

# SK

# Biomed

INNOVATION PROJECTS  
SKOLKOVO FOUNDATION

BIOMEDICAL TECHNOLOGIES CLUSTER



## DATA MATRIX

# MATRIX CLOUD — CLOUD-BASED APPLICATION FOR DRUG DEVELOPMENT MANAGEMENT

### COMPETITIVE ADVANTAGES /

User-friendly application design, flexible study-related modular approach, team expertise in clinical trials and data base development, cost-efficient solution.

### ESSENCE OF INNOVATION /

Protocol/Project Feasibility, Study documents automatic generation, a common workspace for all project members, implemented adaptive trial design.

### RESULTS ACHIEVED/

Two (EDC, IWRS) of twelve modules are already on market, other modules are on different stages of development.

### MARKET POTENTIAL /

Huge demand on Russian pharmaceutical market, European and American small and mid-sized pharma and biotech companies are in strong need of convenient, compliant with regulatory requirements solutions with compatible price.

### TEAM/

35 employees in-house + 6 freelancers, all have experience in clinical research, SaaS solutions and database development.



### CONTACTS /

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## SOLUBLE CAVA-FILTER

### COMPETITIVE ADVANTAGES /

Advantages:

- 1) elimination of the possibility of perforation of the vena cava with resorbtion;
- 2) elimination of the influence of epithelialization on the removal process;
- 3) exclusion of additional surgical interventions for migration.

### ESSENCE OF INNOVATION /

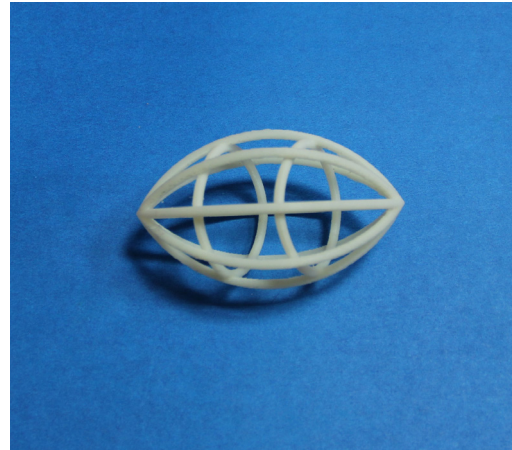
Soluble cava filter and the method of delivery to the inferior vena cava to prevent the pulmo-nary embolism (PE) at a floating deep venous thrombosis of lower extremities and recurrent pulmonary embolism. This leads to the drastical reduction of the need of additional surgical interference. Cava filter is necessary as long as there is a threat of separation of a thrombus; once the threat has passed, the filter becomes a potential source of complications, such as the inferior vena cava syndrome. We came up with the idea of creating a series of temporary soluble cava filters to prevent pulmonary embolism in a floating deep venous thrombosis of the lower extremity. This approach leads to the elimination of the need for re-operation (removal of the filer).

### RESULTS ACHIEVED/

Design, the material have been developed. A number of filter prototypes have been created. Pre-clinical studies on animal models are currently being conducted. Preliminary results are promising - the filter appears to work in model animals with no serious complications.

### MARKET POTENTIAL /

The world market for cava filters amounted to about \$1 billion. The production costs for dissolvable cava filters are less than for non-dissolvable ones. Healthcare system in Russia could save up to 600\$ per patient, as there is no need for re-operation. Moreover, hospi-tals could save \$600 per patient of their budget (reduction of the rehabilitation period, no surgery to remove the filter). The cava filter will withstand pressures in the inferior vena cava (3 mm Hg) and dissolve in the blood stream for 90-180 days.Aim.



### ECONOMIC EFFECT/

No operation - no complication.

### TEAM/

LEONID GLUSCHENKO,  
CEO, Co-Founder;  
AIDAR SHARIFULOV,  
Dr.Med.Sc., Prof., Head of R&D;  
OLEG LEIBEL,  
Deputy Dir. for Business Dev., Co-Founder.  
Director of Technopark  
“UISU-High Tech-nology”;  
OLEG OKHOTNIKOV, Market consultant.  
Head of R&D Center for Optoelectronics  
Technology, Tampere Univ., Finland.  
VLADISLAV SCHEPOCHKIN,  
Ph.D, associate technologist.

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## BIOTECHNOLOGY, LLC

# NEW SURGICAL MATERIAL – ADHESIVE BARRIER

### COMPETITIVE ADVANTAGES /

Preliminary studies show that the product is three times more effective in the prevention of adhesions. Indicators biocompatibility, hemocompatibility, strength and flexibility are better than that of analogues.

### ESSENCE OF INNOVATION /

The formation of adhesions is a common postoperative complication faced by more than 90% of patients. The new adhesion preventing bioabsorbable patch has been developed. The patch is comprised of biocompatible polymer which could be impregnated with pharmaceutical substances. The team perfected the technology to the point when the pharmaceutical substance is released at a steady rate through the period of patch dissolving.

### RESULTS ACHIEVED /

The prototype has been created. The properties of the material have been demonstrated in preliminary studies on small animals.

### MARKET POTENTIAL /

The product has the potential to occupy a significant proportion of the market (20-30%). The market is rapidly growing. According to forecasts, the volume of the global market in 2018 will be about \$ 3 billion.



### TEAM /

YULIA KUDRYAVTSEVA,  
PhD, head of the project;  
ARTEM GALEEV,  
Ph.D., a specialist in commercialization;  
ANNA BASHKIREVA,  
a specialist in clinical trials.

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## BIONOVA, LLC

# REPLACEMENT AND REGENERATION OF BONE TISSUE

### COMPETITIVE ADVANTAGES /

Fully synthetic, high regenerative potential: bone defect organotypic replacement within 4-6 months, biocompatibility and non-immune responsiveness, optimal osteoporosis, architectonics is similar to trabecular bone tissue.

### ESSENCE OF INNOVATION /

New technologies of production of ceramic materials are developed. The materials are capable of reaching necessary architectonics and metastable calcium orthophosphate microstructure via chemical transformation.

### RESULTS ACHIEVED/

Sales of 2nd generation osseointegrator TriCaFor started, bioresorbable, fully synthetic calcium phosphate based material for bone tissue regeneration. R&D of 3rd generation osteoconductive material are being carried out.

### MARKET POTENTIAL /

Field of application: dentistry, reconstructive surgery, oncology. Market volumes in 2013 are estimated under 6,5 bln \$. The market volumes forecast by 2016 is estimated under 9.6 bln \$.

### ECONOMIC EFFECT/

New Russian osteoplastic materials provide patients with high quality of life.



### TEAM/

The team includes well-known scientists-material specialists from Institute of Metallurgy and Material Science of Russian Academy of Science, medical researchers from Central Research Institute of Dental and Maxillofacial Surgery, managers from Technology Transfer Office RAS and RUSNANO.

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## NATIONAL BIOSERVICE, LLC

# COMMERCIAL RESEARCH BIOBANK AND BIOSERVICE, THAT COMBINES THE REPOSITORY OF BIOLOGICAL SAMPLES AND ASSOCIATED INFORMATION WITH A WIDE RANGE OF BIOSERVICES

### COMPETITIVE ADVANTAGES /

Broad clinical profile of the biobank;  
Centralized multi-discipline services;  
Rapid biospecimen collection; Quality  
of service (QMS); Strict adherence  
to the law and highest ethical standards;  
Operational flexibility and competence;  
Competitive prices.

### ESSENCE OF INNOVATION /

Providing Russian and international  
customers with a wide range of services  
focused around biobanking and bioservice  
- namely, biospecimen sourcing, molecular  
and cellular biology studies.

### RESULTS ACHIEVED/

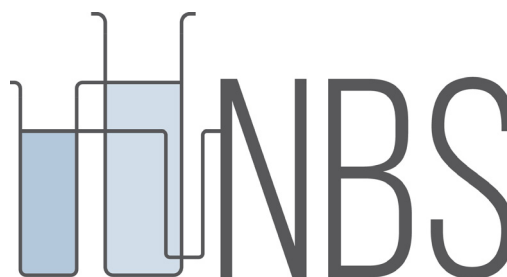
Appearance on both national and world  
market; signed contracts for biobanking,  
bioservice and bioconsulting services.

### MARKET POTENTIAL /

Biospecimens and associated services  
world market has reached \$1.3 bln  
by 2012 and \$1.9 bln by 2014;  
it is believed to reach \$2.3 bln  
by 2015 and \$2.8 bln by 2018.

### ECONOMIC EFFECT/

Biospecies for science and medicine.



NATIONAL BIOSERVICE

### TEAM/

Team members have long record  
of successful commercial and academic  
projects in biomedical field, accumulated  
in UK, the Netherlands, USA, Sweden,  
Italy, Germany and Russia.

### CONTACTS /

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# INFORMATION PLATFORM FOR BIOMEDICAL RESEARCH

## COMPETITIVE ADVANTAGES /

The platform under development will become a universal tool, which would allow to conduct all stages of research on the way from «omics data» to new targets, biomarkers and drugs. Currently there is no analogous product in the world that could combine all of these functions.

## ESSENCE OF INNOVATION /

The main difference of the platform under development from similar software will be in the opportunity to conduct the whole cycle of research via only one integrated tool. Besides standard algorithms, unique algorithms for search of key elements in cell pathways will be implemented in the platform.

## RESULTS ACHIEVED/

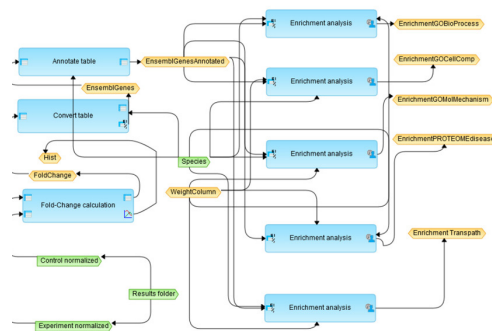
Currently there are already three successfully functioning modules in the platform under development: «Statistics», «Regulatory network» and «Drugs». These modules allow to automatize and put in a pipeline a significant part of systems biology research.

## MARKET POTENTIAL /

The product is oriented at the bioinformatics software market and on the market of systems biology services outsourcing, such as search for new targets and biomarkers, drug repurposing and personalized medicine. Currently the size of the market is estimated at \$3,39 bln. By 2020 it is expected to grow up to \$9,18 bln.

## ECONOMIC EFFECT/

Identification of new targets is now faster, cheaper and less complicated!



## TEAM/

- A. KEL, Leading scientist in bioinformatics and molecular biology;
- F. KOLPAKOV, Has highest competence in complex software development and management of groups of programmers;
- V. POROIKOV, Has highest competence in methods of computer-aided search for targets and in optimization of structures and properties of pharmacological compounds.

## CONTACTS /

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## INNOVATECH, LLC

# TECHNOLOGY OF POSTAPOLECTIC REHABILITATION WITH THE AID OF BRAIN-COMPUTER INTERFACE

### COMPETITIVE ADVANTAGES /

A technology for the rehabilitation of postapoplectic patients as well as other patients with impaired movement function, which in comparison to current approaches utilizes the patient's intention to move a limb, which allows for more effective rehabilitation.

### MAIN POINTS OF INNOVATION /

Neural controller will allow to detect volitional impulse to different movements in the patterns of the human brain biological currents and transform them into commands for the exoskeleton construction which synchronizes the patients' intention of limb movement with the exoskeleton-aided limb movement. The most recent development of the company is the technology which allows to move individual fingers.

### ACHIEVED RESULTS /

2013-2014 - The development and improvement of neural controller prototype.  
2015-2016 – Release of neural controller into the market.  
8 scientific articles in the international and Russian journals have been published.

### MARKET POTENTIAL /

Several Russian and one PCT patents are obtained on core technologies. Precision of processing and detection of brain signals is up to 95% versus 80 - 85% for the most advanced international interfaces.



### THE TEAM /

ALEXANDER KAPLAN,  
Doctor of Biological Sciences, Prof.  
The project involves an experienced team in the area of neurophysiology, with many years experience in successful research in the field of human neurophysiology at major Russian and foreign specialized centers (Japan, Germany, South Korea).

### CONTACTS /

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## SANTE FARM, LLC

# ANTIMICROBIAL AGENT WITH BROAD SPECTRUM OF ACTIVITY FOR TREATMENT OF WOUND INFECTIONS BASED ON A PREVIOUSLY UNKNOWN HYDRAZINE DERIVATIVE OF POLYALKYLENE GUANIDINE

### COMPETITIVE ADVANTAGES /

Has a wide range of action: bacteria, fungi (including biofilms thereof) and their spores, and viruses with MIC from 0.03 to 0.5 µg/ml. Has effect on resistant microorganisms.



### ESSENCE OF INNOVATION /

Drug product for treatment of wound and other types of skin infections is based on a new, previously unknown antimicrobial substance. Multicide molecules are nanometre sized globular particles that pass through the membrane-like coat of microbial biofilms, which can not be done by the linear molecules of the existing drug products.

### TEAM/

VIKTOR TETS, Research Project Manager; GEORGIY TETS, Director for Science Aleksey Gulo, Development of the preliminary scheme of commercialization of the project; NATALIA ZASLAVSKAYA, Study on antimicrobial activity of products.

### RESULTS ACHIEVED/

RF patent is obtained, patenting abroad is in process. Pilot production is set up. Antimicrobial, antiviral effect was studied in vitro and in vivo. Multicide mode of action was identified, and its biological target was shown.

### MARKET POTENTIAL /

In Russian Federation, the volume of the market of drug products for treatment of skin and soft tissues infections (including trophic ulcers) amounts up to 2 billion RUB (more than 19 million packages) per year.

### CONTACTS /

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## INFECTEX, LTD

MDR TB INFECTION. COMPANY'S NOVEL PORTFOLIO INCLUDES 2 TREATMENT COMPOUNDS WHICH ARE INTENDED TO FORM NEW TREATMENT STANDARD

### COMPETITIVE ADVANTAGES /

High efficacy against DS and DR TB strains. Potential capacity to reduce treatment duration. Synergetic interaction with existing and new anti-TB drug.

### ESSENCE OF INNOVATION /

Both compounds SQ109 and Q203 are highly specific anti-TB drugs Novel with mechanism of action.

### RESULTS ACHIEVED/

SQ109: Pivotal clinical trial.  
Q203: preclinical development, preparation to first in human clinical trials.

### MARKET POTENTIAL /

Tuberculosis causes enormous economic and social damage, affects the working age population, requires long-term treatment, epidemic control and prevention activities.

The Russian Federation government programs for TB treatment cost 5422 mln RUB in 2011.

### ECONOMIC EFFECT/

New standard of TB care and control of disease.



### TEAM/

Dr. OKSANA A. MARKOVA,  
CEO and projects leader;  
YANA A. DELOVERY, study coordinator;  
Prof. SERGEY YE. BORISOV -  
scientific advisor.

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## NEVZ-N, LLC

# DEVELOPMENT OF A TECHNOLOGY FOR MEDICINE-PURPOSE PRODUCTS MADE OF NANOSTRUCTURED CERAMIC MATERIALS FOR REPLACEMENT OF METAL IMPLANTS

### COMPETITIVE ADVANTAGES /

The developed materials for loaded parts of joint endoprosthesis guarantee higher strength and fracture toughness, as well as longer service life.

### ESSENCE OF INNOVATION /

The technology of the project includes additional actions for arrangement of microstructure of materials for implants and endoprosthesis, which will contribute to enhancement of implants performance.



### RESULTS ACHIEVED/

Ceramic hip joint bearings has passed:

- wear tests for 20-year operation
- static load (above 2 tons) tests according to ISO 7206-10.

### MARKET POTENTIAL /

The Russian market of hip joint endoprosthesis will reach 3,000 mln. rub. Annual demand in Russia is 100,000 surgeries per year. Currently only 35,000 are performed. The uncovered demand is 65,000 surgeries.

### TEAM/

ANATOLIY MARKOV,  
Director of «NEVZ-N» Ltd;  
IRINA SHEMYAKINA,  
Head of Laboratory;  
EKATERINA SEMANTSOVA,  
Process Engineer;  
IRINA V. KOSOGOROVA,  
Marketing Specialist.

### CONTACTS /

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## BIOSTEN, LLC

# DEVELOPMENT OF BIORESORBABLE ENDOVASCULAR IMPLANTS

### COMPETITIVE ADVANTAGES /

We developed the technology that enables manufacturing of bioresorbable stents from composite materials to ensure the control over the process of bioresorbtion and to achieve mechanical properties that make it possible for bioresorbable stents to acutely perform similarly to metal stents during clinical procedures.

### ESSENCE OF INNOVATION /

We manufacture stent prototypes from compositions of chemically produced and biosynthesized polymers. It helps to streamline the design of stents and increase their mechanical stability compared to existing bioresorbable stents.

### RESULTS ACHIEVED/

Biosten developed the technology and manufactured the prototypes of bioresorbable stents from materials that passed initial biosafety trials. The technology is patented and patent pending.

### MARKET POTENTIAL /

Global Coronary Stents Market is expected to reach \$10.6 billion by 2016 at a CAGR of 8.3% according to BCC Research.



### TEAM/

MICHAEL POPOV, Ph.D., CEO;  
 OKSANA MANZENYUK,  
 Ph.D., Project Leader;  
 ALEXEY DRUGOV,  
 Consultant, Technology Transfer;  
 NIKOLAY SOLOVIEV,  
 Dr.Sc., Head of Laboratory of Laser  
 Discharge, Institute for Problems  
 in Mechanics RAS;  
 DMITRY KAPUSTIN,  
 Ph.D., Head of research group, Laboratory  
 of Polymers for Biology, Institute  
 of Bioorganic Chemistry RAS;  
 EGOR LUKYANOV, Mentor.

### CONTACTS /

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## ALPHA BIOTECH, LLC

# DENTAL IMPLANT COATING THAT STIMULATE OSTEOGENESIS AND HAS AN ADDRESSED EFFECT ON REGENERATIVE PROCESSES IN PERI-IMPLANT TISSUES

### COMPETITIVE ADVANTAGES /

Future product is currently the only biocompatible dental implant that can both stimulate osteogenesis, and has antibacterial properties.

