloads.	Expression or silencing alongside uptake and compatibility.
Barrier & repair	Study epithelial and endothelial permeability, cell migration, wound repair and skin-related responses.	Transport, barrier function, repair and local compatibility.
Immune & metabolic responses	Measure immune-cell activation, cytokines, oxidative stress and mitochondrial or metabolic activity.	Evidence of mechanism and unwanted cellular effects.
Cell–material interactions	Compare cell attachment, morphology and proliferation on hydrogels, coatings and scaffolds or following exposure to material extracts.	Compatibility and comparative prototype performance.

Interpreting a cellular signal

Reference conditions, controls and an independent functional readout help determine whether a change in uptake translates into the intended biological activity.

Barriers, tissues & 3D models

Study candidates in systems that reproduce tissue architecture, a transport barrier or the interface between a material and living cells.



Area of study	Study scope	Readouts
Barrier systems	Use epithelial or endothelial monolayers, co-cultures and route-specific transport models.	Permeability, barrier integrity, transport and local compatibility.
Spheroids & organoids	Compare tumour and tissue spheroids, organoids and extracellular-matrix co-cultures.	Penetration, spatial activity, viability and model-specific function.
Skin & ocular tissues	Study dermal and corneal products in reconstructed tissues or suitable explants.	Penetration, retention, local distribution, tissue response and histology.
***Ex vivo* preparations**	Examine drugs, biomaterials and devices in collected tissues, tissue slices and organotypic preparations.	Tissue-level exposure, functional response and molecular endpoints.
Perfused systems	Scope organ-on-chip and other perfused models around the available platform and biological materials.	Feasibility or validation against reference measurements.
Regenerative products	Assess cell phenotype, viability, secreted factors, cell tracking and cell–scaffold interactions.	Persistence, repair and intended tissue function.

Linking tissue and animal evidence

Tissue source, reference measurements and sampling can be selected to clarify an *in vivo* observation or focus the next animal experiment.

Nanoparticle design & synthesis

We turn a research question or product brief into a nanocarrier design and synthesise research batches for characterisation and preclinical evaluation.



Development stage	Work performed	Deliverables
Research brief	Define the intended use, payload, target tissue, administration route, release profile and criteria for advancing a candidate.	Design requirements and suitable comparators.
Carrier platforms	Select among lipid nanoparticles (LNPs), liposomes, polymeric, metallic and magnetic nanoparticles, metal–organic frameworks (MOFs), and hybrid or biomimetic carriers.	A shortlist with the rationale for each platform.
Formulation design	Design carriers for small molecules, proteins, peptides or nucleic acids and for systemic, oral, topical, intradermal, pulmonary or ocular delivery.	Formulation specifications matched to the cargo and route.
Surface & release	Develop surface-functionalised or ligand-targeted carriers, local depots and controlled-release formulations as appropriate to the application.	Prototype variants and a reference formulation.
Materials sourcing	Source agreed lipids, polymers, excipients, payloads and reference materials or work with client-supplied components.	Traceable materials and supplier documentation.
Synthesis & research batches	Synthesise particles, formulate the selected payload and prepare comparative research-scale batches for physical and biological testing.	Research batches, preparation records and samples for testing.

Project starting points

Bring a target product profile, payload, existing formulation or prepared particle library. The testing and preclinical programme is outlined on page 15.

Nanoparticle testing & preclinical studies

We characterise Elpida-developed and client-supplied particles, then compare their performance in cellular, tissue and animal models.



Area of study	Study scope	Readouts
Size, shape & surface	Measure particle size, dispersity and morphology by appropriate scattering and microscopy methods. Assess surface charge, composition and relevant modifications.	Comparable physicochemical profiles.
Loading, release & stability	Quantify payload loading or encapsulation, compare release and track particle and payload integrity during storage, handling or exposure to relevant media.	Loading, release and stability data.
Biological compatibility	Assess serum interactions and cellular or blood compatibility where relevant to the intended route.	Compatibility data to guide candidate selection.
***In vitro* evaluation**	Compare uptake, intracellular localisation, functional delivery and cellular activity in selected models. Assess tissue or barrier performance where relevant.	Activity and compatibility data for each candidate and comparator.
***In vivo* evaluation**	Assess pharmacokinetics, biodistribution, local retention, tolerability and early efficacy using a model matched to the study objective.	Exposure, tissue distribution and preclinical performance data.
Lead selection	Integrate formulation, characterisation and biological findings against the agreed criteria for the next development stage.	A ranked shortlist and a rationale for the next study.

Cargo-specific endpoints

For gene therapy and biologics, the assays on page 16 can establish whether measurable delivery translates into expression, silencing or another functional response.

Gene therapy & biological payloads

We co-design therapeutic research candidates and assess whether a nucleic acid, protein or peptide reaches the intended cells and produces the intended effect.



