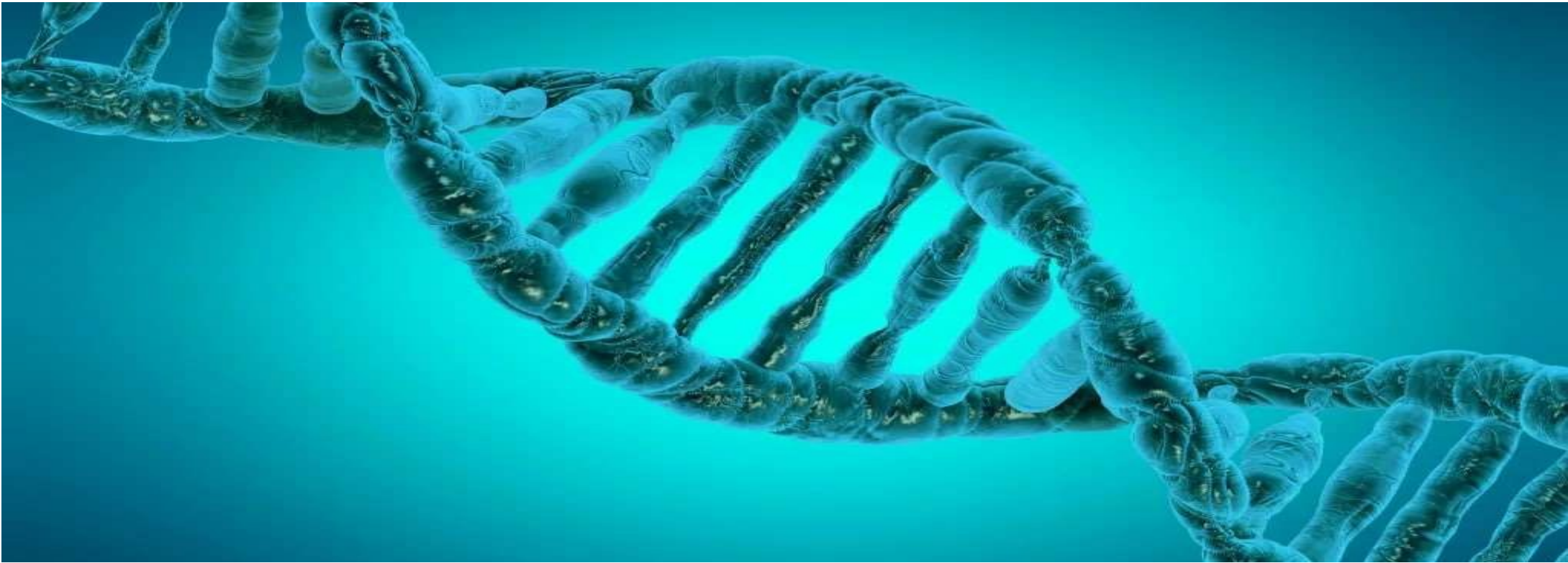
"DIRECT CELLULAR RE-PROGRAMMING FOR LONGEVITY, ANTI-AGING AND REGENERATION."

Innovative Technologies **GraftBio** **LLC**



GraftBio

The essence of the technology

Innovative cellular GraftBio technologies

GraftBio LLC's technology offers a unique approach to treating age-related diseases.
Provides safe and effective
transformation of somatic cells into embryonic stem cells directly "in vivo", bypassing the pluripotency stage.
This approach opens up new opportunities for tissue regeneration, life extension, and disease therapy.

GraftBio

Problem and solution

01

Risks of traditional methods

The use of pluripotent stem cells is associated with a high risk of oncogenesis, jeopardizing patient safety.

02

Toxicity of synthetic molecules

The use of synthetic molecules significantly increase toxicity and may lead to adverse health effects in patients.

03

High treatment costs

Direct cell reprogramming using nanoemulsions offers safety, efficacy and affordability, opening new horizons in regenerative medicine.

GraftBio's innovative delivery platforms

Нано-капсула

Наночастицы PCL, созданные методом испарения растворителя и эмульсионной технологии W/O. Идеальны для точечной доставки активных веществ

Дендримеры

Сверхразветвленные полимеры, обеспечивающие точечную доставку лекарств и улучшенное распределение в тканях организма

Нано-мицеллярная

Обеспечивает эффективную доставку различных активных компонентов (API) с высокой биодоступностью

Био-гель

Биоматериал нового поколения для замены и восстановления тканей человека, подходит для медицинских и косметических применений