### ESSENCE OF INNOVATION /

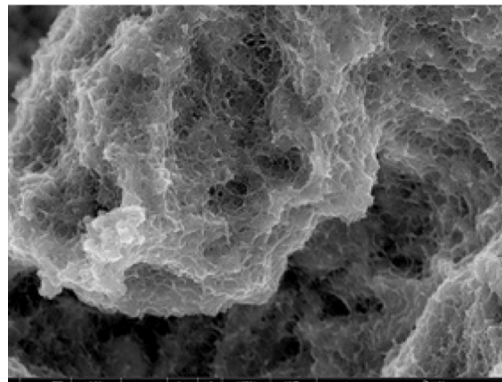
A new dental implant surface with an organic coating is being created using our experience in the development of organic haemostatic substances. The new surface is an innovative organic coating of the implant with a number of advantages compared to that now produced.

### RESULTS ACHIEVED/

preclinical trials are in process.

### MARKET POTENTIAL /

\$10 billion (WW), \$300 million (Russia).



### TEAM/

Dr O. Z. FROMOVICH,  
Founder of Alpha Biotech;  
Dr. I. Y. FRIMAN,  
Implant Surgeon, Medical Director  
at German Dental Centre clinic;  
P. A. Zabursky – MBA in Finance,  
S. A. KISELEV, Author of 2 RF patents,  
2006's best innovative manager.

### CONTACTS /

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## HEMACORE LABS, LLC

# THROMBODYNAMICS-4D - A NEW INTEGRAL HEMOSTASIS ASSAY WITH A HIGH SENSITIVITY TO DISORDERS OF PLASMA AND PLATELET HEMOSTASIS

### COMPETITIVE ADVANTAGES /

- Estimation of the potential thrombotic risk in the early stages;
- sensitivity to all types of anticoagulant drugs;
- Individual anticoagulant therapy planning;
- high sensitivity to disorders of platelet hemostasis.

### ESSENCE OF INNOVATION /

Thrombodynamics-4D is the next generation of Thrombodynamics test, developed by HemaCore. Besides the standard parameters of Thrombodynamics, Thrombodynamics-4D detects the spatial dynamics of thrombin propagation, this would make the test more informative, and will allow to use it for the different pathologies of blood coagulation.

### RESULTS ACHIEVED/

The 3-d model, laboratory model of the device and the assay technology for Thrombodynamics-4D were developed. According to the results of the preclinical studies, published an article in Biophysical Journal.

### MARKET POTENTIAL /

High sensitivity Thrombodynamics-4D to hypo - and hypercoagulability, the combination of physiological model of the study and the ability to measurement the spatial dynamics of thrombin propagation, makes method unique and competitive in the world market.



# HEMACORE Labs

### TEAM/

KOKNSTANTIN KOLTSOV, CEO;  
FAZLY ATAULLAKHANOV,  
Head of the research department, doctor of biological sciences, professor;  
MIKHAIL PANTELEEV, Senior researcher,  
Doctor of Physical and Mathematical Sciences, PhD. of Biological Sciences.

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## THE NOVEL TOOLS FOR RAPID POC DIAGNOSTIC OF INFECTIOUS DISEASES

### COMPETITIVE ADVANTAGES /

Systems provide high precision quantitative diagnostics of infectious diseases at the point of care. Desktop, portable and mobile versions of diagnostic devices are developing for small clinics and privat users.

### ESSENCE OF INNOVATION /

Application of electrochemical luminescence excitation, using cathodic electrochemiluminescence, provides high sensitivity and accuracy of diagnosis, as well as the production of compact and low-cost systems.

### RESULTS ACHIEVED/

The original technology for the diagnosis of infectious diseases, based on application of the phenomenon of cathodic electrochemiluminescence is developed. Laboratory prototypes are developed and tested. Patenting of diagnostic methods is performed.

### MARKET POTENTIAL /

High sensitivity of diagnosis, ease of use, small dimensions and low cost of systems meet the needs of clinics and health centers of small settlements in Russia, Police, Defence Ministry, Immigration Service of Russia, small clinics and private users in EU.

### ECONOMIC EFFECT/

Closeness to patient is a base of high efficient diagnostics.



### TEAM/

OLEG KISELEV,  
Scientific Director, RAS Academician;  
TIMO KORPELA, Research Manager;  
ELOKHIN VLADIMIR,  
Manufacturing Director of systems  
required for the project;  
CHISTYAKOV ALEXANDER,  
Director General;  
TEPPO LAAKSONEN,  
Consultant for manufacturing  
and commercialization in EU.

### CONTACTS /

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## DRD, LLC

# RAPID TESTS FOR ASSESSMENT OF TIA/ ISCHEMIC STROKE, CONCUSSIONS & RISK OF POSTTRAUMATIC EPILEPSY

### COMPETITIVE ADVANTAGES /

On-field or on-site detection (stadium, emergency room, ambulance, combat)  
User-friendly and affordable test.  
Color detection software is adjusted to existing mobile platforms (IOS, Android, W8). Safety of personal data storage in the Cloud, with restricted access.



### ESSENCE OF INNOVATION /

Assays based on Flow Lateral nanoparticles method identifying unique glutamate neuroreceptor peptide fragments and their antibodies in peripheral blood with rapid color detection by mobile devices.

### RESULTS ACHIEVED/

Developed proprietary cost-effective ELISA test kits for assessment of the severity of brain damage after mild TBI and risk of ischemic stroke, post-traumatic epilepsy. Test kits hold CE Mark and distributed in the 27 EU countries. In the US, the test kits are available for research use until FDA-approved.

### MARKET POTENTIAL /

High potential sales and opportunities.

- Network of clinical and reference laboratories;
- Private medical centers;
- Federal clinics and hospitals;
- Pharmacy/Drug store networks;
- Big Pharma (companion diagnostic).

Sales might provide revenue up to 500 mln USD in BRICS countries alone

### ECONOMIC EFFECT/

Up to 100 mill USD.

### TEAM/

POTAPOV ALEXANDER,  
MD,PhD, DSc, Professor, Acad. RAS,  
Director Burdenko Neurosurgery Institute;  
SKOROMETS ALEXANDER,  
MD,PhD, DSc, Professor, Acad. RAS,  
Chair, Dept. Neurology & Neurosurgery,  
St. Petersburg Pavlov' State Medical  
University;  
DAMBINOVA SVETLANA,  
PhD, DSc, Professor, Outstanding  
Scientist of Buryatia  
and Russian Federation.

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# TECHNOLOGY OF THREE-DIMENSIONAL ORGAN BIOPRINTING

### COMPETITIVE ADVANTAGES /

1. Original multifunctional bioprinter enables biofabrication of life tissues from different types of cells and cell spheroids.
2. 3D biofabrication without scaffolds.
3. Precision high speed printing allowing vessels and nerves growth.

### ESSENCE OF INNOVATION /

Potential to grow.

### RESULTS ACHIEVED/

1. Biofabrication of life tissues, organoids and full organs.
2. Original bioprinter has been developed.
3. Bioprinting technology has been validated.
4. The first life organ (mouse thyroid) has been successfully printed.
5. An ultra-modern, fully-equipped, biotechnology research laboratory has been built in Moscow.
6. An international multi-disciplinary team of researchers, engineers and management has been formed.

### MARKET POTENTIAL /

1. Market potential of organ transplants :  
kidney. liver. heart - \$3.6 billion  
skin - \$4.3 billion.
2. Market potential of organoids and organ-like constructs for drug testing - \$2.1 billion.
3. Market potential of bioprinters for scientific research - \$1 billion.



### TEAM /

VLADIMIR MIRONOV MD, PhD  
Center for Information Technology,  
Campinas, San Paulo, Brazil  
organ printing, bioprinting, biofabrication  
USEF HESUANI, MD, MBA  
ALEX OSTROVSKY, MD, PhD, MBA,  
the founder of INVITRO company.

### КОНТАКТЫ /

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## PHARMASAPPHIRE, LLC

# PRODUCTION OF INNOVATIVE SAPPHIRE DOSING PUMPS FOR HIGHLY ACCURATE FILLING OF LIQUID PHARMACEUTICALS

### COMPETITIVE ADVANTAGES /

Unique wear resistance, increased chemical purity of drugs, increased drugs efficacy, significantly increased shelf life and storage time of drugs, vast sales markets, clean production, huge financial and economic benefits.

### ESSENCE OF INNOVATION /

The company was the first in the world to utilize an advanced innovative material in the manufacture of plunger pairs from a single crystal sapphire.

### RESULTS ACHIEVED/

The product has successfully passed all stages of pilot testing, demonstrated excellent results in actual production conditions, has numerous positive reviews, has an «umbrella patent protection», etc.

### MARKET POTENTIAL /

Use in the pharmaceutical, chemical, petro-chemical, perfumery, cosmetic, food and other industries. By 2017 the annual demand for dosing pumps will reach more than 4 billion US dollars only in pharmaceutical industry.

### ECONOMIC EFFECT/

Support for innovation grants welfare and prosperity to the investor!



### TEAM/

VITALY SAVENKOV,  
Author of the Project  
and Director-General;  
EVGENY MUKHANOV,  
Marketing and Sales Director;  
JULIA SAVENKOVA,  
Project Lead Manager.

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## AELITA, LLC

UNIVERSAL ANESTHESIA  
WORKSTATION “ROSA”

## COMPETITIVE ADVANTAGES /

1. Innovative injection technology of anesthetic dosing: can halve the consumption of anaesthetic agents minimal sideeffect to a patient.
2. for all age groups of patients including infants;
3. «Low-Flow» mode by semi-closed and closed circuits;
4. Fully digital design and control – up to full automation of anesthesia delivery in a near future.
5. Low cost: 45 000 USD (2 time less).
6. Fully adapted to the conditions in developing countries.
7. Cheap maintenance.
8. Simple production.

## ESSENCE OF INNOVATION /

“ROSA” is designed for inhalational anesthesia in combination with managed and auxiliary artificial lung ventilation of adults and infants with an option to use all gaseous and liquid volatile anesthetic agents (including Xe) «Low-Flow» mode in.

## RESULTS ACHIEVED/

Basic requirements for «ROSA» are identified;  
New ALV with autoclavable respiratory circuit is currently under development;  
Documentation for production is developed;  
hardware - software platform is almost ready.  
We have first sales of our devices.

## MARKET POTENTIAL /

Market volume for anesthesia machines was approximately 3 000 units in 2012, or 5 billion rubles. Russian medical equipment market has been showing substantial growth.  
Expected GAGR is no less than 15% per year.

## ECONOMIC EFFECT/

Excellent performance and affordable price.  
Many types of consumables can be used. Our technology can halve the amount of anaesthetic consumables required | for 1 surgery.



## TEAM/

BORIS SMOLYAROV,  
Scientific leader Ph.D.,  
laureate of USSR state prize /  
Aelita project founder;  
EUGENE GONCHAROV,  
Chief engineer, major contributor  
to injector technology of anesthetic  
dosing;  
YURI KARPITSKI, Marketing  
and business development,  
Ph.D. Serial entrepreneur;  
ALEXEY ZOLOTAREV, CEO;  
MICHAEL BORISOV,  
Principal design engineer;  
ANATOLY KRUPIN,  
Manufacturing director.

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## MILLISECOND TECHNOLOGIES, LLC

# INNOVATIVE METHOD OF LOW-TEMPERATURE PASTEURIZATION / STERILIZATION FOR LIQUID BIOMEDPHARMA PRODUCTS

### COMPETITIVE ADVANTAGES /

MST method can significantly reduce the processing temperature (less than 60 Co), and drastically reduce the exposure time (less than 1 second), which largely solves the problem of reliable and cost-effective to inactivate viruses without denaturation of useful proteins.



### ESSENCE OF INNOVATION /

The essence of innovation is to create a radically new technology gentle ultra-fast (millisecond) low-temperature pasteurization of liquid products while minimizing the denaturation of proteins and with a more powerful effect of inactivation.

### TEAM/

DOLGOPOLOV DMITRY, CEO,  
Project Manager;  
GORODETSKY VLADIMIR,  
Scientific consultant;  
MISLAVSKY BORIS,  
Consultant for the commercialization  
of the project;  
BUBNOV SERGEY, Investment Advisor.

### RESULTS ACHIEVED/

Laboratory prototype for biological liquids has been created. Initial trials on the ability to destroy HPV and microphages have been conducted together with relevant research centers in the Russian Federation and the United States.

### MARKET POTENTIAL /

- Increased reliability inactivation by increasing the safety of the original of useful properties.
- Principle minimal processing time at the lower temperature without the addition of chemicals and irradiation.
- Increased yield of useful proteins, cost reduction.

### ECONOMIC EFFECT/

“Affordable and safe blood preparations”.

### CONTACTS /

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## PHOTONICS, LLC

# DEVELOPMENT AND COMMERCIALIZATION OF A NEXT-GENERATION MINIMALLY INVASIVE LASER SURGICAL SYSTEM FOR MAINSTREAM MEDICINE AND DENTISTRY

### COMPETITIVE ADVANTAGES /

Innovative medical technologies:  
TOR - automatic power control system;  
LPM - coagulated micro columns;  
M2 beam - creation of holes with smallest diameter. The flexibility and the possibility of modernization of the purchased equipment by purchasing additional modules. The compactness and the portability of system.



### ESSENCE OF INNOVATION /

An ultra-compact, low-cost laser platform for hard and soft tissue surgery based on diode and DPSS laser technology with interchangeable clinical modules depending on the medical purpose. A number of medical technologies confirmed with researches are used in laser system.

### TEAM/

VYACHESLAV SELIVANOV,  
Chief Executive Officer;  
GREGORY ALTSHULER,  
project consultant, co-inventor, DScTech;  
IGOR SHUGAILOV,  
Chief Medical Advisor, MD.

### RESULTS ACHIEVED/

The laser module for soft tissue is developed, currently underway test sales. The use of a laser system technology thermo surgery TOP™ which ensures the quality of the cut. Modules for hard tissues are in development.

### MARKET POTENTIAL /

Target market segments include Minimally Invasive Surgical Instruments, Dental Equipment and Medical Aesthetic devices. The Minimally Invasive Surgical Instruments segment is expected to grow from \$9.2 billion to \$13.6 billion at a CAGR of 8.2%.

### ECONOMIC EFFECT/

The latest achievements of laser technologies for medical use.

### CONTACTS /

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## SCIENTIFIC AND RESEARCH INNOVATIVE DEVELOPMENTS OF MEDICAL DEVICES – (NIIRM, LLC)

# DEVELOPMENT AND COMMERCIALIZATION OF A COMBINED LYMPH AND BLOOD DETOXIFICATION APPARATUS

### COMPETITIVE ADVANTAGES /

- Building up of types of extracorporeal procedures.  
Product's similarity with analogous devices – blood detoxification, difference–method of combined or separate lymph and blood purification.
- Increase of treatment efficacy, reduction of mortality.

### ESSENCE OF INNOVATION /

The novelty of the project as compared to Russian and world products consists of the development of methodologies and mechanisms for lymph detoxification or combined lymph and blood detoxification based on the new medical technology and hardware implementation.

### RESULTS ACHIEVED/

Concepts for lymph and blood purification were developed for the reproduction of the model of extracorporeal detoxification. A pilot sample apparatus for lymph detoxification was created and efficacy of extracorporeal detoxification was clinically confirmed.

### MARKET POTENTIAL /

Medical devices market. Segment: Health Care (efferent therapy). Geography markets around the world. World market–over \$ 6.2 billion, Russia – over \$ 1.0 billion.

### ECONOMIC EFFECT/

Less toxins – longer the life.



### TEAM/

VITALY GLUKHOV,  
General Director;  
VYACHESLAV MASHKIN,  
Technical Director;  
VALERY KARANDIN,  
Director for medical technologies;  
MIKHAIL GLUKHOV,  
Commercial Director;  
ALEKSANDR DANILIN,  
Science Adviser.

### CONTACTS /

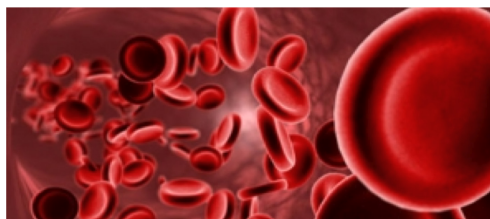
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# ORIGINAL NEXT-GENERATION ORAL ANTICOAGULANT, DIRECT FACTOR XA INHIBITOR

## COMPETITIVE ADVANTAGES /

The most promising and easy-to-use class of anticoagulants. Exceeds all known analogs for human blood plasma activity. Modifications show world-leading values for the most important blood clotting parameters (DD217).



## MAIN POINTS OF INNOVATION /

Modeling based on a protein chain structure accounting for physical and chemical properties of the molecule and selection of molecule class accounting for patent non-infringement. Close monitoring of experimental work via computer modeling with instantaneous feedback.

## ACHIEVED RESULTS /

DD217 has been studied for acute toxicity, mutagenicity, and subchronic toxicity. A dosage form is in development, stability studies are underway, and a pilot synthesis method is being developed.

## MARKET POTENTIAL /

The substance classes have been patented. Development in Russia: has a potential under the Pharma 2020 Strategy. The Russian market of anticoagulants (ATX B01 group) in 2010 was estimated at 6.57 billion rubles (Remedium).

## THE TEAM /

DMITRY TOVBIN,  
PhD in Physics and Mathematics, CEO;  
NIKOLAI TARASOV,  
PhD in Physics and Mathematics,  
Chief Science Officer;  
DMITRY MALAKHOV,  
PhD in Chemistry, Chief Chemist;  
ARSENY AYBUSHEV,  
PhD in Physics and Mathematics,  
Programmer/Developer;  
VLADIMIR GORSHKOV,  
PhD in Chemistry, Chemist;  
DMITRY SYCHEV,  
Doctor of Medicine, Project Development  
Consultant.

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## CARDIONOVA, LLC

# INNOVATIVE DRUG FOR HYPERLIPIDEMIA TREATMENT AND ATHEROSCLEROTIC PREVENTION (AHRO-001)

### COMPETITIVE ADVANTAGES /

AHRO-001 decreased intestinal cholesterol adsorption, excrete cholesterol from an organism. In preclinical trial it was shown a significant inhibition of atherosclerotic plaques formation (95%)- is a unique therapy effect.

### ESSENCE OF INNOVATION /

The drug molecule (AHRO-001) is a representative of the cholic acids class endogenous components of the bile. AHRO-001 leads to decreasing of cholesterol levels concentration in plasma and reduction of the atherosclerotic plaques.

### RESULTS ACHIEVED/

The company has launched the I/IIa clinical study in 2013. Now the clinical study phase I/IIa is ongoing.