Area of study	Study scope	Readouts
Candidate design	Define payload specifications and non-viral delivery candidates for therapeutic mRNA, siRNA, oligonucleotides and selected DNA applications.	A candidate set and payload-specific success criteria.
Payload and batches	Use client-supplied payloads, source them or coordinate specialist production. Prepare research-scale formulations and assess payload integrity and stability.	Traceable payload and batch records with quality data.
RNA and DNA function	Measure cellular uptake and intracellular localisation alongside reporter expression, gene silencing or another relevant functional endpoint.	Expression or silencing data interpreted alongside uptake and viability.
Proteins and peptides	Assess the stability, release, retained activity and target interaction of protein, peptide or antibody-based candidates after formulation.	A comparison of functional potency across preparations.
Target-tissue activity	Measure local retention, tissue and cell-type distribution, functional response, early efficacy and tolerability in selected preclinical models.	Evidence connecting exposure with activity at the intended site.

Interpreting a delivery signal

Free payload, vehicle, reference carrier and assay controls help determine whether a measured effect reflects cargo activity, the carrier or the biological model.

Immunotherapy development

We design and evaluate immune-directed research candidates around a defined mechanism, then follow the intended immune response from cellular assays into relevant disease models.



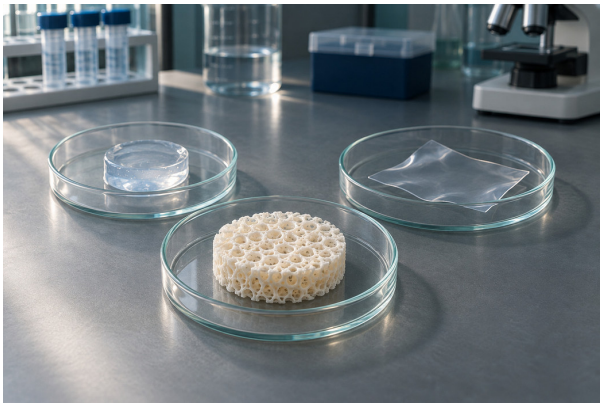
Area of study	Study scope	Readouts
Therapeutic concept	Co-design protein, peptide, antibody or therapeutic RNA candidates around the target, indication, intended immune response and reference treatment.	A mechanism-linked candidate specification.
Candidate preparation	Source agreed immunomodulators or coordinate specialist production. Prepare research batches and assess identity, stability, release and retained activity as appropriate.	Documented research formulations and activity measurements.
Immune-cell activity	Measure concentration-response, target engagement, pathway activity and functional immune-cell responses in cellular systems or co-cultures.	Potency and immune-response profiles for each candidate.
Combination studies	Compare a proposed combination with its individual components and a relevant reference treatment.	A measure of added activity and its relation to the proposed mechanism.
Disease-model response	Connect exposure, immune profiling and tissue response with efficacy and tolerability in suitable tumour or immune-disease models.	Evidence linking immune modulation to the disease outcome.

Choosing an informative endpoint

An immune marker can show that a pathway responded. Measuring a functional outcome in the same study helps establish whether that response supports the therapeutic hypothesis.

Biomaterials design & fabrication

We translate the intended use into a material specification, procure components and fabricate research prototypes with defined structural, mechanical or release properties.



Development stage	Work performed	Deliverables
Design requirements	Define composition, architecture, mechanics, drug release and tissue-contact requirements around the client's application.	A material specification and prototype comparison plan.
Materials procurement	Select and source raw materials, grades, components, reference products or finished materials to the agreed specification.	A materials list with supplier and traceability records.
Prototype fabrication	Produce research hydrogels, scaffolds, coatings, drug-loaded constructs and selected device prototypes, including variants for comparison.	Prototype samples with composition and fabrication records.
Ophthalmic biomaterials	Develop research hydrogel contact lenses, including drug-eluting prototypes, and ocular coatings or matrices. Optimise optical clarity, hydration and handling for the intended use.	Prototype lenses or materials and comparative material data.
Structure and mechanics	Characterise composition, morphology, porosity, surface features, swelling, rheology and mechanical performance as relevant to the application.	Comparative structural and mechanical data.
Degradation and release	Measure changes in the material over time and, for drug-loaded prototypes, the relationship between degradation and release.	Degradation and release profiles for each design.
Design handover	Review performance against the original specification and identify changes for a further design iteration.	Agreed samples, design records and a comparative characterisation report.

From a specification or a physical sample

Projects can start with a target property, a client prototype or a reference material. For lenses and other ophthalmic materials, page 19 outlines ocular performance testing.

Devices & tissue performance

We evaluate how a finished material or device performs in contact with cells, blood or tissue and how its behaviour relates to the design.



