

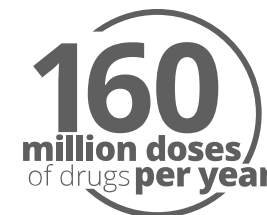


full-cycle  
biotechnological  
company

# Petrovax is a full-cycle Russian biotechnological company with 25 years of successful experience

- Product portfolio includes its own original pharmaceutical products, generics and food supplements
- Own R&D center, international patents for molecules and technologies
- Biotechnological manufacturing in accordance with the EAEU and EU GMP standards
- Largest exporter of influenza vaccines and original pharmaceutical products
- Partner of international Big Pharma companies

The company's investment strategy is aimed at the investigation, development of production and import substitution of medicines and vaccines used in treatment of socially significant diseases, such as oncological, autoimmune, infectious and orphan diseases.



# HISTORY OF DEVELOPMENT

1996 -  
2004

- **Company foundation**
- Registration of **Polyoxidonium®** medicine and **Grippol®** vaccine.
- Opening of the production facilities for manufacture of APIs, finished dosage forms.
- Establishing partnership with **Solvay Pharma** (currently, **Abbott**)

2014 -  
2016

- Joining the **Interros Group**
- Pneumococcal vaccine supplies **Prevenar® 13** for Russian National Immunization Schedule.
- Market launch of **Imoferaza®** cosmetic cream
- Establishing cooperation with **Boehringer Ingelheim** on localization of innovative thrombolytics **Metalyse®** and **Actilyse®**

2005 -  
2009

- Market launch of **Longidaza®** drug product
- Opening of a modern **manufacturing complex** in Moscow Region. Its capacity is more than 160 million doses of immunobiologicals per year. The first syringe line for the vaccine production in Russia.
- Market launch of the first Russian influenza vaccine **Grippol® Plus** in pre-filled syringes.
- Development and manufacture of vaccines against pandemic strain of influenza: **> 15 million doses**

2017 -  
2019

- Market launch of **Grippol® Quadrivalent**, Russian first quadrivalent inactivated subunit adjuvanted influenza vaccine.
- Expanding the portfolio with a new product — **Velson®** (INN: Melatonin).
- Registration of a new dosage form — **Polyoxidonium® solution**
- **Commissioning of the 2nd manufacturing building** for the APIs and finished dosage forms.
- Successful completion of the post-authorization safety study (PASS) of Polyoxidonium® **in the EU**

2010 -  
2013

- **Opening of the 2nd line** for manufacturing vials and ampoules
- Start of a localization project of the **13-valent conjugate pneumococcal vaccine** manufacturing (in cooperation with **Pfizer**).
- Obtaining **EU GMP** certificates, start of **Polyoxidonium export** to the EU
- Start of export supplies of **Grippol® Plus** vaccine

2020 -  
2022

- Large-scale **clinical trials program** of Polyoxidonium® and Longidaza® in the prevention and treatment of COVID-19
- Project for the development and manufacture of the **vaccine** against COVID-19 — **Convidecia** — in cooperation with **CanSino Biologics Inc.**
- Market launch of new products: **Uronext®, VitaFerr®, Gialera®, ARTNEO®**
- Obtaining European, American and Indian patents for **Longidaza®**
- **Launch of the 4th manufacturing line** for injectable forms
- The beginning of cooperation with ISU ABXIS (South Korea) to **localize production** of medicine for orphan therapy — **Fabry disease**

# DIFFERENTIATED PRODUCT PORTFOLIO

- Original pharmaceutical products and vaccines  
Polyoxidonium<sup>®</sup>, Longidaza<sup>®</sup>,  
Grippol<sup>®</sup> Plus, Grippol<sup>®</sup> Quadrivalent
- Localized medicines and vaccines  
Metalyse<sup>®</sup>, Actilyse<sup>®</sup>, Prevenar<sup>®</sup> 13
- Generics  
Velson<sup>®</sup>
- Food supplements  
ARTNEO<sup>®</sup>, VitaFerr<sup>®</sup>, Uronext<sup>®</sup>, Gialera<sup>®</sup>
- Cosmetic cream  
Imoferaza<sup>®</sup>



## VACCINES

### GRIPPOL® PLUS

Influenza vaccine [inactivated] + azoximer bromide

Russian influenza trivalent inactivated subunit preservative-free vaccine for the prevention of influenza in adults and children from 6 months.