### MARKET POTENTIAL /

Market of lipid-lowering drugs is the largest segment of the pharmaceutical market in Russian Federation. Market volume will be worth \$2,7 bln in 2018. Importance in «additional» lipid-lowering therapy is quite high in Russia.

### ECONOMIC EFFECT/

The current level of the medicines for solution the global medical and social objectives.

## CARDIONOVA

### TEAM/

ZHIDKOVA TATYANA,  
Director General;  
DR. ALEXANDER ALEXANDROV,  
Medical Director.

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## ANGIO LAB, LLC

# NANOPLASM. TECHNOLOGY FOR STIMULATION OF NEW BLOOD VESSELS' GROWTH

### COMPETITIVE ADVANTAGES /

1. Low risk of infection – elimination of danger of infection of the patient with viral hepatitis, HIV and other infection;
2. Low cost – compare to the alternative solutions (estimated 10.000 to 300.000 roubles per operation);
3. Permission of clinical use in Russia – awarded by RosZdravNadzor.

### ESSENCE OF INNOVATION /

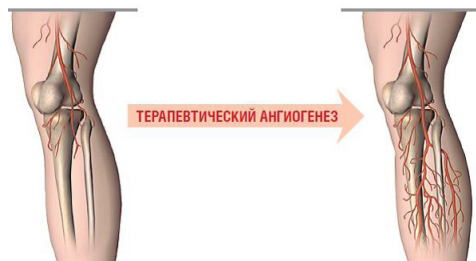
Angiogenesis stimulation in ischemic tissues after injection of the biopreparation, based on polypeptide growth factors 5-50 kDa (approximately 10 nm) obtained from a patient's own blood enriched by platelet.

### RESULTS ACHIEVED/

1. Permission of clinical use in Russia – awarded by RosZdravNadzor;
2. signed licensing agreements with vascular centers.

### MARKET POTENTIAL /

According to the latest scientific data, published "the Lancet" magazine in August 2013, over the last 10 years the number of the people with obliterating diseases of lower limb arteries increased by almost 25% and amounts to about 200 million people.



### TEAM/

ANDREY DRAGUNOV, PhD (Russia) – inventor and founder of the Company;  
ALEX SHEIDER, PhD (USA) – founder of Cure Lab (USA) and SL Oncology (Russia), Skolkovo resident;  
SERGEY MARKOV (Russia) – heart surgeon;  
VITA SCHERBININA (Ukraine) – research coordinator;  
ALEXEY ANDREEV (Russia) – general manager.

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## NANOKOR, LLC

# TECHNOLOGY FOR TREATING ATHEROSCLEROSIS OF HUMAN BLOOD VESSELS USING CHEMICALLY MODIFIED NANOPARTICLES

### COMPETITIVE ADVANTAGES /

Chemically modified carbon-containing nanoparticles can be used as coatings for vascular stents, and as the main substrate in columns for extracorporeal blood purification. The solution has lower price and higher efficacy.

### MAIN POINTS OF INNOVATION /

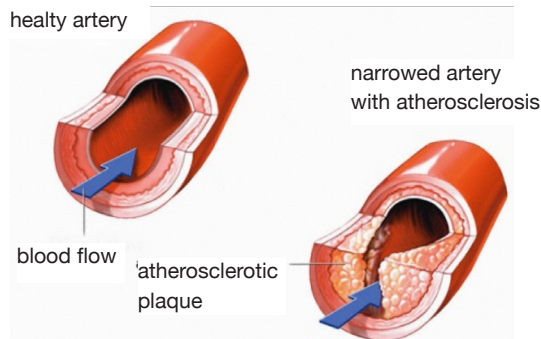
Creation of hybrid organic modified nanomaterials with prescribed surface properties. The technology can hybridize under the mildest conditions possible with high efficacy using a simple hardware design.

### ACHIEVED RESULTS /

A technology has been developed to synthesize the necessary nanomaterial (carbon-containing nanoparticles with dimensions up to 10 nm); proof of concept has been demonstrated for chemical modification of carbon-containing nanoparticles with lipophilic properties.

### MARKET POTENTIAL /

There are no biologically active modified nanoparticles with the given affinity to plaque components currently on the market. Nanoparticles can be used in the production of next-generation coronary and vascular stents.



### THE TEAM /

SHAMIL AKHMEDOV,  
Project Director;  
Scientific Consultants:  
VIKTOR FILIMONOV;  
SERGEY AFANASYEV;  
PAVEL POSTNIKOV;  
YANA ANFINOGENOVA;  
ANDREY GALANOV.

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# INSTITUTE FOR ATHEROSCLEROSIS RESEARCH, LLC

## ATHEROSCLEROSIS RISK ASSESMENT. GENE TESTING SYSTEM

### COMPETITIVE ADVANTAGES /

The new product has no direct analogues. The number of potential users of this service in Russia in 2012 is roughly 35 million people.

### MAIN POINTS OF INNOVATION /

The institute is developing a method and predictive gene testing for atherosclerosis based on analyzing mutations in the mitochondrial genome. Implementing this method results in early diagnostic of atherosclerosis.

### ACHIEVED RESULTS /

Scientific research and basic clinical epidemiology studies have been completed, test prototypes of diagnostic kits to be used with hardware and software have been developed along with the hardware and software schematic diagram.

### MARKET POTENTIAL /

The market for early atherosclerosis predictive gene testing is practically undeveloped, so the market share cannot be determined as of yet.



### THE TEAM /

ALEXANDER OREKHOV,  
General Director;  
IGOR SOBENIN,  
Atherosclerosis Treatment Center Director  
ALEXANDER FEOKTISTOV,  
Biochemical Research Group Lead;  
VARVARA OREKHOVA,  
Inpatient Clinic Department Manager;  
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## BIOLINK, LLC

# KITS FOR MOLECULAR DIAGNOSTICS IN ONCOLOGY

### COMPETITIVE ADVANTAGES /

- The increased sensitivity of the test, the possibility to analyze mutations without biopsy (by blood testing).
- The possibility of testing without bronchoscopy.
- The possibility of testing patients with unresectable tumors.



### MAIN POINTS OF INNOVATION /

Highly-sensitive test of EGFR mutations in blood plasma DNA based on the new version of multiplex polymerase chain reaction (PCR) and allele-specific PCR in real time mode.

### ACHIEVED RESULTS /

The project is searching for financing to carry out R&D. Development of the technology on the samples is ongoing.

### MARKET POTENTIAL /

The cost of one set production (running cost after R&D) is 10-15 USD in mass production.  
Selling price - USD 100-200 (Russia) - USD 500-1,500 (Western Europe).  
Possible market share for the Russian manufacturer is 1-3%, i.e., approximately USD 80-200 million per year.

### THE TEAM /

ALEXANDER KORNIENKO, CEO;  
SERGEY KOVALENKO, CSO;  
VLADIMIR SHAMANIN,  
Head of R&D;  
NATALIA MATSENKO,  
Research Assistant;  
LEV PETRENKO,  
Research Assistant.

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## MEDVIO EURASIA, LLC

# DENDRIVAX ANTICANCER VACCINE BASED ON DENDRITIC CELLS (DCS) WITH A NEW GENERATION ADJUVANT

### COMPETITIVE ADVANTAGES /

The novelty of the approach is to activate DCs in situ and to use allogeneic cell adjuvant that stimulates a cytotoxic T-cell response, which reduces the costs and increases the effectiveness of the vaccine.

### MAIN POINTS OF INNOVATION /

Development and introduction into clinical practice of DendriVax immunotherapeutic vaccine based on dendritic cells (DCs) with a new generation adjuvant for the treatment of hormone-resistant prostate cancer and other solid tumors.

### ACHIEVED RESULTS /

A pilot clinical trials have been conducted in Philippines and in the United States to prove the basic technology. The concept of a new generation adjuvant was developed and patented. The plan of transfer and scaling of the core technology in Russian Federation has been formulated.

### MARKET POTENTIAL /

A real alternative to chemotherapy will appear in the market for treatment of stage III-IV prostate cancer, increasing life expectancy and improving patients' quality of life.



### THE TEAM /

OLEG EGOROV, CEO;  
 VASILIIY OSCHEPKOV,  
 Medical Director;  
 IRINA BALDUEVA,  
 Head of the Production Laboratory, Chief Investigator;  
 BENJAMIN TJOA,  
 Production Expert;  
 WILLIAM CAVANAGH,  
 Clinical Trial Expert;  
 MIKHAIL KISELEVSKIY,  
 Dr. Bio. Sc., Prof., Scientific Consultant

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## AUTOLOGOUS T-REGULATORY CELL VACCINE FOR AUTOIMMUNE DISEASES

### COMPETITIVE ADVANTAGES /

Lower costs with higher treatment efficiency compared to standard treatment. Compensation of deficiency of the regulatory cells. Absence of the negative systemic effects on the immune system and individual intolerance that is characteristic for conventional immunosuppressive drugs.

### MAIN POINTS OF INNOVATION /

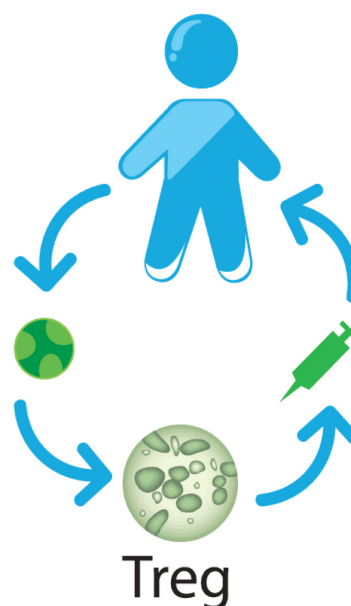
Patented way of autologous regulatory T-cell expansion provides a 1500-fold increase in the number of cells within a short period of time (6 days). The vitality and full capacity of expanded cells.

### ACHIEVED RESULTS /

Pilot clinical trials for remitting multiple sclerosis and GVHD have been successfully completed. These trials have demonstrated the safety and efficacy of this method (9 patients with RMS, 7 patients with GVHD). Patents have been received in the Russian Federation, the application for patent has been filed in the USA. Planned date of commercialization is 2017.

### MARKET POTENTIAL /

More than 2.5 million people worldwide suffer from multiple sclerosis. Total number of patients with autoimmune diseases is more than 40 million. Cell technologies, including the development of a Treg vaccine, is a unique innovative approach in the treatment of autoimmune diseases.



### THE TEAM /

SVETLANA BYKOVSKAYA,  
MD, Prof., CEO;  
MIKHAIL SCHURIN,  
MD, PhD, scientific consultant;  
YEVGENY NASONOV,  
scientific consultant;

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## MIP-11, LLC

# INNOVATIVE MEDICINES AND CELLULAR TECHNOLOGIES FOR C HEPATITIS TREATMENT

### COMPETITIVE ADVANTAGES /

The product under development, AVR-560, is a new class inhibitor that drastically differs from all currently known drugs under development against HCV. AVR-560 blocks infection of liver cells at early stages.

### ESSENCE OF INNOVATION /

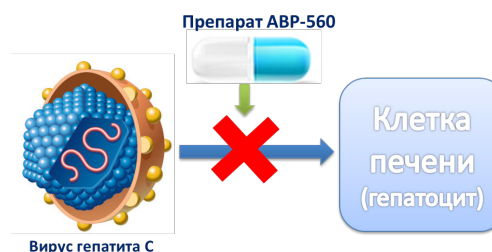
AVR-560 is an early stage inhibitor of the synthesis of viral genomic RNA. Presumably drugs of this class of compounds bind with the viral non-structural NS4B protein, blocking the ability of the latter to bind with the viral RNA. Consequently, NS4B protein loses its ability to deliver the viral RNA to replication complexes, where synthesis of viral RNA occurs.

### RESULTS ACHIEVED/

Studies have shown that AVR-560 has high potency against major genotypes of HCV, as well as a favourable safety profile. Results of the ongoing Phase II Clinical trials of the first cohort of patients with C-type Hepatitis have demonstrated a significant viral load reduction in single dose administration of the drug at a dose of 100 mg for 14 days.

### MARKET POTENTIAL /

According to the estimates of DataMonitor, the current volume of 7 major pharmaceutical markets (US, Japan, Germany, France, Italy, Spain, UK) in 2013 was USD 2.943 billion. However, due to the sales of new high-efficacy drug products and the emergence of treatment regimens its rapid growth is predicted. Peak sales will make over USD 19 billion in 2016.



### TEAM/

NIKOLAY MERKIN,  
General Director;  
VADIM BICHKO,  
Director for Science.

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## DEVELOPMENT OF A LASER SYSTEM FOR MINIMALLY INVASIVE SURGERY

### COMPETITIVE ADVANTAGES /

Incision of biological tissues within the accuracy of 50 microns,  
Absence of bleeding,  
It does not cause thermal damage to the tissue cells;  
It possesses potent sterilizing effect;  
It reduces the time of operation,  
Scar tissue is not formed at the site of the incision.

### MAIN POINTS OF INNOVATION /

A unique method was developed of minimally invasive surgeries by cold ablation of biological tissues with laser radiation energy to the desired depth controlled by a physician in the conditions of complete hemostasis, as well as a laser system for its implementation.

### ACHIEVED RESULTS /

The prototypical 2940 nm laser has diode pumping and transmission of laser radiation through ZBLAN optical fiber to the operated tissue. Cold ablation of tissues without their thermal damage was carried out in vitro.

### MARKET POTENTIAL /

During surgery, the effective incision or evaporation of abnormal tissue is provided without signs of heat damage with the simultaneous cessation of bleeding. These results were never achieved before.



### THE TEAM /

NADEZHDA FASHUTDINOVA,  
Project Manager, Company Director;  
OLEG KUZMIN,  
Head of R&D;  
OLGA RISOVANNAYA,  
Medical Research Program Manager.

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## TES MOBILE, LLC

# MOBILE TECHNOLOGY FOR TREATING SENSORINEURAL HEARING LOSS AND TINNITUS

### COMPETITIVE ADVANTAGES /

Improves the hearing in 89% of patients with sudden and acute hearing loss and 67% of patients with chronic hearing loss, regardless of cause. Tinnitus ceases or lessens in 91% of patients.

### MAIN POINTS OF INNOVATION /

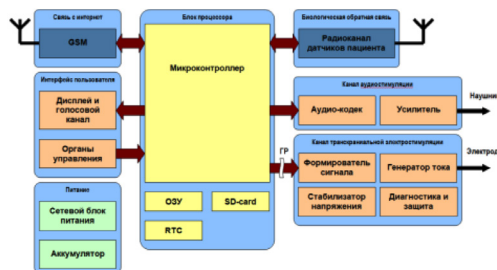
A unique patented technology of audio selective transcranial electric stimulation of protective (endorphin) mechanisms of the brain using pulse current in conjunction with acoustic impact on the acoustic organ with tonal signals at the hearing loss frequencies.

### ACHIEVED RESULTS /

A line of devices has been produced based on the fundamental technology for treating disorders of various etiologies. Development of a method of treating sensorineural hearing loss has begun based on TES therapy in conjunction with acoustic impact.

### MARKET POTENTIAL /

The audiology equipment market will reach 26.2 billion dollars by 2017 (Audiological Devices -Global Strategic Business Report). The US market of mobile medical devices is 15 million devices (HIMSS Analytics).



### THE TEAM /

ALEXANDER MALYGIN,  
PhD in Engineering, CEO;  
VALERY LEBEDEV,  
Doctor of Medicine, Professor,  
RANS Academician,  
Science Division Director;  
DMITRY TSEITLIN,  
PhD in Medicine, Clinical Trials and  
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ANNA BELIMOVA,  
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## BIOCONSTRUCTOR-S, LLC

# BIOCONSTRUCTORS TECHNOLOGIES IN REGENERATIVE MEDICINE

### COMPETITIVE ADVANTAGES /

Modern implants for bone tissue engineering promote bone growth in vivo with 75% probability, at the best case. So, three of four patients will have successful results of osteosynthesis, only. The company has a know-how and technology of surface modification that allows enhancing the effectiveness of the bone growth in vivo up to 95-100%.



### ESSENCE OF INNOVATION /

Know-how and lab technology of artificial niches size and their distribution density designing to enhance osteogenic properties of stromal stem cells. Implants with surface modification are successfully tested in clinics.

### RESULTS ACHIEVED/

First generation of materials with calcium phosphate coating ('niche-relief' concept as the key technology of surface modification) has been designed. Dental implants of first generation have the regulatory permission for clinical use in Russia and are ready for wide-scale production. 'Niche-voltage' concept as key technology is specified.

### MARKET POTENTIAL /

Tissue engineering and cell technologies and products are an active market, with many participating companies, incl. Johnson & Johnson Inc. / DePuy, Medtronic, Smith & Nephew, Stryker, and Zimmer. Bone implants have 54 % of implants market. The market is expected to grow 12% CAGR and will achieve 150 % (\$ 100 billion) until 2018.

### TEAM/

DR. IGOR KHLUSOV, CEO;  
Dr. YURI SHARKEEV,  
Head of R&D. Prof. of Inst. of Strength  
Physics and Material Science of Siberian  
Branch of Russian Acad. of Sc. (Tomsk);  
Dr. VLADIMIR PICHUGIN,  
Scientific Advisor. Head of Department,  
Tomsk Polytechnic University.

### CONTACTS /

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## HEPATERA, LTD

# CHRONIC HBV AND HDV INFECTION TREATMENT

### COMPETITIVE ADVANTAGES /

The first in class entry inhibitor to treat chronic HBV infection and co-infection with HDV, the disease with no reliable effective standard of care.

### ESSENCE OF INNOVATION /

Myrcludex B blocks the entry of HBV into hepatocytes by binding to and inactivating an essential HBV entry receptor, and thus prevents new hepatocytes infection. The intact cells are the depot of the hepatic regeneration

### RESULTS ACHIEVED/

Completed phase II clinical trial in CHB patients, ongoing clinical trial in CHD patients.

### MARKET POTENTIAL /

The prevalence of HBV (hepatitis B) infection in the world varies from 0,1 to 20 % in different countries, 2-7 % in RF. About 1,1 mln of patients in RF require treatment. The world CHB drugs market is about \$3 bln.

### ECONOMIC EFFECT/

Effective reliable standard of care of chronic liver viral diseases.