Area of study	Study scope	Readouts
Cell and blood contact	Assess cell attachment, viability and morphology on scaffolds or coatings, together with blood-contact responses where relevant.	A compatibility profile for the intended contact.
Local drug delivery	Evaluate drug-releasing coatings, depots, implants and combination products for stability, local exposure and retained biological activity.	A comparison of release, tissue exposure and functional response.
Contact lens & ocular performance	Compare lens stability, optical clarity, drug release and ocular retention. Assess corneal compatibility and local tolerability in suitable tissue or animal models.	Material and release data with ocular findings from examination, imaging or histology.
Repair and integration	Examine scaffold-cell constructs and local implants in bone, cartilage or soft tissue. Track repair, integration and material persistence.	Histological and functional evidence of tissue repair.
Device feasibility	Study prototype handling, access, deployment, imaging compatibility and immediate function in an anatomically relevant setting.	A technical feasibility assessment and documented handling observations.
Interpreting performance	Combine mechanical and structural measurements with microscopy, molecular markers and local tissue responses.	Evidence explaining a performance difference between prototypes.

Model and study duration

Rabbit ocular models are described on page 8. Mouse, rat or rabbit studies can assess repair or tissue response. Short-duration domestic-pig studies can address handling, exposure and immediate device performance.

Microbial product development

Evaluate probiotics, prebiotics, synbiotics and live biotherapeutics by linking product attributes to host responses and the intended therapeutic effect.



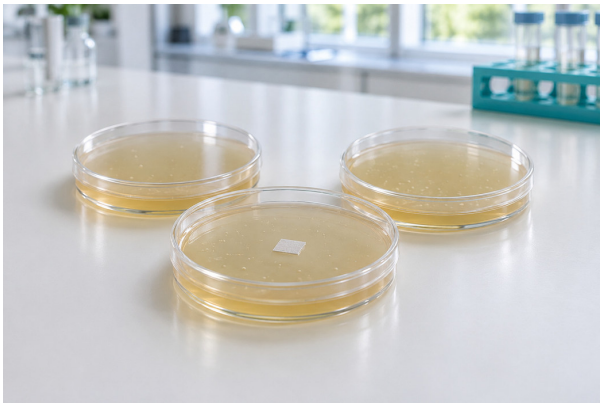
Research area	Work performed	Client output
Identity & quality	Culture and identify suitable research bacteria and fungi. Compare strains, consortia and formulated candidates.	Identity, growth, viability, stability and product-specific functional attributes.
Candidate selection	Compare phenotypes and screen individual strains, components and combinations against the product hypothesis.	A ranked shortlist and an experimental rationale for the selected combination.
Host interactions	Assess microbial preparations or metabolites in epithelial and immune-cell systems.	Host-cell compatibility, barrier function, inflammatory markers and tissue response.
Product behaviour	Track suitable therapeutic candidates *in vivo* and relate local or systemic exposure to tolerability.	Colonisation, persistence, distribution and shedding in the agreed sampling window.
Disease response	Study metabolic health, obesity, intestinal inflammation or another indication linked to the candidate's proposed action.	Disease activity, tissue findings and a preclinical assessment of therapeutic effect.
Microbiome profiling	Plan sampling, sequencing and bioinformatics around the expected community response.	Microbial abundance and changes in composition interpreted alongside host markers.

Choosing a product endpoint

For an intestinal candidate, pair a product measure such as viability or persistence with a host outcome such as barrier function. The comparison shows whether product behaviour accompanies the intended effect.

Antimicrobial & biofilm assays

Compare the activity of compounds, combinations and surfaces against suitable research microorganisms, using endpoints matched to the product and its intended application.



Area of study	Study scope	Readouts
Assay selection	Define the research organism, sample type, test conditions, reference material and controls.	An interpretable comparison across drug candidates, formulations or material prototypes.
Growth inhibition	Compare antimicrobial activity against selected research bacteria or fungi.	An inhibitory activity profile, including minimum inhibitory concentration (MIC) where appropriate.
Bactericidal activity	Assess whether a candidate reduces bacterial viability and how its effect changes over time.	Minimum bactericidal concentration (MBC) where appropriate, with comparative time-course data.
Combinations	Compare individual candidates and combinations using the same test system and references.	Relative activity and evidence of an interaction that merits further evaluation.
Biofilm formation	Compare biofilm formation on coatings, implant materials or wound-contact surfaces in suitable non-pathogenic systems.	Relative biofilm burden and surface-dependent differences between prototypes.
Established biofilms	Assess candidate activity against an existing biofilm under conditions relevant to the intended use.	Comparative disruption and residual viable burden for selection of the next candidate.

Selecting the appropriate surface

For a wound material or implant coating, test the finished surface against a matched reference. Its performance in contact with a biofilm may differ from that of the free compound.