### GRIPPOL® QUADRIVALENT

Influenza vaccine [inactivated]+ azoximer bromide

The first Russian influenza quadrivalent inactivated subunit adjuvanted preservative-free vaccine to protect against 4 influenza virus strains.



## COSMETIC CREAM

### IMOFEZA®

Cosmetic cream for specialized care of scars, adhesions, which includes immobilized hyaluronidase.



## DRUG PRODUCTS

### POLYOXIDONIUM®

azoximer bromide

Original product with complex effect: immunomodulator, detoxifier, antioxidant, for treatment and prevention of infectious diseases.



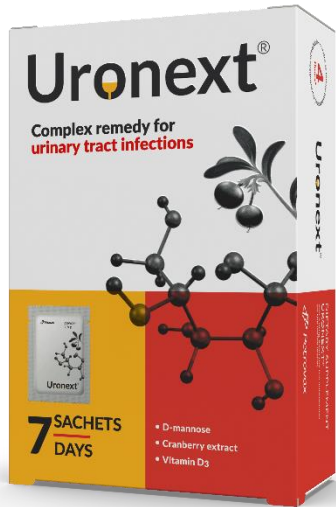
### LONGIDAZA®

bovhyaluronidase azoximer

Original enzyme medicine for combined therapy of connective tissue hyperplasia diseases.



## OTC MEDICATIONS & FOOD SUPPLEMENTS



### URONEXT®

Complex remedy for urinary tract infections.

Active ingredients: D-mannose, Cran-Max (patented cranberry fruit concentrate), vitamin D3.



### ARTNEO®

A unique five-component complex to maintain healthy joints.

Active ingredients: native (undenatured) type II collagen, boswellic acids, MSM, vitamin C and vitamin D3.



### GIALERA®

A unique combination of sodium alginate and hyaluronic acid, providing a comprehensive approach to manage heartburn.

### VELSON®

Melatonin

A medicinal product for sleep normalization and improving human biorhythms. Velson® regulates sleep-wake cycles, adaptation to jet lag and to weather changes conditions.



### VITAFERR®

Complex product for prevention of iron deficiency in women.

Active ingredients: iron bisglycinate, vitamin C; Vitamin B6; Vitamin B12; calcium L-methylfolate.



## LOCALIZED DRUGS (CMO)

### PREVENAR® 13

Pneumococcal polysaccharide conjugate adsorbed vaccine, thirteen valent

Vaccine for the prevention of pneumococcal infections caused by the bacterium *Streptococcus pneumoniae*, serotypes 1, 3, 4, 5, 6A, 6B, 7F, 9V, 14, 18C, 19A, 19F, 23F, such as sepsis, bacteremia, meningitis, pneumonia and acute otitis media.

Recommended for all ages over 2 months.

Manufactured by Petrovax as a full-cycle manufacturing of the finished dosage form in cooperation with Pfizer.



### AKTILYSE®

alteplase

A biopharmaceutical thrombolytic that is used for myocardial infarction and ischemic stroke. It is the only thrombolytic indicated for the treatment of patients with ischemic stroke within 4.5 hours after the onset of symptoms.

Produced by Petrovax Pharm in cooperation with Boehringer Ingelheim.



### METALYSE®

tenecteplase

Innovative thrombolytic for the treatment of myocardial infarction. This is the only thrombolytic recommended for use worldwide with a single bolus injection (in 5-10 seconds), which allows immediate medical care to be provided to patients with acute myocardial infarction at the earliest possible time as part of emergency medical care. Currently, tenecteplase is one of the most extensively studied thrombolytic medicines.