### TEAM/

DR. OKSANA A. MARKOVA,  
CEO and projects leader;  
YANA A. DELOVERY,  
study coordinator;  
DR. ALEXANDER ALEXANDROV,  
Medical Director.

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## URAL CENTER FOR BIOPHARMACEUTICAL TECHNOLOGIES, LLC

### TRIAZAVIRIN, A NOVEL RUSSIAN ANTIINFLUENZA CHEMOTHERAPEUTIC

#### COMPETITIVE ADVANTAGES /

Triazavirin has the complex advantages:

- lack of side effects and activity against resistant forms of viruses;
- several dosage forms (including those under development);
- low price.

#### MAIN POINTS OF INNOVATION /

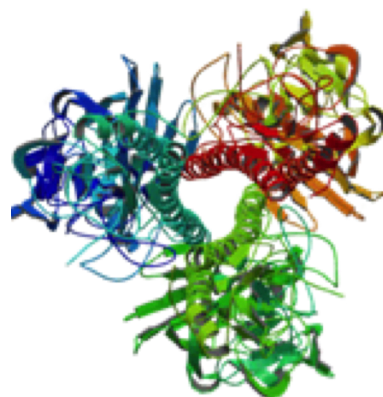
1. novel mechanism of action
2. potential treatment for pandemic influenza strains such as H5N1, and most of the testing that has been done has focused on its anti-influenza activity.

#### ACHIEVED RESULTS /

The drug is on the Russian market. The company has developed 15 original first-in-class active ingredients that are currently in virologic testing. Finished dosage forms have been developed for the first-in-class drug Triazavirin.

#### MARKET POTENTIAL /

By 2020, the company plans to hold up to 40% of the Russian antiviral drug market and enter the global market.



#### THE TEAM /

VALERY CHARUSHIN,  
RAS Academician;  
OLEG CHUPAKHIN,  
RAS Academician;  
VLADIMIR RUSINOV,  
RAS Corresponding Member.

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## SYNTHAUR, LLC

# SL-725 – COMPLEX BLOCKAGE OF INFLUENZA VIRUS

### COMPETITIVE ADVANTAGES /

There are no direct analogs to SL-725 based on the mechanism of action. Wide spectrum of antiviral activities against different strains of influenza virus. It is not expected that the influenza virus can develop a resistance to SL-725.

### ESSENCE OF INNOVATION /

New approach to the antiviral drug development was used. SL-725 is supramolecular complex (supramer) which is capable of forming a coverage structure surrounding the viral particle and blocking its penetration into human cell. SL-725 is capable of complete blockade of both hemagglutinin (HA) and neuraminidase (NA) of the influenza virus.

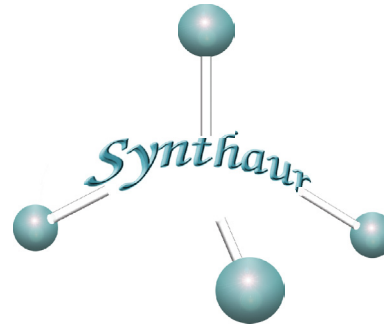
### RESULTS ACHIEVED/

Several drug-candidates - glycopeptides were initially tested in-vitro and a few candidates were selected for the following development.

### MARKET POTENTIAL /

The general capacity of potential market segments in the Russian Federation in 2020 will be around 1900 million packs of antiviral drugs.

The planned share of the Russian Federation market for our product in 2022 is anticipated to reach 3%.



### TEAM/

N. BOVIN,  
General Director;  
S. VLASOV,  
Business development director;  
A. GAMBATYAN,  
Chief scientist.

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## WDS PHARMA

# NEW ORGANIC GERMANIUM COMPOUNDS TO TREAT HERPES - VIRUS INFECTION

### COMPETITIVE ADVANTAGES /

- patentability and commercial priority of new molecules;
- technology «green chemistry»;
- conversion of hydrophobic molecules to hydrophilic organic germanium complexes with high bioavailability and less toxicity;
- dual mode of action and improved synergetic efficiency including against resistant strains.

### ESSENCE OF INNOVATION /

The proprietary core technology platform for chemical synthesis of Germanium and different organic substances (including various pharmaceutical generics) was developed and can be used for perspective drug development in different medicinal therapeutic areas (e.g. antiviral, anti-cancer, anti-infection, anti-metabolic, immunotherapy etc.) as well in veterinary, cosmetology, health care.

### RESULTS ACHIEVED/

The novel antiherpetic organic germanium aciclovir molecule was developed. The preclinical studies are in process (2014-2015) and prove non-toxicity and biological activity. The new organic germanium molecules with other organic compounds (e.g. nucleoside analogous) are also available.

### MARKET POTENTIAL /

> 4bln people are infected with herpes viruses worldwide. The global herpes market can reach 9 bln \$ to 2018 (CAGR ~10%). Expert said the current market is very generic and looking for new patentable decisions.

### ECONOMIC EFFECT/

« I am not a scientist, I'm an Inventor... tries to create something new that will have practical application» (Thomas Edison).



### TEAM/

IGOR AMBROSOV, CEO, Ph.D;  
ALEXANDER ISAEV,  
R&D Director, MD;  
SVETLANA MATELO, CBDO, MD;  
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## DEVELOPMENT OF DRUG CANDIDATES AGAINST HIV/AIDS ON THE BASE OF INHIBITORS OF THE HIV MATRIX PROTEIN MA/P17

### COMPETITIVE ADVANTAGES /

- New mechanism of action inhibition of the HIV1 MA/p17 protein;
- High conservatism of the selected protein;
- Decreased risk of resistance;
- High level of efficacy;
- Low toxicity.

### ESSENCE OF INNOVATION /

The development may become a novel highly potent approach to treat HIV/AIDS especially in terms of creating a small molecule compound active against drugresistant HIV strains, with low toxicity, and convenient dosing.

### RESULTS ACHIEVED/

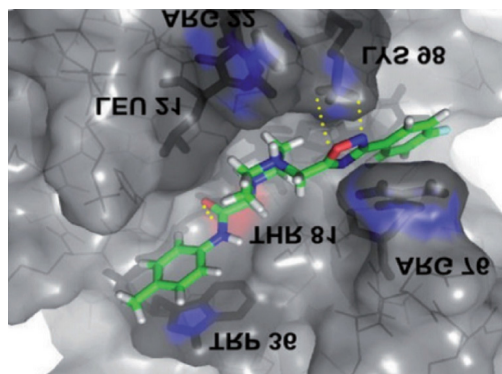
A few drug candidates were selected for now, their efficacy is comparable to the drugs used in HIV treatment (but different MoA).

### MARKET POTENTIAL /

The annual sales of the succesful anti-HIV drug with new mechanism of action can be above 1 bln USD.

### ECONOMIC EFFECT/

Substantial increase of survival period and life quality of patients.



### TEAM/

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PYRKOV TIMOFEY;  
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## TARGET MEDICALS, LTD

# DEVELOPMENT OF A NEW GENERATION OF ANTIFUNGAL COMPOUNDS USING IN SILICO AND IN VITRO SCREENING

### COMPETITIVE ADVANTAGES /

The new effective drug is the subject of interest of all the players, as it allows getting a significant share of the market in monetary terms due to the exclusive rights for its production.

### MAIN POINTS OF INNOVATION /

Construction of new synthetic CYP51 inhibitors.

### ACHIEVED RESULTS /

The analysis of chemical space is carried out. Selection of compounds that bind to target proteins of pathogens and do not interact with the xenobiotic metabolism system of the human body.

### MARKET POTENTIAL /

Antifungal agents belong to the group with a high steady demand. The average yield from their sale is about 50-55%. The specific share of the total world market in USA is 35%, in Europe - 25%, in Japan -30%.



### THE TEAM /

ALEXEY KLYUCHENOVICH, CEO;  
DMITRY MUKHA,  
Deputy CEO;  
ALEXEY YANTSEVICH,  
Head of the Operations in the Field  
of Analytical Methods  
and Chemical Synthesis;  
ANDREY GILEP,  
Head of Operations in the Field  
of Molecular Cloning;  
SERGEY USANOV,  
Project Coordinator.

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## R-OPRA, LLC

# ODELEPRAN: NEW OPIOID RECEPTOR ANTAGONIST

### COMPETITIVE ADVANTAGES /

Odelepran may have a more favorable efficacy-to-safety ratio compared to naltrexone.

### MAIN POINTS OF INNOVATION /

Odelepran is a new opioid receptor antagonist that demonstrates high in vitro affinity and antagonism toward all 3 types of human opioid receptors.

### ACHIEVED RESULTS /

A series of preclinical studies have been completed, as well as phase I and II clinical trials of the tablet dosage form of Odelepran in patients with alcohol dependence.

### MARKET POTENTIAL /

The market will grow as new drugs with proven efficacy appear. Naltrexone is the only effective drug for treating narcotic dependence available in Russia.



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## RIONIS, LLC

# INNOVATIVE DRUG FOR TREATING PARKINSON'S DISEASE

### COMPETITIVE ADVANTAGES /

The new drug can solve key problems in treating Parkinson's Disease: it increases the efficacy and safety of palliative treatment, slows disease progression, and eliminates non-motor symptoms.

### MAIN POINTS OF INNOVATION /

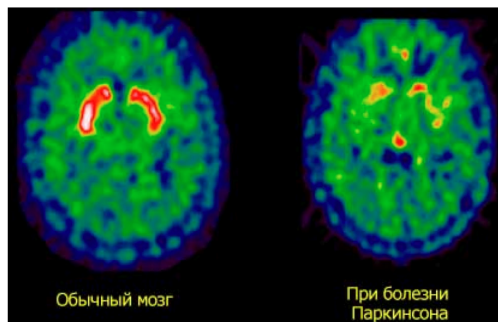
The drug has an innovative mechanism of anti-Parkinson's action; it has advantages over known classes of anti-Parkinson's drugs and is potentially competitive on the global market.

### ACHIEVED RESULTS /

Dozens of biologically active compounds have been synthesized and studied. These compounds have been compared for efficacy of anti-Parkinson's activity and safety of use. Safety and efficacy indices have been studied.

### MARKET POTENTIAL /

For the Russian market, where imported anti-Parkinson's drugs dominate (over 85%), this is the first original drug in the segment that can replace imports.



### THE TEAM /

VENIAMIN KHAZANOV,  
Doctor of Medicine, Professor,  
Project Manager;  
NARIMAN SALAKHUTDINOV,  
Doctor of Chemistry;  
NATALYA BELSKAYA,  
Doctor of Medicine, Deputy CEO.

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## NOVEL ATYPICAL ANTIPSYCHOTIC WITH UNIQUE PROFILE OF SAFETY AND EFFICACY

### COMPETITIVE ADVANTAGES /

Developed drug candidate will be more effective and less toxic than atipsychotic drugs currently present on market.

### ESSENCE OF INNOVATION /

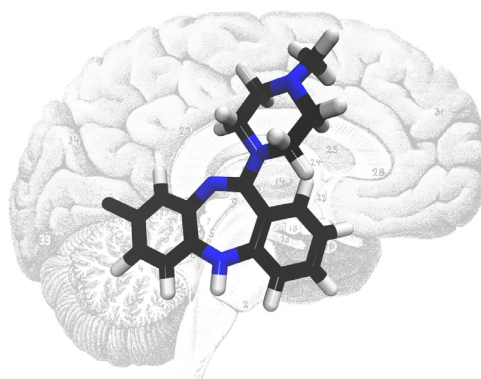
The drug candidate is analogue of the most potent antipsychotic drug clozapine. Chemical modification of benzodiazepine ring was introduced to avoid formation of toxic metabolites.

### RESULTS ACHIEVED/

Efficacy and safety was demonstrated in vitro and in vivo, preclinical development is ongoing.

### MARKET POTENTIAL /

The drug will be commercialized on international market. The first market segment is patients with drug resistant schizophrenia. Exit to first-line antipsychotic therapy is planned on successful proof-of-concept trial completion (market vol \$18 bn).



### TEAM/

ZAPOLSKY M.E., CEO;  
BENIASHVILI A.G.,  
head of clinical development;  
MOROZOVA M.A.,  
head of preclinical development,  
head of laboratory  
of psychopharmacology,  
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NESTERUK V.V.,  
business development consultant.

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## NEUROMAX, LTD

# DEVELOPMENT AND COMMERCIALIZATION OF THE MEDICATION FOR TREATMENT OF DIABETIC POLYNEUROPATHY (BNV-222) AND MEDICATION FOR THE NEUROPATHIC PAIN TREATMENT (AQU-005)

### COMPETITIVE ADVANTAGES /

BNV-222: There is no medication for pathogenetic treatment of diabetic polyneuropathy in the market. AQU-005: There is no alternative to opioid analgesics in the treatment of severe neuropathic pain at the moment. More than 60% of patients receive ineffective therapy with a low safety level.

### ESSENCE OF INNOVATION /

BNV-222: With an excess of glucosa in the blood aldose reductase enzyme activity leads to metabolic abnormalities in nerve function. Inhibition of this enzyme is able to reduce the progression of neuropathic symptoms.

AQU-005- selective inhibitor of matrix metalloproteinase MMP-2, MMP-9 . The action of the drug provides two parallel mechanism of neuropathic pain control in the early and late stages of its occurrence.

### RESULTS ACHIEVED/

BNV-222:  
2011 - preclinical studies completed  
2014 - clinical studies I- II phases completed  
Currently the phase III study (registration) was initiated.  
AQU-005: project is at the preclinical stage of development.

### MARKET POTENTIAL /

The volume of the main markets in 2011 was: BNV -222: \$ 640 million;  
AQU-005: \$ 6,3mlrd.  
Growth from 2011 to 2016 will be 7.2%;  
In the Russian Federation:  
treatment of DPN is assigned  
190 thousand patients, pathogenetic therapy market is estimated at 1 billion rubles.

### ECONOMIC EFFECT/

Reduction of disability of patients with diabetes mellitus.  
Improving the quality of life for patients suffering from neuropathic pain.

# NEUROMAX

### TEAM/

JULIA MOSKOT,  
general director, clinical study manager;  
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business development.

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## FUSION PHARMA, LLC

# NOVEL TYROSINE KINASE INHIBITORS AS POTENTIAL ANTICANCER DRUGS

### COMPETITIVE ADVANTAGES /

PF-114 is effective against all known resistant mutated forms of Ph+ leukemias and has selectivity profile.

### ESSENCE OF INNOVATION /

PF-114 is a targeted drug, next generation Bcr-Abl inhibitor for the treatment of Ph+ leukemias.

### RESULTS ACHIEVED/

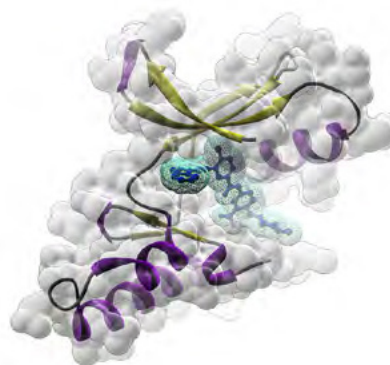
Efficacy of PF-114 was demonstrated in *in vitro* and *in vivo* models of chronic myeloid leukemia and Ph+ acute lymphoblastic leukemia, including most resistant disease forms with T315I mutation. High safety profile of PF-114 was confirmed in *in vivo* toxicology studies.

### MARKET POTENTIAL /

PF-114 potentially can occupy up to one third of global market of resistant Ph+ leukemias.

### ECONOMIC EFFECT/

Prolonging patients' survival with the high quality of life.



### TEAM/

PhD GHERMES CHILOV,  
general director;  
PhD ALEXEY ZEIFMAN,  
head of pre-clinical development;  
ILYA TITOV,  
head of medicinal chemistry.

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## A-LABORATORY, LLC

# INNOVATIVE BIFUNCTIONAL TARGET-SPECIFIC SMALL MOLECULE ANTI-CANCER DRUGS

### COMPETITIVE ADVANTAGES /

Selectivity, wide spectrum of effects,  
high efficacy due to bifunctional action,  
reduced risk of drug resistance.

### MAIN POINTS OF INNOVATION /

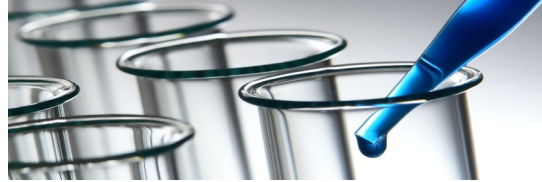
The new drugs cause programmed cell  
death of cancer cells by simultaneously  
inhibiting functionally distinct factors  
that regulate the growth and death  
of cancer cells.

### ACHIEVED RESULTS /

A candidate drug has been selected.

### MARKET POTENTIAL /

The global sales volume of anti-cancer  
drugs will reach 72 billion dollars in 2016.



### TEAM /

VLADIMIR KUCHEROV,  
Director;  
GALINA SELIVANOVA;  
VLADIMIR POROYKOV;  
ALEXANDER KEL.

### CONTACTS /

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## SMALL MOLECULE WITH NOVEL THERAPEUTIC TARGET AND POTENTIAL APPLICATIONS IN ONCOLOGY

### COMPETITIVE ADVANTAGES /

Drug candidate acts on a new kinase therapeutic target, which causes suppression of migration and invasion of tumor cells and unlocking of apoptosis mechanisms.

### ESSENCE OF INNOVATION /

Our target is tyrosinkinase that regulates expression of matrix metalloproteases, cytoskeleton remodeling, and protects tumor cells from apoptosis.

### RESULTS ACHIEVED/

Low-nanomolar selective tyrosine kinase inhibitor was developed. Target validation is ongoing.

### MARKET POTENTIAL /

Drug candidate can be used in combination with cytotoxic drugs against non-small cell lung cancer, colorectal cancer, breast cancer, ovarian cancer and other tumors, with total demand of 118 ths pts/year in Russia, 253 ths pts/yr in USA).

### TEAM/

CHILOV GG, general director;  
STROGANOV OV, senior scientist;  
TITOV IY, head of medicinal chemistry;  
Tumor biologists from Russian oncology center; Glasgow University, UK; Saga University, Japan.

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## BIND RUS, LLC

# DEVELOPMENT OF A NEW CLASS OF HIGHLY SELECTIVE TARGETED AND PROGRAMMABLE THERAPEUTICS CALLED ACCURINS™

### COMPETITIVE ADVANTAGES /

Accurins are highly selective medicines that target and get accumulated at the site of disease, resulting in enhanced efficacy and reduced side effects. Accurins represent the first targeted and programmable nanomedicine to reach the clinic and demonstrate clinical anti-tumor activity.