Bioanalysis, imaging & pathology

Choose the method around the analyte, tissue and resolution needed to measure exposure, structure or biological response.



Research area	Work performed	Client output
Quantitative bioanalysis	Use chromatography and mass spectrometry to measure analytes in biological matrices.	Concentration–time profiles and tissue-exposure data.
Cell populations	Use multiparameter or spectral flow cytometry, fluorescence-activated cell sorting and reporter quantification.	Phenotype, cell state and cell-type-specific delivery or response.
Molecular assays	Measure gene expression by PCR or qPCR, proteins and cytokines by targeted assays, and selected molecular signatures by sequencing.	Mechanism-linked molecular readouts.
Histology & pathology	Process tissues for H&E staining, immunostaining, digital slide imaging and quantitative image analysis.	Spatial evidence of inflammation, injury, repair or integration.
Preclinical imaging	Combine fluorescence or bioluminescence imaging with confocal microscopy and selected structural imaging.	Distribution, reporter activity and tissue context.
Material analysis	Use electron microscopy, particle characterisation, spectroscopy, thermal or solid-state analysis and mechanical testing.	Structure, composition and properties linked to product performance.

Equipment & Assays catalogue

The companion catalogue gives instrument specifications and further method examples. We confirm sample suitability and measurement conditions before testing.

Study design, analysis & reporting

Define the decision a study must support, the evidence it will produce and the records the client will receive.



Research area	Work performed	Client output
Scientific planning	Review published evidence, refine the hypothesis and select models and endpoints for the intended mechanism.	An experimental plan with explicit success criteria.
Experimental design	Specify controls, comparators, sample-size rationale, randomisation and blinded assessment where applicable.	A design that accounts for important sources of variability.
Study coordination	Coordinate specialist facilities, sample logistics, assay schedules, milestones and communication.	A shared timetable and traceable sample transfers.
Quantitative analysis	Analyse statistics, images, flow cytometry and omics data, including selected *in silico* investigations.	Reviewable analyses, figures and interpretation.
Technical reporting	Integrate methods, study records, agreed data files, results and limitations with material properties, exposure and biological effects.	A technical report and follow-up options.
Scientific communication	Prepare publication materials, presentation figures and a scientific narrative. Develop the follow-on study design.	Outputs for development, publication or partnering discussions.

Contract scope

Projects range from one specialist experiment or a defined subcontract to a phased discovery and proof-of-concept programme. We agree responsibilities, documentation and deliverables before work begins.

Scientific leadership

Research experience in molecular biology, nanomedicine, gene therapy, biomaterials, microbiology and preclinical pharmacology.

Alexey V. Yaremenko, PhD

CEO & Co-Founder

A decade of research in nanomedicine, gene therapy and biomaterials, spanning formulation design, characterisation and preclinical assessment. His academic work includes Fulbright research at Harvard Medical School and Brigham and Women's Hospital and research at Aristotle University of Thessaloniki.

Nadezhda A. Pechnikova, MSc

CSO & Co-Founder

A PhD candidate at Aristotle University of Thessaloniki with FELASA-certified animal-research training. Her work connects microbiology, biomaterials and host–microbe interactions with cellular and animal studies.

Selected publications

Academic and collaborative work by the founders and their colleagues.

mRNA delivery and immunomodulation *Nature Nanotechnology*, 2025	doi.org/10.1038/s41565-025-01980-7
Drug-releasing ocular biomaterials *Aggregate*, 2024	doi.org/10.1002/agt2.586
Long-term nanoparticle fate in mice *ACS Nano*, 2021	doi.org/10.1021/acsnano.1c00687
Early nanoparticle pharmacokinetics *Journal of Controlled Release*, 2020	doi.org/10.1016/j.jconrel.2020.07.014

Internal research programmes

The company's early-stage programmes include bacterial therapeutics, immunotherapy, nanomedicine and metabolic health.

Project enquiries

For a single experiment, a research subcontract or a joint development programme, the starting point is the decision your team needs to make.



Contract research

Commission a selected assay or animal study, or a connected package covering design, procurement, research batches or prototypes, characterisation and preclinical evaluation. We agree responsibilities, milestones and deliverables before starting.

CRO subcontracting and collaboration

Engage the team for a specialist method, additional experimental capacity or a joint project. A feasibility study can establish the scope of a larger collaboration.

What to include in a first brief

A short non-confidential description of the product or hypothesis, intended indication and route, available data and samples, the decision to be made, and the timeline. An indicative budget helps us scope a realistic study.

Alexey V. Yaremenko, PhD

CEO & Co-Founder

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Non-confidential capabilities overview. Laboratory photographs are AI-generated illustrations. The companion Equipment & Assays catalogue provides instrument and method specifications.