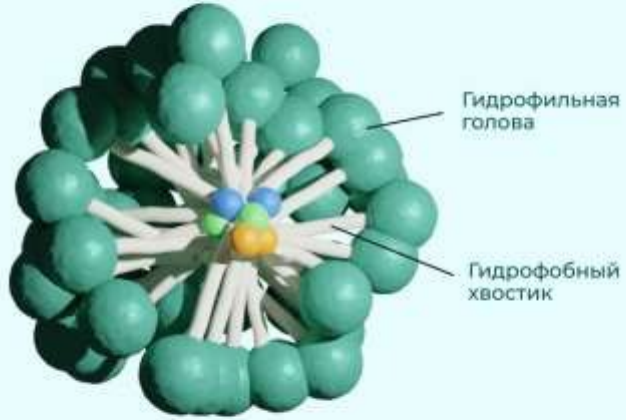
Пористый нано-резервуар

Синтетический биоразлагаемый резервуар — прочный и стабильный, подходит для длительного высвобождения лекарств. Натуральный органический резервуар — экологичный и биоразлагаемый, создан для естественной совместимости с организмом

Мицелла

Самоэмульгирующаяся нано-эмульсионная система последнего поколения (IV) — наночастицы ниже 50 нм

Безмасляные нано-мицеллы SNEDDS IV типа



Новая и запатентованная технология от GraftBio это высокобиодоступная водорастворимая сверхнасыщаемая безмасляная самонаноэмульгирующаяся система доставки лекарственного средства (SNEDDS) для фармацевтических композиций гидрофобных составов природных активных фармацевтических ингредиентов (API), системы эмульгаторов/сорастворителей/наполнителей и стабилизированной водной фазы.

GraftBio

How does it work?

Nanoemulsions and their advantages

Nanoemulsions of **50-100 nm** in size provide efficient penetration through cell membranes.
This allows the active ingredients to interact with cells at a deep level.

Molecular mechanisms of exposure

GraftBio re-programming complexes, including activation of youth genes and suppression of senescent cells, are aimed at improving cellular functions and slowing down the aging process.

Safety and efficiency of the technology

Utilization of **bioactive substances and plant extracts** minimize the risks associated with traditional methods, providing a safe and targeted effect on cells.

GraftBio

Competitive advantages

Natural ingredients

- Natural BAS and biodegradable micelles from plant sources are used
- Rejection of synthetic/viral vectors

(as opposed to methods with CRISPR or retroviruses).

Safety and absence of oncogenesis

- No integration into the genome (micelles deliver active molecules without genetic modifications).
- Toxic solvents and immunogenic reactions have been excluded.

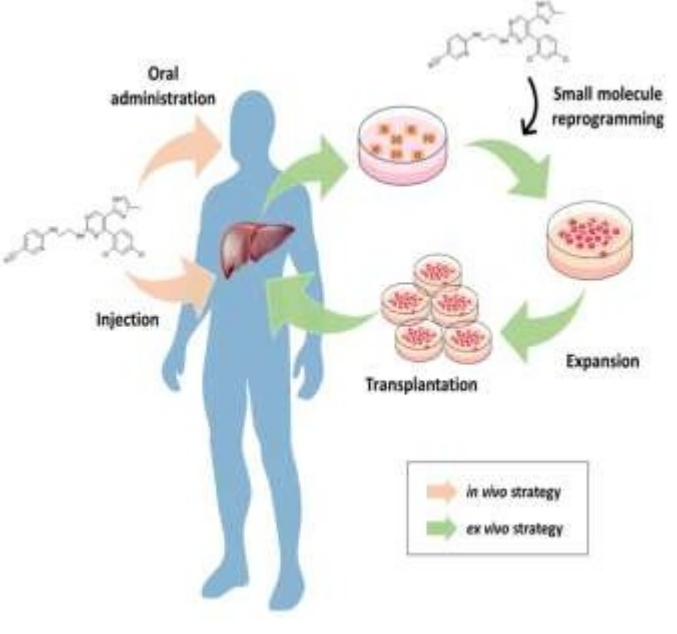
Maximum bioavailability (~95-100%)

- Self-emulsifying particles **<100 nm** penetrate the oral/GI mucosa, bypassing degradation in the liver.
- Direct reprogramming often requires invasive techniques (injections) and has a bioavailability of **<30%**.

Criterion	GraftBio (micelles)	Traditional methods
Safety	There's no genetic variation	Mutation risk (viruses, small molecules, CRISP)
Delivery	Oral/Mucosa	Injections/ Surgery
Components	Natural/ Non-toxic	Synthetic/ Viral vectors
Implementation time	Minutes	Weeks (cell culture)
Bioavailability	~95-100%	<30% (system delivery)

GraftBio

Complexes *re-programmingGraftBio*



GraftBio

Market opportunities

The rise of regenerative medicine

The regenerative medicine market is expected to grow to **30 billion** dollars.

This opens up new opportunities for GraftBio in the field of cell therapy.

Anti-aging cosmetics

The anti-aging cosmetics market is set to reach $85 **billion,**

Giving GraftBio the chance to incorporate its technology into cosmetic products.