### ESSENCE OF INNOVATION /

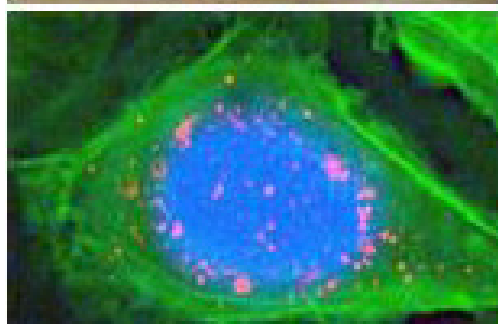
BIND's Medicinal Nanoengineering® platform enables the design, engineering and manufacturing of Accurins and is compatible across a broad range of small molecule-based drugs, including molecularly targeted agents such as kinase inhibitors and other classes of therapeutics.

### RESULTS ACHIEVED/

Our lead drug candidate BIND-014 (docetaxel-loaded nanoparticles targeted to PSMA) is in Phase 2 clinical trials for non-small cell lung cancer (NSCLC) and metastatic castrate-resistant prostate cancer (mCRPC) in USA and Russia.

### MARKET POTENTIAL /

Over 20M new cases of cancer are predicted in 2025, compared with 12M in 2008 (WHO). The WW market volume was \$34B in 2009. The innovative products on the market are forecast to drive double-digit annual growth in the upcoming period. BIND RUS is developing Accurins, proprietary best-in-class therapeutics with superior target selectivity and the potential to improve patient outcomes.



### TEAM/

BIND RUS is a wholly owned subsidiary of BIND Therapeutics Inc. (Cambridge, MA, NASDAQ: BIND). In close collaboration with BIND Therapeutics, BIND RUS creates and develops new best-in-class therapeutics.

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## ONCOBIOTECH, LLC

# SYNTHESIS AND PRE-CLINICAL TRIALS OF A NEW TYPE OF ANTICANCER DRUGS, TELOMERASE INHIBITORS

### COMPETITIVE ADVANTAGES /

Versatility of action, low toxicity, high specificity. Inhibition of telomerase:

- Reduces the potential of malignant cells division;
- Destroys the primary tumor and metastases;
- Decreases the ability of the primary tumors to metastasize.

### MAIN POINTS OF INNOVATION /

The drug developed under the project shall have substantially lower toxicity (analogues of this class of compounds, according to literature data, do not have high toxicity) and greater selectivity for tumor cells.

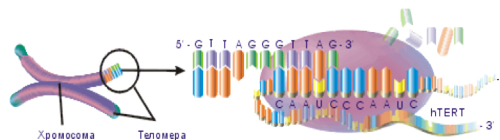
### ACHIEVED RESULTS /

Testing of compounds panel (search for more active compounds with improved physico-chemical properties).

Conducting in vivo studies - evidence of the antitumor activity of compounds affecting the assembly of the enzyme.

### MARKET POTENTIAL /

The world market of anticancer drugs is USD 80 billion. The developed drugs will have a significantly lower cost compared to the analogues with the effect not inferior to them.



### TEAM /

MARIA ZVEREVA,  
Project Manager;  
ALEXANDER MAZHUGA, CEO;  
ALEXANDER KABANOV,  
Scientific Consultant;  
OLGA DONTSOVA,  
Scientific Consultant.

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## ADAMARK, LLC

# BIOMEDICAL MARKERS ON THE BASIS OF HIGH-STABLE LUMINESCENT CARBON NANOMATERIALS

### COMPETITIVE ADVANTAGES /

Applying of a new type of fluorescent biocompatible markers on the basis of nanodiamond and nanographite. The expected parameters will drastically exceed those of domestic and foreign competitors.

### MAIN POINTS OF INNOVATION /

An alternative approach to the development of luminescent nanodiamonds to be applied as biomarkers is based on chemical sedimentation of diamond from the gaseous phase (CVD method).

### ACHIEVED RESULTS /

The work is carried out at the RAS Institute of General Physics laboratories, where experimental plants for CVD diamond growth have been developed. Some parts of works on the project are planned to move to the Nanocentre "TECHNOSPARK" in 2013.

### MARKET POTENTIAL /

The global biomarker market will grow from USD 5 bln (2009) to USD 20 bln (2014), oncobiomarkers– from USD 4.1 bln (2009) to USD 9.5 bln (2014). The applications in cardio and central nervous system treatment in 2007 totaled 23% of the biomarker market.



### TEAM /

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VIKTOR LOSHCHEV,  
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scientific expert;  
VITALY KONOV,  
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## THERAMAB, LLC

# NEW THERAPEUTIC MONOCLONAL ANTIBODY TO TREAT AUTOIMMUNE DISEASES

### COMPETITIVE ADVANTAGES /

Opposite to other mAbs, TAB08 is able to affect key aspects of pathogenesis via specific proliferation of T-regulatory cells, rather than tackling “consequences” of autoimmune diseases such as a blockade of TNF or IL-6.

### ESSENCE OF INNOVATION /

TAB08 is the unique drug to treating Autoimmune and Oncological diseases. This is the “first-in-class” humanized mAb of IgG4 class which mode of action is based on binding to costimulating receptor CD28 specific for human T-lymphocytes.

### RESULTS ACHIEVED/

Phase 1b clinical trials in 9 RA patients demonstrate a good tolerability and safety TAB08. TAB08 shows excellent efficacy comparable with the best international therapeutic mAb on the market.

### MARKET POTENTIAL /

TAB08 has a high market potential to solve the problems of lack of effectiveness and frequent side effects in the existing competitive monoclonal antibodies. The product has a blockbuster potential.

### ECONOMIC EFFECT/

Fundamentally new approach to treating autoimmune diseases.



### TEAM/

Dr. DMITRY Y. TYRSIN, CEO;  
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 Head of Thera MAB LLC Germany;  
 Dr. ALEXEY A. MATSKEVICH, CSO;  
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 Director of Drug Development.

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## ASPERA, LTD

# NEXT GENERATION THERAPEUTIC CANCER VACCINES

### COMPETITIVE ADVANTAGES /

Higher efficacy, affordability, versatility, simpler administration and supply.

### ESSENCE OF INNOVATION /

Next generation cancer vaccines utilizing nanogel delivery system and full length antigen proteins with wide epitope spectrum inducing strong immune response without expensive personalization.

### RESULTS ACHIEVED/

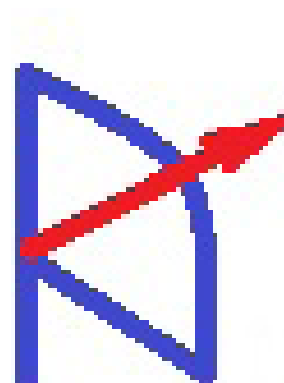
Completed phase 1 clinical trial in US (solid tumors).and Japan (esophagus cancer showing tripple increase in overall survival); started phase 2a in Japan (esophagus cancer).

### MARKET POTENTIAL /

Priced at \$4800/treatment course (20 times cheaper then existing marketed vaccine) market capacity for our vaccines is up to \$20 bln.

### ECONOMIC EFFECT/

Advanced treatment affordable to many and giving new hope to many.



### TEAM/

LEV TSYRENOV,  
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COO Hiroshi Shiku, M.D., Professor,  
Mie University School of Medicine.  
Scientific advisor.  
Naozumi Harada, Ph.D., Scientific advisor.

### CONTACTS /

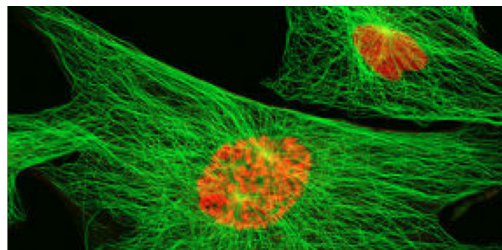
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## RUSSIAN PHARMACEUTICAL TECHNOLOGIES, LLC (INNOVATIVE COMPANY RUSPHARMTECH)

# RPT835, LOW-MOLECULAR INHIBITOR OF FIBROBLAST GROWTH FACTOR RECEPTOR 2 IN THE CANCER TREATMENT

### COMPETITIVE ADVANTAGES /

RPT835 is one of the first allosteric inhibitors in oncology. Principle benefits of allosteric inhibitors:  
high specificity; low toxicity;  
cells with mutations sensitive to treatment; different isoforms of receptor could be targeted.



### ESSENCE OF INNOVATION /

RPT835 decrease activity of FRFR2 by binding an allosteric site at the receptor (that is, a site other than the receptor's active site), without affecting other mechanisms, can increase the effectiveness of therapy and reduce its toxicity.

### TEAM/

SERGEI TJULANDIN, Head of project;  
ILYA TSIMAFEYEV, Consultant ;  
MIKHAIL BYAKHOV, Coordinator;  
TAMARA TSIMAFEYEVA,  
Director of RUSPHARMTECH LLC.

### RESULTS ACHIEVED/

The preclinical data obtained with RPT835 are consistent with potent inhibition of FGF signaling, angiogenesis, and cancer growth.

In vitro data support an allosteric inhibition mechanism of RPT835.

### MARKET POTENTIAL /

Research is carried out on applying RPT835 to treat common cancers: gastric cancer, triple-negative breast cancer, endometrial cancer, colorectal cancer, papillary renal cell carcinoma.

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## NATIONAL INSTITUTE OF INNOVATION

# DEVELOPMENT OF A NEW DRUG FOR THE TREATMENT OF THE HUMAN REPRODUCTIVE SYSTEM CANCERS

### COMPETITIVE ADVANTAGES /

High bioavailability of DIM provides effective concentrations of the active substance in the lesions. High selectivity of the active substance relative to the transformed cells. No severe toxicity and side effects.

### MAIN POINTS OF INNOVATION /

The first low-toxic anticancer drug with selective inhibitory activity against tumor stem cells, which are the source of tumor recurrence and metastasis.

### ACHIEVED RESULTS /

Preclinical studies have been completed, pharmacokinetics and pharmacodynamics of the drug have been studied. Preclinical studies of specific pharmacological activity in vitro have been completed as well as the effectiveness of the drug in vivo.

### MARKET POTENTIAL /

The market volume of drugs used in Russian Federation for the treatment of oncology diseases of reproductive system is USD 200 million. Forecast of the sector development up to 2015 is minimum USD 1 billion.



### THE TEAM /

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GEORGIY FRANK,  
Study Doctor in Clinical Trials;  
RUSTEM KHASANOV, Study Doctor.

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## A-VAK, LLC

# DEVELOPMENT OF A NON-INDIVIDUALIZED METHOD OF SPECIFIC IMMUNOTHERAPY OF MALIGNANT SOLID TUMORS

### COMPETITIVE ADVANTAGES /

The key differentiators of the product from existing solutions and new products:

- The possibility of mass production;
- High efficiency for many types of solid malignant tumors;
- The possibility of tumor development prevention.

### MAIN POINTS OF INNOVATION /

The proposed product is developed as a non-individualized vaccine that is suitable for the treatment of various forms of solid tumors.

### ACHIEVED RESULTS /

Technical specifications of the product, achieved at this stage: the efficacy on animal models is more than 60%. By the completion of PRAV vaccine prototype it planned to achieve the treatment rates efficacy in humans of up to 70%.

### MARKET POTENTIAL /

Mass production of PRAV vaccine will lead to treatment accessibility for many types of solid tumors. PRAV vaccine which is under development will have global competitiveness.



### THE TEAM /

OLEG KRYLOV, CEO;  
 RUSTEM AMIROV,  
 Deputy CEO;  
 ALEXANDER POLETAEV,  
 Research Project Manager;  
 SHAMIL GANTZ,  
 Chief Consultant in Oncology;  
 ANDRES BREDBERG,  
 Consultant in Molecular Studies.  
 PROJECT PARTNERS:  
 CJSC «Managing Company  
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## MITREL-LUMITEC, LLC

# INNOVATIVE LUMINESCENT NANOMATERIALS AND TECHNOLOGIES FOR THEIR APPLICATION IN BIOMEDICINE

### COMPETITIVE ADVANTAGES /

Luminescent nanocrystals with unique ability to convert the driving infrared radiation into luminescence in the visible and infrared ranges: solution of the tissue autofluorescence problem, clear visualization of the labeled lesions boundaries.



### MAIN POINTS OF INNOVATION /

Pathological tissues are labeled with the targeted fluorescent molecular probes.

### ACHIEVED RESULTS /

Technical risks of the project can be deemed as minimal. The synthesis of anti-Stokes nanophosphors, solegated by erbium and thulium ions, was developed. The stability of surface-modified NAPhs has been confirmed.

### MARKET POTENTIAL /

The proposed technology is competitive on the domestic and global markets.

### THE TEAM /

VLADIMIR SOKOVIKOV, CEO;  
ANDREY ZVYAGIN,  
Research Manager;  
ANDREY NECHAEV,  
Expert in Chemical Synthesis;  
ANNA GULLER,  
Expert in Biomedical Research;  
PROJECT PARTNERS:  
STC «Amplitude» LLC.

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## ONCOMAX, LLC

# DEVELOPMENT AND COMMERCIALIZATION OF THE DRUG BASED ON A MONOCLONAL ANTIBODY FOR THE TREATMENT OF ONCOLOGICAL DISEASES (OM-RCA-01)

### COMPETITIVE ADVANTAGES /

OM-RCA-01 is a highly selective and high-affinity monoclonal antibody blocking FGFR1, new target antigen involved in the oncogenesis. It is able to inhibit cancer growth by more than 90%. No analogous have been developed yet for this actual target.

### ESSENCE OF INNOVATION /

OM-RCA-01 blocks one of the major signaling pathways of angiogenesis by FGFR1 binding, preventing its interaction with the stimulating fibroblast growth factor. OM-RCA-01 is a humanized antibody having low immunogenicity and toxicity.

### RESULTS ACHIEVED/

Antibody producer was determined and manufacturing technology for antibody as well as drug dosage form for producing was developed. Currently preclinical investigations are finished allowing to initiate phase I clinical trial in 2015.

### MARKET POTENTIAL /

The market segment including diseases where FGFR1-dependent angiogenesis plays important role for disease progression (breast cancer, and prostate and kidney metastatic cancer, NSCLC) is over \$ 25 billion.

### ECONOMIC EFFECT/

Our objective is to improve the efficiency of the cancer therapy and to improve the quality of patient's life.



### TEAM/

IVANOVA EKATERINA, Ph.D.,  
General Director;  
ILYA TIMOFEYEV,  
Scientific Advisor, the inventor;  
ALEXANDER ALEXANDROV,  
Medical Director.

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## ONCOTARTIS, LLC

# DEVELOPMENT OF A PORTFOLIO OF ANTI-CANCER DRUGS ON A BASIS OF AN ORIGINAL DRUG-DISCOVERY CONCEPT OF “PHARMACOLOGICAL SURGERY”

### COMPETITIVE ADVANTAGES /

The main competitive advantage of the drugs developed is their ability to completely eliminate primary tumor cells as well as cells of the secondary metastases.



### ESSENCE OF INNOVATION /

A new approach to anti-cancer drug discovery on the basis of pharmacological therapy concept, which will provide the possibilities for solving such problems as the treatment of recurrent tumors and drug-resistant disease. A successful realization of the project will lead to a real breakthrough in the treatment of many malignancies.



### TEAM/

Prof. ANDREI GUDKOV, founder and CSO;  
 Dr. ALEXANDER POLINSKY, founder and President;  
 Dr. ANDREY LEONOV, CEO;  
 Dr. KATERINA ANDRIANOVA, Development;  
 Dr. DENIS KAZYULKIN, Medicinal Chemistry.  
 Partners: Roswell Park Cancer Institute (Buffalo, New York, USA).

### RESULTS ACHIEVED/

The company's portfolio consists of a number of molecules effective against prostate and breast cancer, ovarian cancer and melanoma. Leading drug candidate aimed at treatment of leukosis, which unique mechanism of action has been confirmed, is now in the final stages of preclinical studies. Its clinical trials are scheduled for 2015.

### MARKET POTENTIAL /

The world market of anti-cancer drugs exceeds U.S. \$ 100 Billion. The products developed by the company will help to treat up to 40% of all registered types of cancer.

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## DEVELOPMENT OF ANTICANCER DRUGS WITH NEW MECHANISM OF ACTION - INHIBITION OF PHOSPHOFRUCTOKINASE PFKFB3 (INHIBITOR OF CANCER METABOLISM)

### COMPETITIVE ADVANTAGES /

- 1) broad applicability in variety of cancers
- 2) low level of adverse reactions
- 3) non-expensive manufacturing
- 4) efficient treatment of solid tumors
- 5) application as a drug of first-line treatment
- 6) stratification of patients based on the biomarkers for quick response measurement.

### ESSENCE OF INNOVATION /

The ability of the developed drug to affect one of the most important molecular mechanisms linked with oncogenesis - glycolytic nutrition which determines possible wide anticancer activity of the drug.

### RESULTS ACHIEVED/

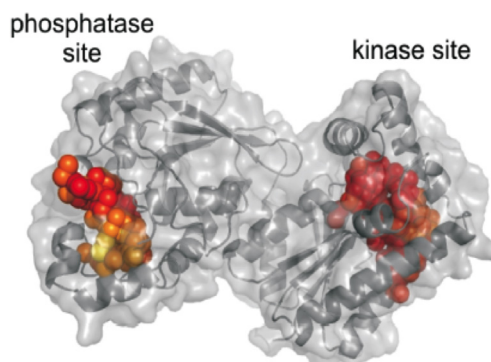
Compounds' efficiency in vitro (cancer cells panel), in vivo (xenografts), safety and favourable pharmacokinetic profile in 1 month toxicology studies at rats are shown.

### MARKET POTENTIAL /

The annual sales of the successful broad anti-cancer drug can be above 5 bln USD.

### ECONOMIC EFFECT/

Substantial increase of survival period and life quality of patients.



### TEAM/

FEDICHEV PETR;  
KHOLIN MAKSIM;  
ZHIDKOVA TATIANA;  
PYRKOV TIMOFEY.

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## LEKSYSTEMS, LLC

# DRUGS FOR TREATING ONCOLOGICAL AND NEUROLOGICAL DISEASES BASED ON NANOSCALE DELIVERY SYSTEM TECHNOLOGIES (NANOMEDICINE)

## COMPETITIVE ADVANTAGES /

The proposed delivery systems allow drugs to efficiently penetrate into the nidus via directed transport. Delivery systems provide a 1.5–3-fold increase in drug bioavailability, efficacy, and safety.

## MAIN POINTS OF INNOVATION /

The key element is a drug delivery system using lactic and glycolic acid copolymers (50–350 nm nanoparticles) and a medicine delivery system using albumin particles (100–350 nm nanoparticles).

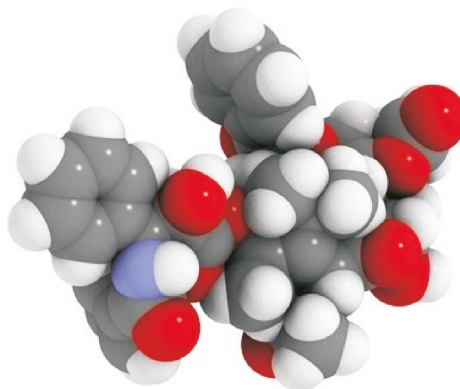
## ACHIEVED RESULTS /

The developed drugs are in the early and late stages of preclinical studies.

## MARKET POTENTIAL /

In 2009 the global market of drug delivery systems was worth over 100 billion dollars, and it is forecasted to grow to 200 to 700 billion dollars by 2015. The market for neurological, oncological, and genetic drugs comprises over 55% of the entire pharmaceutical market.

Лек СИСТЕМС



## THE TEAM /

YASIR HAMDY, CEO.

PROJECT PARTNERS:

Frankfurt University;  
King's College London;  
Geneva Foundation for Medical Education and Research, WHO Collaborating Centre;  
CNRS Research Institute of Biotechnology, France;  
I.M. Sechenov First Moscow State Medical University of the Russian Federation Ministry of Health and Social Development.

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## GAMMA GLOBAL LLC

# TECHNOLOGY FOR PREDICTING RECURRENCES AND CHEMOTHERAPY SENSITIVITY IN PATIENTS WITH BREAST CANCER BASED ON GENE EXPRESSION ANALYSIS

### COMPETITIVE ADVANTAGES /

A unique gene pattern in a panel and a unique algorithm to calculate recurrence risk, accessible to consumers in Russia, relatively low cost. There are no Russian analogs.

### MAINPOINTS OF INNOVATION /

The new technology creates a system to determine the gene expression profile for malignant tumors to identify groups of patients with stage I-IIa breast cancer with high and low risk of distant metastasis.

### ACHIEVED RESULTS /

A bank has been created with 370 paraffin wax-embedded tissue samples. A method has been developed for obtaining results from the morphological description stage before results of gene expression are obtained.

### MARKET POTENTIAL /

This innovation has the potential to achieve structural shifts in the industry or significant changes in technologies used and/or process costs.



### THE TEAM /

VLADIMIR KONSTANTINOVICH BOZHENKO, Doctor of Medicine, Professor, PhD in Biology, Project Research Adviser;  
OLEG PETROVICH BLIZNYUKOV, Doctor of Medicine, Pathomorphologist, Research Consultant;  
ELENA ALEKSANDROVA KUDINOVA, PhD in Medicine, Clinical Diagnosis Laboratory Doctor, Research Consultant;  
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## NOMOTECH, LTD

# DIFFERENTIAL ANALYSIS OF ONCOMUTATIONS IN SATURATED DNA SAMPLES (DAOSS) FOR EARLY NON-INVASIVE CANCER DIAGNOSTICS

### COMPETITIVE ADVANTAGES /

DAOSS technology increases sensitivity and reliability of cancer mutation detection and decreases its cost. In pilot experiments, reliable detection of a single mutant DNA molecule was possible against the background of more than 100,000 molecules without mutation.

### ESSENCE OF INNOVATION /

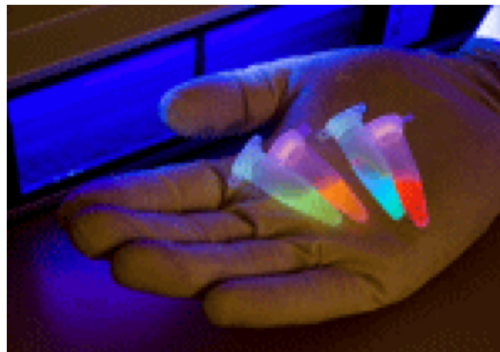
Our approach is based on a novel NGS library preparation method and a special bioinformatic algorithm. This combination opens the way to near-absolute elimination of PCR and NGS errors – and hence to ultrasensitive detection of cancer mutations.

### RESULTS ACHIEVED/

Kits for ultrasensitive mutation detection: 2013 – kit targeting 7 regions (CancerSnap-7) – developed; 2015 – kit targeting 50 regions (CancerSnap-50) – in work.

### MARKET POTENTIAL /

Clinical market entry – planned in 2016.



### TEAM/

ANDREW ZARETSKY,  
(Assay design & validation);  
DMITRY SHAGIN (R & D);  
IVAN VOLCHENKOV,  
(Bioinformatics / software);  
TIMOFEI PANFILOV, (CEO);  
ADVISORY BOARD:  
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NIKOLAY ZHUKOV, Head of Clinical  
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## INCURON, LLC

# DEVELOPMENT OF INNOVATIVE CURAXIN-BASED PHARMA CEUTICALS FOR TREATING ONCOLOGICAL DISEASES

### COMPETITIVE ADVANTAGES /

Curaxins affect several targets within a tumor cell limiting its drug resistance capability and increasing the efficacy of tumor growth suppression. Curaxins are applicable for recurrent courses due to the lack of genotoxicity.

### ESSENCE OF INNOVATION /

Curaxins block activity of the chromatin remodeling complex FACT (FACilitates Chromatin Transcription) and in relation to that simultaneously influence several cell signaling pathways (p53, PI3K/AKT/mTOR, NF- $\kappa$ B, HSP) with disrupted regulation in cancer cells.

### RESULTS ACHIEVED/

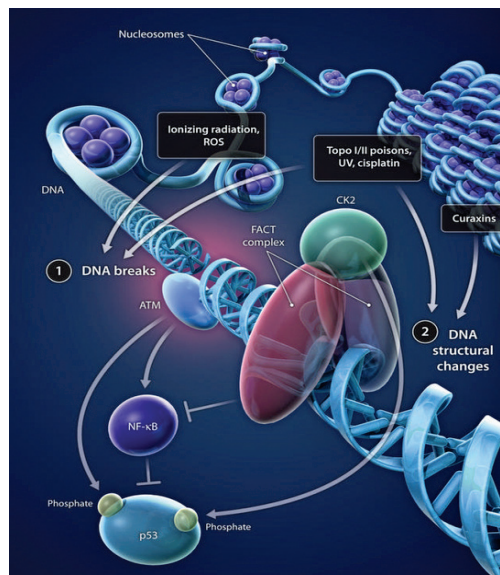
CBL0102: Phase 1 CT in Russia has been completed; Phase I/II CT (in combination with erlotinib) in USA is in progress.

CBL0137: Phase 1 CT in Russia and USA is being completed. Preclinical studies of the combined administration are in progress.

Intellectual property: 12 invention patents, 8 international applications that will become national patents in 2014-2015 protecting the obtained results in the global pharmaceutical market.

### MARKET POTENTIAL /

Oncological diseases take a prominent place in the morbidity and mortality ratings. The number of patients grows annually due to the aging of population in developed countries. The market share of targeted antitumor medicines reaches as high as 65-70%.



### TEAM/

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Director of Clinical Development;  
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## ONCOMETRIX, LLC

# DEVELOPMENT OF A DEVICE FOR HIGH-VALUE INSTANT DIAGNOSTICS OF PROSTATE CANCER BASED ON THE ANALYSIS OF PROSTATIC SECRETIONS AND EJACULATE

### COMPETITIVE ADVANTAGES /

The developed product will be in demand on the market at the time of commercialization due to the considerably higher sensitivity and lower price. There are no Russian and foreign analogues of this test.

### MAIN POINTS OF INNOVATION /

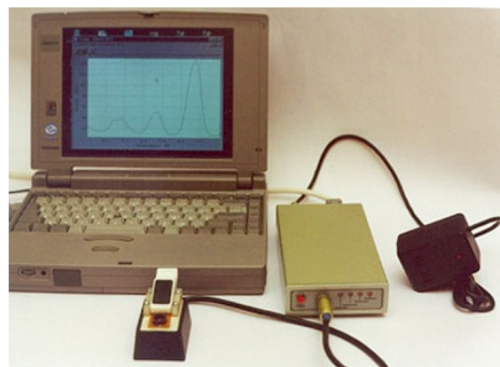
The levels of certain biomarkers of non-protein origin are measured in the prostatic secretions and/or ejaculate. The sample is evaluated using colorimetric, enzymatic and electrochemical methods.

### ACHIEVED RESULTS /

An application is filed for obtaining an international patent for the product. Development and creation of a portable diagnostic device. Clinical trials of a portable diagnostic device.

### MARKET POTENTIAL /

The developed test can replace the PSA test and drive the latter out of the market of prostate cancer diagnostics both in Russia and abroad.



### THE TEAM /

MAXIM ROSSMANN,  
PhD, Project Director;  
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PhD in Chem. Sc.,  
Research Project Manager  
IRINA SOLTAMOVA, CEO;  
PAVEL SHASHKOV,  
PhD in Phys-Math. Sc.,  
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ISTVAN BOROS,  
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## IMMUNOTHERAPY OF B CELL MALIGNANT DISEASES

### COMPETITIVE ADVANTAGES /

Generium's bispecific molecule demonstrates higher killing of malignant cells and improved drug tolerability properties.

### MAIN POINTS OF INNOVATION /

The molecule recognizes a B cell marker that is found in a wide range of hematologic malignancies, including acute lymphoblastic leukemia, chronic lymphocytic leukemia, and various types of non-Hodgkin lymphomas.

### ACHIEVED RESULTS /

The project will involve creating a bispecific antibody (BsAB) aimed at engaging cytotoxic effector cells of the human immune system against lymphoma B cells.

### MARKET POTENTIAL /

In comparison with other BsAB designs, Generium's bispecific molecule demonstrates higher killing of malignant cells and improved drug tolerability properties.



### THE TEAM /

SERGEY RUCHKO, CEO;  
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ANDREY PETROV,  
Chief Science Officer;  
MAXIM LYKOV, COO;  
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## BIOMARKER-RU, LLC

# DIAGNOSIS OF ONCOLOGICAL DISEASES VIA ANALYSIS OF DNA CIRCULATING IN BLOOD PLASMA (M-TEST)

### COMPETITIVE ADVANTAGES /

1. sensitivity and specificity of 95–98% (better than any other cancer diagnostics methods)
2. detects all types of cancer
3. effective even at early stages of disease
4. requires only 0.2 ml of blood plasma (no biopsy needed)
5. quick (24 hours), inexpensive (cost price approximately \$250)

### MAIN POINTS OF INNOVATION /

The test is based on analyzing methylation of free circulating DNA. A unique DNA amplification method allows for analysis of methylation of the entire genome using 0.2 ng of DNA. A method has been developed to select biomarkers for the entire genome, which achieves sensitivity and specificity of 95–98%.

### ACHIEVED RESULTS /

A DNA amplification technique has been developed, a platform has been created to search for biomarkers, and candidate biomarkers have been selected. Preliminary studies of M-TEST: 1 error in 33 samples, test duration 24 hours, test cost price approximately \$250.

### MARKET POTENTIAL /

M-TEST can be used for cancer screening (universal test for all types of cancer), for confirming diagnosis, and for monitoring treatment efficacy. The global market of innovative cancer diagnostics is estimated to be \$2.5 billion, with CAGR of 45%.



### THE TEAM /

ANATOLY MELNIKOV,  
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EGOR MELNIKOV, CEO;  
GEORGY NIKITIN, Commercial Director.  
Private equity fund investment department manager;  
VIKTOR LEVENSON, Scientific Consultant. Co-founder of USBiomarkers.

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(under construction)



## PRIMEBIOMED, LLC

# DEVELOPMENT OF CHITINASE-LIKE PROTEINS-BASED TEST SYSTEM FOR THE EARLY DIAGNOSTICS OF CANCER

### COMPETITIVE ADVANTAGES /

The project will develop a system for simultaneous measurement of chitinase-like proteins (YKL-40, YKL-39 and SI-CLP) concentrations in the circulation. In order for this process takes no more than 90 minutes, the quickest method is developed on the basis of ELISA, which will minimize the cost of clinical laboratory tests and speed up the diagnostic process.

### ESSENCE OF INNOVATION /

Multiplex diagnostic test based on the analysis of 3 chitinase-like proteins YKL-39, YKL-40 and SI-CLP will be developed. This test will allow early diagnostics and prognosis analysis of gliomas, colorectal, ovarian and prostate cancer. Developed diagnostic test will allow rapid inexpensive and highly sensitive diagnostics of tumours at early stages.

### RESULTS ACHIEVED/

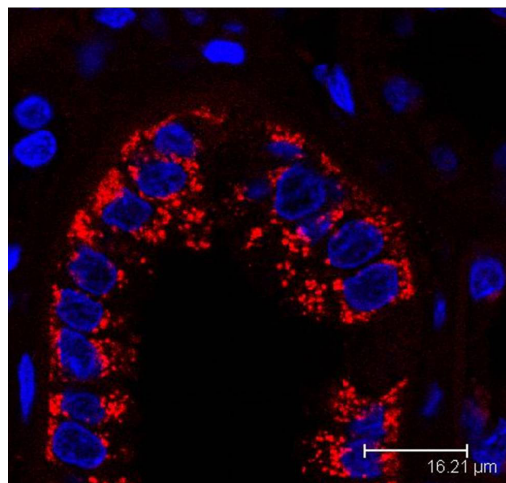
Analysis of chitinase-like proteins on mRNA level was performed for various types of tumours. Increased expression was found in gliomas, digestive tract tumours and ovarian cancer.

### MARKET POTENTIAL /

World market (Europe and USA) - 470000 tests, 9 mln USD.  
Russian market- 115000 tests, 80 mln. Roubles.

### ECONOMIC EFFECT/

Science. Diagnostics. Health.



### TEAM/

ALEXEI GRATCHEV;  
PhD JULIA KZHYSHKOWSKA;  
Prof, PhD OLGA KOVALEVA;  
PhD DARIA SAMOILOVA;  
ALEXANDRA PUNEGOVA.

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## RECEPTOR, SPC

# A NEW GENERATION OF BIOMATERIALS FOR BONE RECONSTRUCTIVE SURGERY

### COMPETITIVE ADVANTAGES /

High efficiency, reasonable cost of goods sold, the lack of negative side effects, convenience for the surgeon and guarantee the desired result in the recipient provide a dominant competitive advantage of our products.

### ESSENCE OF INNOVATION /

Manufacturing technology of bone biomaterials new generation with a given osteogenic potential, providing reception of standardized matrices and a wide variety of osteoinductive fillers to increase the quality and speed of regeneration.

### RESULTS ACHIEVED/

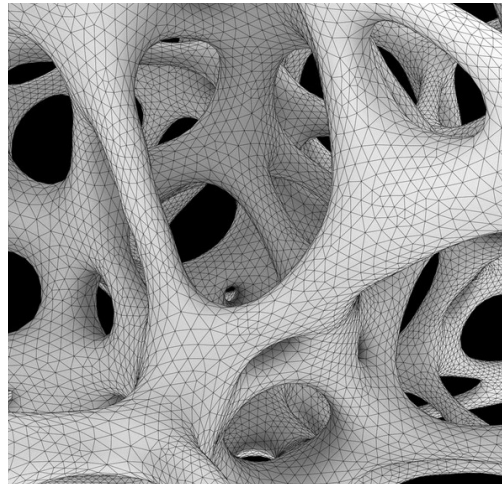
A unique processing technology xenogeneic bone, provides the highly biocompatible standardized bone matrices guaranteed full osseointegration and controlled mineralization in the body of the patient.

### MARKET POTENTIAL /

According to Rosstat, the annual demand for materials for traumatology/ orthopedics is nearly 20 million. Sets and the demand for them is growing. Due to severe competitive advantages the market potential of our products in this segment of the market is enormous.

### ECONOMIC EFFECT/

«Guarantee your move».



### TEAM/

PHD FADEEV R.S;  
PROFESSOR. AKATOV VS.;  
PHD FADEEV IS.;  
PROF. SKLYANCHUK ED.;  
PROF. LEKISHVILI MV.;  
PHD KHAUSTOV SA.

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## OSTEROS BIOMEDICA, LLC

# DEVELOPMENT AND COMMERCIALIZATION OF DRUG PRODUCT FOR THE TREATMENT OF TUMOR-INDUCED BONE LESIONS (MBC-11)

### ESSENCE OF INNOVATION /

MBC-11 is chemically synthesized unique conjugate of two molecules – bisphosphonate and chemotherapeutic agent. First component provides the target delivery of conjugate into bone destruction site and the second one destroy bone-associated tumor cells.

### RESULTS ACHIEVED/

The 1 phase clinical trial was initiated in the Q3 2014 year.

### MARKET POTENTIAL /

The median survival of patients with bone metastasis ranges from 6 to 48 month depending on tumor type. More than half of such patients have skeletal-related events: severe pain, pathologic fractures, compression of spinal cord.

Such complications do not only reduce the quality of life, but also significantly increase the cost of the treatment.

The volume of the target market is \$ 5.5 billion.

### ECONOMIC EFFECT/

Improving quality of life of seriously ill patients.

# OSTEROS

B I O M E D I C A

### TEAM/

EKATERINA IVANOVA, Ph.D.,  
General Director;  
ALEXANDR KARPEISKY, D.Sc.,  
Chief Scientific Officer;  
SHAWN ZINNEN, Ph.D.,  
Chief Development Officer.

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## METAMAX, LLC

# DEVELOPMENT OF INNOVATIVE BIOPHARMACEUTICAL DRUGS BASED ON P16 PEPTIDE- CDK INHIBITOR TO TREAT TUMORS RESISTANT TO CLASSIC CHEMOTHERAPY AGENTS (INCLUDING COLORECTAL CANCER, PANCREATIC TUMORS AND OTHERS)

### COMPETITIVE ADVANTAGES /

Targeted therapy via cell death activation;

- selectivity to tumor cells;
- cytotoxic agent delivery without
- biomembrane alteration;
- synergetic effect with known cytostatics.