Nutraceuticals and wellness

The nutraceuticals segment is in excess of $400 **billion**, which allows for GraftBio to offer innovative solutions for healthy living and preventive medicine.

GraftBio

Business Model

- **Diversification of income**

The model includes sales, licensing and partnerships for sustainable financial growth.

- **Monetization flexibility**

Subscription services and premium prices are customized to to the needs of the market and customers.

- **Investments in R&D**

Continuous development of technology provides competitive advantages and new product solutions.

GraftBio

Project team

Viktor Bolduev (CEO/CTO)

Founder of **GraftBio** group, over 25 years in business.
15 Patents in the field of Polymer Modification and Bio/Pharma Technologies.
Dozens of developed and commercialized products.

Svetlana Gelperina (Scientific counselor)

Ph.D. in chemistry, Professor of the HTBMP Department of RCTU, Head of Nano Drug Delivery Laboratory

Tatiana Kovshova (Scientific counselor)

Candidate of Pharmaceutical Sciences, Head of the Laboratory of Nano-pharmaceutics, RCTU

Olga Melkumova (Marketing Director)

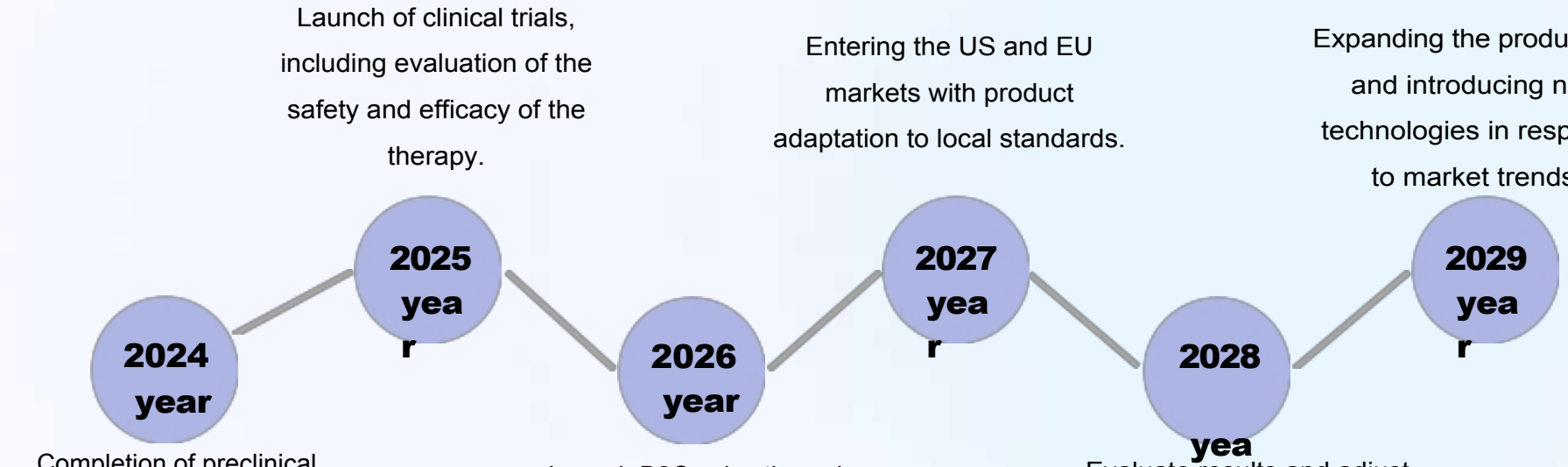
Over 20 years in business. Retail specialist, Founded her own chain of stores. Expert merchandiser and experienced entrepreneur. Extensive experience in managing jewelry and wellness salons.

Sergey Mashukov (Business Development)

Over 20 years in the industrial business Founder of **Siberian Bushing**, (polyurethanes), Specialist in metal processing technology, author-innovator of a number of commercialized business projects

GraftBio

Roadmap



GraftBio

Finance and inquiry

Confirmed achievements

The $2 million raised has already been invested in intellectual ownership and preclinical studies into the ***GraftBio Slovenia*** project, confirming the safety and efficacy of the technology, preparing the company for the next phase.

Intended use of funds

The requested **$10 million** will be spent on clinical trials, manufacturing scale-up and marketing, which will will ensure the successful introduction of the technology into the market.

Projected yield

GraftBio is expected to reach profitability by 2026, with a company valuation of **$150 million** by 2028, making the investment attractive.

GraftBio

Investing in the future of medicine

Invest in **GraftBio** and be part of a breakthrough in cell therapy,
supporting innovations that will change the way age-related diseases are treated and improve the quality of life for millions of people.

GraftBio

Contact information

Victor Bolduev |CEO English / Russian
Tel: +386 64 291192
Tel: +7 (985)-386-9595
vicbol5762@gmail.com
www.graftbio.ru