### ESSENCE OF INNOVATION /

MM-D37K is a «chimeric» peptide. It consists of a transport sequence (responsible for cell penetration) and cytotoxic amino acid sequence responsible for tumor cell death.

### RESULTS ACHIEVED/

Pre-clinical studies MM-D37K completed. Phase I/IIa clinical trial started in 2014. First patients have been enrolled into the trial.

### MARKET POTENTIAL /

Market size by 2017 year (7 major markets): gastro-intestinal tumors \$7,8 billion; pancreatic tumors \$ 1 billion; glioma - \$ 0.3 billion. Market size growth is due to morbidity increase and new therapies launch.

### ECONOMIC EFFECT/

One of the most promising approach to treat malignant neoplasms.



### TEAM/

LARISA PLEKHOVA, MD, CEO MetaMax, project manager on clinical stage;  
Dr. VLADIMIR BOZHENKO, PhD, scientific advisor, Head of cell technology laboratory in Russian Scientific Roentgen Radiology Center.

### CONTACTS /

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# ONKOBIOMARKER DEVELOPMENT AND IMPLEMENTATION INTO PRACTICE OF A NEW EARLY DIAGNOSTIC METHOD OF MALIGNANT NEOPLASMS

## COMPETITIVE ADVANTAGES /

ELI-Cancer-Test differential-diagnostic multicomponent test system under development will make it possible to identify cases of malignant tumor growth regardless of anatomical localization and histological nature, that is, will be universal. The test system is based on synthetic peptide fragments of tumor-associated antigens, the cost of which is many times lower than that of both natural antigens and recombinant antigens used by competitors' solutions.

## ESSENCE OF INNOVATION /

Use of the autoantibody panel for screening and detection of oncopathologies in the early stages of the disease.

## RESULTS ACHIEVED/

The algorithm for the selection of potential epitopes was developed. Pilot experiments for the selection of active epitopes were conducted. Achieved characteristics:  
70% sensitivity  
70% specificity.

## MARKET POTENTIAL /

It is assumed that already in the next 3-5 years high confidence detection of early marker changes can become an effective diagnostic tool, suitable for mass medical examination of the population, and aimed at detection of cancer at the early stages of its development. Onkobiomarker Company can create a segment in the market of the Russian Federation and in other countries with a dominant share.



## TEAM/

OLEG KRYLOV,  
General Director;  
RUSTEM AMIROV,  
Deputy General Director;  
ALEKSANDR POLETAEV,  
Research Project Manager;  
SHAMIL GANTSEV,  
Chief Consultant for Oncology;  
ANDRES BREDBERG,  
Consultant for Molecular Studies.  
PROJECT'S PARTNERS:  
Managing Company  
«Savings and Investments» CJSC.

## CONTACTS /

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## TRANSLEK, LLC

# MODULAR NANOTRANSPORTERS OF ANTICANCER DRUGS

### COMPETITIVE ADVANTAGES /

significant enhancement in therapeutic effects of anti-cancer drugs, biodegradability based on the use of recombinant molecules, capability of replacement of modules for alternative diseases and delivery of a wide range of anti-cancer substances.

### ESSENCE OF INNOVATION /

Developing modular nanotransporters (MNT) capable of targeted delivering anti-cancer drugs directly into the nucleus of cancer cells. The technology increases cell specificity and therapeutic effect of chemotherapy.

### RESULTS ACHIEVED/

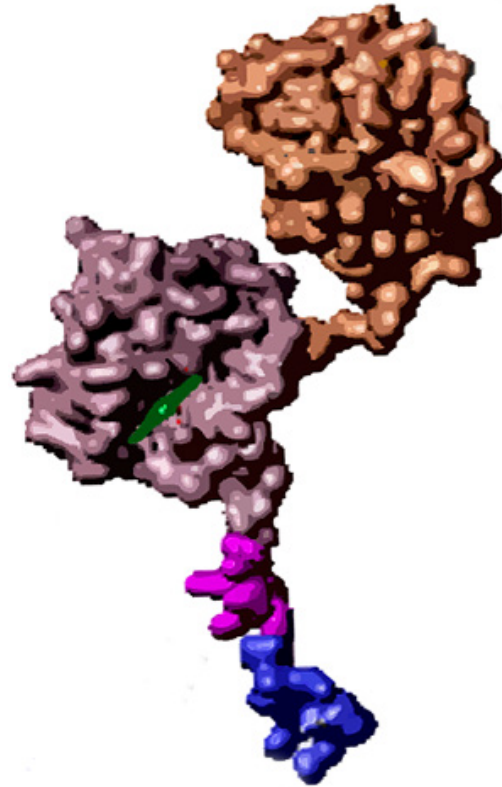
Proof of concept successfully completed in vitro and in vivo. Preclinical studies are conducted (bladder cancer and glioblastoma). The modular nanotransporters technology received the Prix Galien in 2013.

### MARKET POTENTIAL /

430,000 cases of bladder cancer and 240,000 cases of brain and nervous system tumours – glioblastoma is the most common, and the most lethal, of these tumours are diagnosed per year (WHO).

### ECONOMIC EFFECT/

Modular nanotransporters – tool for targeted delivery of pharmaceuticals.



### TEAM/

Multidisciplinary team of 7 people, including specialists in molecular biology, biophysics, radiochemistry. Chief Scientist. Ph.D., Dr. Biology Sc., Full Prof. of Biophysics, Lomonosov Moscow State Univ.; Head of Laboratory, Inst. of Gene Biology of the Russian Acad. of Sc.

### CONTACTS /

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## CHEMICALSERVICE, LLC

# CANCER SCREENING BY SALIVA

### COMPETITIVE ADVANTAGES /

non-invasive, universal (one analysis to several types of cancer), suitable for early screening, low cost survey, scalable business model can be easily integrated into the existing health care system.

### RESULTS ACHIEVED/

A prototype methodology developed, own laboratory organized, an application for an invention filed, private investment attracted, an experienced team formed.

### MARKET POTENTIAL /

Target audience - the entire population older than 30 years.

Promising markets: EU, USA, China, India, Japan, Russia.

Business model of B2B, B2G.

Potential commercialization of more than \$ 1 billion.



### TEAM/

BELSKAYA LYUDMILA, Ph.D. in chemistry.

Science director;

KOVALENKO DMITRY,

Commercial Director;

KOSENOK VICTOR, Ph.D., MD,

academician RMTN, chief oncologist

Omsk region - Medical Consultant

Gilbert Massard, Ph.D., MD, academician

RAMN - Medical Consultant.

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## FELICITEX-SK, LLC

# DEVELOPMENT OF NEW THERAPEUTICS AND COMPANION DIAGNOSTICS TARGETING QUIESCENT CANCER CELLS

### COMPETITIVE ADVANTAGES /

Advantages: selectivity against quiescent cancer cells, wide therapeutic window, works against multiple cancers, personalized medicine through a companion diagnostic assay, improves effectiveness of conventional chemotherapy, reduces or eliminate cancer recurrence.

### ESSENCE OF INNOVATION /

FeliciteX is developing first in class therapeutics targeting the as yet unaddressed major mechanism of cancer resistance – cancer cell quiescence. The treatment would make quiescence cells vulnerable to chemotherapy and radiation therapy, and reduce or eliminate pools of resistant cancer cells, including metastases.

### RESULTS ACHIEVED/

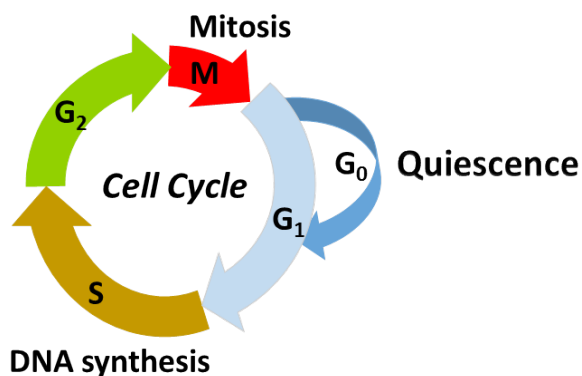
A validated, high quality lead series of small molecules that are highly selective, active in cells and in mouse xenografts, patented. Demonstrated tumor regression in combination with a first-line therapeutic. A series of validated hits, unrelated to the lead series; these small molecules are very active in biochemical screens and are in process of hit to lead conversion, patentability assessment is favorable, intend to file in Q1 2015. Developed and filed IP on a companion diagnostic assay for patient selection.

### MARKET POTENTIAL /

The global market for oncology drugs reached 91 billion dollars in 2013 with the annual projected growth is 5.4%. More than half of diagnosed cases are pancreatic, colon, lung, breast, prostate, and ovarian, to which the FeliciteX therapy is most applicable.

### ECONOMIC EFFECT/

Increase effectiveness of chemotherapy, reduce side effects, reduce or eliminate cancer recurrence.



### TEAM/

MARIA VILENCHIK, PhD Founder, Scientific Director;  
MICHAEL FRID, PhD VP, Chemistry;  
OLGA KUPRIYANOVA, CEO.

### CONTACTS /

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## ANDRUS REO, LLC

# LAUNCHING OF ORIGINAL ANTITUMOUR DRUG BASED ON REO VIRUS

### COMPETITIVE ADVANTAGES /

- Confirmed efficacy and safety of the product, that several times exceed existing solutions;
- High level of selectivity;
- Final stage of product development, high level of successful registration;
- Comprehensive protection of IP;
- Product is licensed from Canadian public biotech company;
- Safety of basic concept (wild virus strain) over competitors' genetically modified solutions;
- Consent of the developer to all-round support for the project on the territory of RF and CIS.



### TEAM/

Management company and shareholder RVC Biofund Ltd.

### ESSENCE OF INNOVATION /

Drug has been developed on the base of one of the reovirus strains that actively proliferates inside of the cells with gene regulating cells proliferation (Ras) and kills them. Proliferation cycle continues in cancer tissue till virus faces healthy cells that can stand against infecting. Very high level of safety.

### RESULTS ACHIEVED/

The analysis of the preliminary data of international multicentral clinical trials Phase III confirms the safety and efficacy for head and neck cancer therapy.

### MARKET POTENTIAL /

Russian market is estimated at \$50 mln annually, market scope of metastatic head and neck cancer therapy is sized up to whole head and neck cancer therapy market.

### CONTACTS /

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# IMPLEMENTATION OF TECHNOLOGY FOR EARLY DIAGNOSTICS, SELECTION OF INDIVIDUAL DRUG COMBINATIONS AND PERSONALIZED MEDICINE IN ONCOLOGY IN RUSSIA

### COMPETITIVE ADVANTAGES /

The developed diagnostic system will allow:

- Excluding the costs for the therapy known to be ineffective,
- Avoiding selection of drugs by trial and error method,
- Increasing effectiveness of oncology patients' treatment.



### ESSENCE OF INNOVATION /

System diagnostics and personalized selection of the optimal cancer treatment will allow to detect numerous defects in a tumor, and at the same time to analyze them using proprietary technology in the automatic mode.

### RESULTS ACHIEVED/

Diagnostic panel and analytical software have been designed, tested and optimized for inclusion into the Silver, Gold and Platinum versions. In collaboration with N. N. Blokhin Russian Cancer Research Center, a range of evidences of the system effectiveness has been obtained.

### MARKET POTENTIAL /

The diagnostic system will be available in three versions that will differ in cost and type of diagnostics, a doctor and a patient will be able to choose the most appropriate one.

### CONTACTS /

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## DEVELOPMENT AND COMMERCIALIZATION OF THE DRUG (OC000459) FOR PATHOGE- NETIC TREATMENT OF ALLERGIC DISEASES

### COMPETITIVE ADVANTAGES /

Reduce the frequency and severity of asthma exacerbations.  
Reduces the frequency of respiratory tract infections.  
Additionally, it may be used for the treatment of allergic rhinitis, conjunctivitis, atopic dermatitis.

### ESSENCE OF INNOVATION /

OC000459 is a active selective antagonist of CRTH2 receptors that plays a key role in initiation and maintenance of allergic inflammation.

### RESULTS ACHIEVED/

The phase III clinical study (registration) was initiated.

### MARKET POTENTIAL /

There are 4 to 8% of population in Russia suffering from bronchial asthma.  
The prevalence of the disease is increasing, especially among children in most of the countries. It is expected that the shift in the structure of drug utilization will be from rescue drugs for asthmatic attacks to maintenance (basic) therapy.

### ECONOMIC EFFECT/

Safe and effective tool for asthma control.



### TEAM/

JULIA MOSKOT,  
general director, clinical study manager;  
ALEXANDER ALEXANDROV,  
medical director.

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## INPHARMA, CJSC

# DEVELOPMENT OF INNOVATIVE ANTI-INFLAMMATORY DRUG WITH A NEW MECHANISM OF ACTION

### COMPETITIVE ADVANTAGES /

The drug solves a key problem of anti-inflammatory therapy such as the presence of a dangerous ulcerogenic side effect, which is the frequent cause of hospitalization and death for many patients taking NSAIDs.

### MAIN POINTS OF INNOVATION /

The core of the solution is the technology of selective inhibition of the inducible NO-synthase (iNOS). This isoform of the enzyme catalyzes the excessive production of nitric oxide, which is one of the key mechanisms of pathological inflammation.

### ACHIEVED RESULTS /

Preclinical studies (toxicology, pharmacodynamics, pharmacokinetics, the technology of synthesis of the substance, the pharmaceutical development of the substance and drug formulation).

### MARKET POTENTIAL /

The target market of the product is the segment of non-steroidal anti-inflammatory drugs (NSAIDs) that includes drugs with analgesic, antipyretic and anti-inflammatory effects.



### THE TEAM /

NATALIA CHALDYSHEVA, CEO;  
NATALIA BELSKAYA,  
Director of Preclinical Research;  
SERGEY ZAITSEV,  
Head of Department of Medicinal  
Chemistry;  
JOSEPH SCHWARZ,  
Consultant on the Development  
of Pharmaceutical Substances  
and Finished Dosage Form  
of a New Drug.

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## INNOVATIVE PHARMACOLOGICAL RESEARCH, LLC (IPHAR)

### DEVELOPMENT OF INNOVATIVE ANTI-ULCER DRUG, A REVERSIBLE PROTON PUMP INHIBITOR, BASED ON PIRIDOPIRASINDION

#### COMPETITIVE ADVANTAGES /

Technical, scientific and clinical facilities of more than 10 institutions and partner companies located in Tomsk and other cities of Russia which the long-term collaborative relationships are established with , are used in the course of development.

#### MAIN POINTS OF INNOVATION /

The drug reversibly inhibits the proton pump - H<sup>+</sup>, K<sup>+</sup>-ATPase enzyme, which is responsible for excretion of hydrochloric acid in the stomach. The drug has no negative side effects typical for irreversible proton pump inhibitors.

#### ACHIEVED RESULTS /

The project is currently at the stage of the synthesis technology development, pharmaceutical development and conduction of preclinical studies of efficacy and safety for innovative drug.

#### MARKET POTENTIAL /

Anti-ulcer drugs currently available on the market have several side effects limiting their application. In this connection there is a need of development of a new drug which has no such serious side effects.



#### THE TEAM /

VENIAMIN HAZANOV, CEO;  
NATALIA BELSKAYA,  
Deputy CEO of the Pre-Clinical Studies;  
Director of Projects;  
SERGEY STANKEVICH;  
VLADIMIR GOGVADZE;  
JOSEPH SCHWARZ.

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## HIGH MEDICAL TECHNOLOGIES, LLC

# DEVELOPMENT OF A NEW ULTRASONIC TECHNOLOGY, WHICH ALLOWS TO OBTAIN IMAGES OF BRAIN STRUCTURES AND BLOOD VESSELS THROUGH ANY CRANIAL BONES WITH TRAJECTORY CONVENIENT FOR THE PHYSICIAN

### COMPETITIVE ADVANTAGES /

Development of Imaging Technology of internal organs, including blood vessels and brain structures through thick cranial bones. Modern ultrasonic diagnostic devices do not have this capacity.

### MAIN POINTS OF INNOVATION /

The innovative approach allows to carry out ultrasound imaging of the brain structures in real time mode. The implementation of new original blood flow imaging algorithms is planned that does not require the full knowledge of the parameters of heterogeneity of cranial bones.

### ACHIEVED RESULTS /

Theoretical and physical justification of a possibility to obtain ultrasound images of the brain structures through the thick cranial bones was developed. A number of direct physical experiments was conducted with the fragments of cranial bones.

### MARKET POTENTIAL /

The world market is USD 6 bln and it has a tendency to increase. There is no company that possess capabilities of serial production of modern digital ultrasound platforms of expert class in Russia. The effectiveness of the new ultrasound technology is very high.



### THE TEAM /

ANDREY MOLOTILOV, CEO;  
 ARKADIY KOROTKOV,  
 Deputy CEO;  
 VICTOR SVET,  
 Chief Designer;  
 SERGEY BAIKOV,  
 Leading Research Assistant, Leading  
 Programmer.  
 PROJECT PARTNERS: AMM-2000 Ltd.

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## ALLIED INNOVATIONS, LTD

# TEST-SYSTEM FOR CELLULAR HEMOSTASIS DIAGNOSTICS -TROMBOCYTEST

### COMPETITIVE ADVANTAGES /

TROMBOCYTEST - a process and device for fast on-line detection of cell activity of patient's whole blood without preliminary preparations, the designed lab-on-a-chip technology provides global competitive strength and import substitution.

### ESSENCE OF INNOVATION /

TROMBOCYTEST - an invention of method and device for fast detection of hemostasis disturbances and assessment of risks of their progress, which provides high tech medical service at the point of care (POC).

### RESULTS ACHIEVED/

Developed a physical prototype and the design documents for construction of the diagnostics test-system. The design parameters are proven with the prototype and experimental tests.

### MARKET POTENTIAL /

The in-vitro diagnostics market of hematology and hemostasis has a good dynamics. It is expected to grow up to \$1.05 B / year by 2017. A license for manufacturing and sales of the product is expected to attract the interest of big industry players, including such as Roche Diagnostics, Abbot Diagnostics, Ortho/Life Scan, Bayer/Simens, Beckman Coulter, Dade Behring/ Siemens.

### ECONOMIC EFFECT/

Technology of TROMBOCYTEST opens the way to cheap, fast and accurate biosensor platform to develop diagnostics systems in a wide range of applications related to blood cell function, which reduce the gap between in-vitro and in-vivo tests. Project's slogan - «Reduce the gap between in-vitro and in-vivo tests».



### TEAM/

VLADIMIR KAZARITSKIY, PhD, CEO, previous position - CEO of Company group « Siblarex» Ltd;  
ZUFAR GABBASOV, PhD, Director for R&D, The Russian cardiology center, ReaKit Ltd;  
SERGEY DOMOGATSKIY, PhD, Director for production processes, The Russian cardiology center, IMTEK Ltd.

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## SEMIOTIK, LLC

# MICROCHIP MANUFACTURING FOR BLOOD IMMUNOGLOBULINS DETECTION

### COMPETITIVE ADVANTAGES /

The analysis on hundreds immunoglobulins reveals 100 pathologies by using single chip. Decrease the false-negative result percentage due to multiple versions of one antigen on the chip. High sensitivity; dynamic range is several orders wider comparing with ELISA.

### ESSENCE OF INNOVATION /

The plastic chip with 500 antigens in four repeats replaces usual test systems, simplifying analysis and reducing the their cost; it allows realizing the cancer diagnosis using signatures of markers. 500 antigens allow analyzing probe on hundreds immunoglobulins, revealing 100 pathogens.

### RESULTS ACHIEVED/

The prototype of the chip is developed, diagnostic value of blood immunoglobulind for oncology is confirmed. Synthetic methods of most high purity ligands are developed, the plan of research activity and the plan of microchip testing are developed.

### MARKET POTENTIAL /

The general capacity of potential market segments in the Russian Federation in 2015 will be 10,75 million analyses.

The planned share of the Russian Federation market of microchips in 2016 is prognosed on 0,8% or 88 thousand microchips.

### ECONOMIC EFFECT/

lab-on-chip.

MOLECULAR DIAGNOSTICS  
**SEMIOTIK**

### TEAM/

N.V. BOVIN  
General director;  
S.K. VLASOV  
Business development director;  
N.V. SHILOVA  
Senior chip specialist;  
A.YU. NOKEL  
General technical manager;  
G.V. PAZYNINA  
Senior synthesis specialist.

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# IMPEDANCE MEDICAL TECHNOLOGIES, LLC DEVELOPMENT AND IMPLEMENTATION OF PERSONALIZED ELECTRICAL IMPEDANCE TOMOGRAPHY SYSTEM FOR DIAGNOSTICS OF BREAST PATHOLOGIES

## COMPETITIVE ADVANTAGES /

The average price of a multi-frequency electrical impedance mammograph is RUB 600,000. The price of a device being developed for personalized instant diagnostics is expected to be RUB 10,000–13,000, which will make it affordable for widespread use.



## MAIN POINTS OF INNOVATION /

The mammograph hardware will become an optimized portable version of the multi-frequency electrical impedance mammograph (MEM) manufactured nowadays combined with a built-in expert computation module.

## RESULTS ACHIEVED /

A device prototype has been developed, clinical testing of the prototype's measuring system is underway.

## MARKET POTENTIAL /

Breast cancer is annually diagnosed in nearly 1mln of women worldwide. There is a need for development of a method enabling early non-invasive breast pathology diagnostics at home, which is affordable to the majority of women.

## THE TEAM /

ANATOLY SMIRNOV, CEO.  
PROJECT PARTNERS:  
V. A. Kotelnikov Institute for Radio Engineering and Electronics of RAS;  
Yaroslavl State Medical Academy.

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## NPO FUNCTIONAL

# THE PROJECT FOCUSES ON THE INTRODUCTION OF A DEVICE AND TECHNIQUES FOR DIAGNOSTICS AND INSTRUMENTAL CONTROL OF THE DEVELOPMENT OF DIABETES AND QUANTITATIVE ASSESSMENT OF THE EFFICACY OF THERAPEUTIC MEASURES

### COMPETITIVE ADVANTAGES /

Unique opportunities for diagnostics of many pathological and normal body conditions, providing information about the patient's condition, which can not be obtained using other known methods; express analysis; in-line assessment of the dynamics of the disease; In Vitro.



### ESSENCE OF INNOVATION /

The developed device records the process of saturation of blood sample with oxygen, is sensitive to changes in the energy level of body cells even at the early stages of diabetes. The analysis of the characteristics of the recorded curve allows to make assumptions about the qualitative and quantitative improvement of the cell's energy exchange and, consequently, the presence and severity of diabetes and the dynamics of its development.

### TEAM/

For a successful project implementation the team comprises experts with a positive experience in:

- scientific research and development, both in medicine and in various areas of physics and biophysics;
- organization and management of commercial activities (distribution, marketing, sales, after-sales service);
- management, coordination and administration of scientific and commercial projects of various scal.

### RESULTS ACHIEVED/

The project is in the final stages of research and development, Laboratory prototype is built, the product has been tested by potential users. The results are supported by preclinical trials and positive feedback from leading medical institutions. 1st Russian patent is obtained - the work is currently ongoing on international IP protection.

### MARKET POTENTIAL /

At least one device must be placed in each hospital and outpatient facility. In this context the need for these devices exceeds 20 thousand units in Russia only. According to the most moderate estimates, worldwide, over 250 million blood tests a year by means of our devices are required only to carry out activities related to the diagnostics of diabetes.

### CONTACTS /

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## ANALYSIS OF SUBSTANCES, CJSC

# CREATION OF A METHOD, DEVICE AND MEDICAL TECHNOLOGY OF CAPILLAROSCOPIC MONITORING OF MICROCIRCULATION DURING SURGERY

### COMPETITIVE ADVANTAGES /

Non-invasiveness,  
High informative value,  
Broad functional capacities;  
User-friendly software,  
Innovative electronic control system,  
Easy to operate,  
Simple adaptation of the device in various  
operating conditions.

### MAIN POINTS OF INNOVATION /

Computer microangiography  
is a non-invasive and reliable method  
of parameterization of tissue peripheral  
circulation.

### ACHIEVED RESULTS /

Computer capillaroscope is included into  
the state register of medical devices,  
it is approved for production and use.



### THE TEAM /

#### PROJECT PARTNERS:

The Ministry of Industry and Trade  
of the Russian Federation;  
Central Research Institute of Dental  
and Maxillofacial Surgery, All-Russian  
Research Institute of Physical Training and  
Sports;  
Onkocet Ltd. Medstyle Effect;  
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and Development Company Ltd.

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## AMPHORA BIOMED, LLC

# DEVELOPMENT OF INSTRUMENTAL AND METHODOLOGICAL SYSTEM BASED ON SUPERRESOLUTION 3D LASER INTERFERENCE MIM MICROSCOPY INTENDED TO THE STUDY OF BLOOD CELLS AND THE DIAGNOSIS OF DISEASES CAUSED BY THEIR PATHOLOGY (MIM BIOMED)

### COMPETITIVE ADVANTAGES /

The advantage of technology is a study of live, unfixed and unstained cells, thus allows to avoid distortions and artifacts and to record in the real-time mode changes in the cells under the effect of certain medicines.

### MAIN POINTS OF INNOVATION /

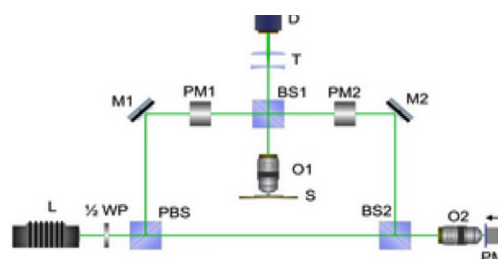
The use of the original technology of vital computer cytomorphometry and laser MIM microscopes for the analysis of live blood cells.

### ACHIEVED RESULTS /

Creating a prototype of highly informative instrumental and methodical complex, on the basis of the original MIM technology for rapid diagnostics of diseases associated with abnormality of morphological and functional state of the blood cells.

### MARKET POTENTIAL /

Market volume of laser interferometric microscopes is USD 210-220 million, with 60% of the market occupied by the world's leading manufacturers of microscopes that can operate in DIC mode. The potential market share captured by the project's products The potential market share is USD 100 million captured by our product.



### THE TEAM /

PAVEL OSIPOV, CEO;  
 KONSTANTIN INDUKAEV,  
 Project Manager;  
 NIKOLAI BUNKIN,  
 Dr. Phys.-Math. Sc., Chief Expert;  
 PAVEL IGNATIEV,  
 PhD Phys.-Math. Sc., Leading Expert.

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## INTRO-MICRO, LLC

# DEVELOPMENT OF INDIVIDUAL GAS ANALYZERS BASED ON COLLISIONAL ELECTRON SPECTROSCOPY (CES) FOR NON-INVASIVE MEDICAL MONITORING ON AN ONGOING BASIS

### COMPETITIVE ADVANTAGES /

CES detectors will be widely demanded directly by medical organizations as a means of objective control of dose and frequency of administration of a drug in pharmacological therapy.

### MAIN POINTS OF INNOVATION /

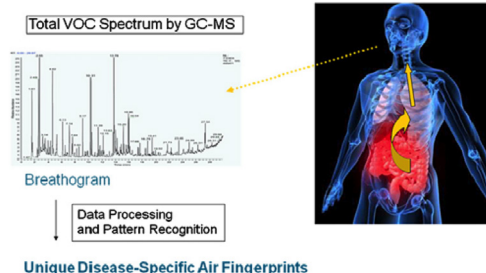
Handheld analyzer with a wide range of detectable molecules and the sensitivity exceeding 1 ppm in air environment. The gadget is operated via smartphone.

### ACHIEVED RESULTS /

Theoretical and experimental studies are carried out. A prototype detector is being developed in order to demonstrate the microprocessor electronics operation and embedded software with acceptable parameters on size and power consumption.

### MARKET POTENTIAL /

An important parameter for the global mass demand product is the price. Thus the price of USD 1,000 for a CES detector and the prospect of its many fold reduction when proceeded to mass production look extremely attractive.



### THE TEAM /

ALEXANDER TSYGANOV, CEO;  
 NATALIA LUNEVA,  
 Head of Clinical Research;  
 ANATOLY KUDRYAVTSEV,  
 Head of the Modeling Group;  
 VICTORIA MIRONENKO,  
 Head of the Financial Unit.

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# SCIENTIFIC AND PRODUCTION ENTERPRISE “HEALTH NAVIGATOR”, LLC

## DEVELOPMENT AND COMMERCIALIZATION OF THE HARDWARE AND SOFTWARE COMPLEX HEALTH NAVIGATOR FOR THE AUTOMATION OF NON-INVASIVE PRENOSOLOGICAL DIAGNOSTICS AND BUILDING UP OF HEALTH RESERVES AND WORKING CAPABILITY OF CHILDREN AND ADULT POPULATION

### COMPETITIVE ADVANTAGES /

The technology allows to give an integrated numerical assessment of psychophysical health, as well as to assess the state of the main morphological and functional indicators and systems of the body, and to have a personalized health-promoting programs for each examined subject.

### ESSENCE OF INNOVATION /

High-tech automated medical equipment – Hardware and software complex. The complex will dramatically improve the efficiency of the examination, accuracy and reliability of measurements using the technology of Health Navigator.

### RESULTS ACHIEVED/

8 applications for patents were submitted to Rospatent and EAPO, 5 of which are already obtained. Working models of two sets of original modules were manufactured.

### MARKET POTENTIAL /

There are some 30,000 potential consumers in Russia and CIS countries.

### ECONOMIC EFFECT/

Health care, improvement of performance and creative longevity of the population.



### TEAM/

VLADIMIR A. ORLOV;  
ANATOLY I. GRIGORYEV;  
YURI M. SHPILEVOY;  
IGOR A. BARANOV;  
OLEG B. FETISOV;  
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## NSL, LLC

# ESTABLISHMENT OF SERIAL PRODUCTION OF A PROFESSIONAL MEDICAL LASER PERFORATOR FOR CONTACTLESS PUNCTURE OF FINGER TISSUES FOR BLOOD SAMPLING, AND PROTOTYPING OF A PEN-LIKE PERSONAL PERFORATOR

### COMPETITIVE ADVANTAGES /

Laser perforator is the only alternative to metal lancets providing absolute sterility, patient and medical staff protection against infection, efficiency, and less painful puncture. Laser puncture technology is certified in the USA, Europe, Russia, China, Korea.

### ESSENCE OF INNOVATION /

Formation of a «microchannel» by evaporation of biological tissues with a 2940 nm laser. Absolute sterility, rapid healing, minimal pain.

### RESULTS ACHIEVED/

Finished prototype model.  
Patents are applied for in Rospatent.

### MARKET POTENTIAL /

Potential market for the devices – number of capillary blood collection stations. Total number of finger blood collection stations in Russia is ~ 45,000. The potential market for perforators (in producer prices) amounts to 2 billion RUB. Avg. lifetime is 5 years. Target market (10% of the potential market) is worth 40 million RUB per year. Consumables market (caps) is worth 20 - 30 million RUB per year. Total target market is worth 60 - 70 million RUB per year.



### TEAM/

EKATERINA V. SAVCHUK, CEO;  
VALERY G. POLUSHKIN,  
Technical Director.

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## MOBILE SYSTEMS ELOC FOR MULTI-PARAMETER INDIVIDUAL EXPRESS IMMUNODIAGNOSTICS

### COMPETITIVE ADVANTAGES /

Multiparameter diagnostics (250 tests).  
Small sample volume required  
(a drop of blood).  
Low cost (less than 16 rubles).  
Speed of measurement.  
«Pocket» format. Easy to use.  
Scalable technology platform.

### ESSENCE OF INNOVATION /

The development of immunodiagnostic biosensors for an individual to analyze multiple health factors, based on the «Electronic Lab on a Chip (eLOC)» technology platform.

### RESULTS ACHIEVED/

The technology has already been tested and prototypes of its components have been created: an electronic biochip (a 256-cell matrix) and mobile measurement devices and software.

### MARKET POTENTIAL /

Projected market growth for biosensors (data from Bio-Insite):  
in 2015 - \$12.0 billion;  
2018 - \$16.2billion..

### ECONOMIC EFFECT/

The results of the MULTI-analysis made using one drop of blood will be ready in 5-10 minutes.



### TEAM/

LARISA VASILETS,  
Doctor of Biological Sciences R&D  
Director (CSO);  
ANNA STRIZHKINA -  
General Director (CEO).  
SVETLANA PARADIS -  
Managing Director (CMO).  
YEVGENY SURKOV - engineer.

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## INTEKRIN, CJSC

# NEW, SAFE INSULIN SENSITIZER FOR TREATING TYPE 2 DIABETES

### COMPETITIVE ADVANTAGES /

Injectable immunomodulators (interferon-beta, glatiramer acetate) slow the progression of pathology, but require continuous administration. An effective drug for treating MS in tablet form will expand possibilities for specialists.

### MAIN POINTS OF INNOVATION /

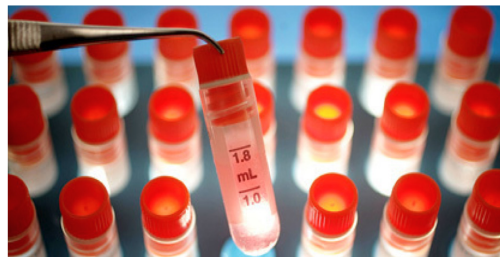
INT-131 is a selective PPAR modulator that significantly expands the therapeutic window within which the drug is safe. INT-131 has a different chemical structure from TZD class drugs.

### ACHIEVED RESULTS /

INT-131 has gone through preclinical studies that demonstrated the substance's potential for treating type 2 diabetes and multiple sclerosis (autoimmune encephalomyelitis model). The drug has been studied in healthy volunteers; its efficacy has been researched.

### MARKET POTENTIAL /

In contrast with TZD class drugs, INT-131 has demonstrated significantly lower toxicity in multiple preclinical and clinical trials. It is the only insulin sensitizer in development that is both effective and safe.



### THE TEAM /

DENNIS LANFEAR, CEO;  
DAVID WEINSTEIN,  
Chief Scientific Officer;  
KATHLEEN LEE,  
Vice President, Pharmaceuticals;  
MICHAEL NAZAK, CFO;  
VARVARA MELIKHOVA,  
Development Director (Russia).

### CONTACTS /

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## AUTOFARM, LLC

# THE PRODUCTION TECHNOLOGY OF A MEDICAL PRODUCT BASED ON THE IMMUNOGLOBULIN COMPLEX PREPARATION AND A TROPHOBLASTIC $\beta$ -1-GLYCOPROTEIN FOR THE TREATMENT OF AUTOIMMUNE DISEASES AND THE ORGANIZATION OF ITS SERIAL PRODUCTION

### COMPETITIVE ADVANTAGES /

Betaglobulin based on TBG and immunoglobulin complex preparation (ICP) has no toxicity and can be administered to people many times. TBG suppresses exacerbation of autoimmune diseases. TBG stops an exacerbation of autoimmune diseases and at cost 10 times lower than foreign analog.

### ESSENCE OF INNOVATION /

The aim of the project is development of industrial technology manufacture the remedy for treatment of autoimmune diseases based on the immunoglobulin complex preparation and TBG from donor and retroplacental plasma .

### RESULTS ACHIEVED/

As a result of the done works the immunoglobulin complex preparation (IgG+IgA+IgM) in the form of lyophilisate which Betaglobulin is the first component of a preparation was received. (No. No. 2261112 patent). The patent for the second component was taken out 20.01.2014 No. 25004401.

### MARKET POTENTIAL /

In Russia in 2010, according to Pharmexpert, for drug procurement under the program «7 nosologies» the government spent 45 billion rubles. Common market can be estimated only on the program «7 nosologies», at about 10 billion rubles.



### TEAM/

BYLOV K.V. Director General of LLC «Autofirma»;  
ANTONYAN R.K. Deputy Director on science and production company «ZIP», scientific supervisor of the project, the citizenship of the Republic of Armenia, doctor of biological Sciences, academician of the Russian Academy of medico-technical Sciences;  
LOKTEV D.A. Deputy General Director of OOO «Autofirma», Deputy project Manager;  
MARTYNOVA Y.V. engineer of ZAO «ZIP», post-graduate, immunologist, will ensure the process of preclinical and clinical trials;  
VLADIMIR RUSAKOV chief engineer.

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