Produced by Petrovax Pharm in cooperation with Boehringer Ingelheim.

Petrovax is the holder of international patents for molecules and pharmaceutical manufacturing technologies. The company's investment program provides for the financing of advanced R&D projects.

R&D center and vivarium for preclinical studies allow to carry out a full cycle of development and implementation of medicinal products.

- Search for innovative molecules and conducting preclinical studies
- Study of the mechanisms of action of developments in the pathogenesis of the disease
- Proof of the safety and efficacy of drugs in preclinical studies
- Development of quality control methods and manufacturing technology
- Conducting clinical studies in accordance to GCP standards
- Introduction of innovative technologies, modernization and optimization of manufacturing processes

## International clinical studies

2020

International Multicenter Clinical Study of the efficacy and safety of the Convidencia COVID-19 vaccine in cooperation with CanSino Biologics with participation of 40,000 volunteers

2020

International Multicenter Phase 3 Clinical Study of efficacy and safety of the Polioxidonium® in Complex Therapy in Patients with COVID-19



R&D center



Petrovax is a full-cycle biotechnological company

The manufacturing processes include the synthesis of APIs, the production of sterile and non-sterile medicines, including immunological and biopharmaceutical drugs in various dosage forms. The production operates in accordance with the EAEU and EU GMP standards.

## MANUFACTURING



Line 1 — manufacturing medicines in pre-filled syringes

Line 2 — manufacturing medicines for injection, including lyophilizates

Line 3 — synthesis of APIs, manufacturing of soft and solid dosage forms

Line 4 — manufacturing of injectable dosage form

**160**  
million doses  
of drugs per year

# QUALITY

The company has implemented and effectively operates a pharmaceutical quality system (PQS), confirmed by GMP certificates and audits of international partners.

Petrovax was the first Russia manufacturer of immunobiological products to receive international GMP certificates from the EU (Slovakia) and Iran state regulatory authorities.

- The Company cooperates only with approved raw and other material suppliers
- Quality control of manufactured pharmaceutical products and vaccines is guaranteed at all stages of production, from the sampling of raw materials to the control of finished products. More than a hundred people work in the quality service.
- The pharmacovigilance system functions in accordance with international standards and Russian regulatory requirements to ensure medicine product safety surveillance.



# INTERNATIONAL PARTNERSHIP / CMO

Petrovax cooperates with leading international pharmaceutical companies on the transfer of innovative technologies for the production of medicines

## Abbott

2008

A unique biopharmaceutical project in the scientific and industrial spheres

In cooperation with Abbott, a biopharmaceutical project to build a modern pharmaceutical complex for the development and production of immunobiological drugs in the Moscow region has been successfully implemented. In 2008, for the first time in Russia, the release of influenza vaccine Grippol® plus in disposable syringes without the preservative thiomersal was launched.

## Pfizer

2014

The first implemented project on import substitution of high-tech vaccines in Russia

In partnership with Pfizer, a project was implemented for the first time to introduce the technology for the full cycle of production of finished dosage forms, control and quality assurance of the 13-valent pneumococcal conjugate vaccine Prevenar® 13 in Russia. Since 2014, more than 35 million doses of the vaccine have been delivered to the Russian market, significant results have been achieved in reducing mortality from pneumonia among children in the first year of life — by 56%\*.

## Boehringer Ingelheim

2017

Localization of biopharmaceutical drugs for the treatment of cardiovascular diseases

Throughout cooperation with the international company Boehringer Ingelheim, the local production of Actilyse® and Metalyse® drugs for the treatment of cardiovascular diseases recommended for use in the acute phase of heart attacks and ischemic strokes has been organized. Petrovax is the second site in the world to produce innovative Boehringer Ingelheim thrombolytics.

# Project on orphan diseases



## The first agalsidase beta biosimilars in Russia for the treatment of **Fabry disease**

Approved and used in the Korean market since 2014

### Project parameters



*Agalsidase beta*

Investments – 2 billion rubles

The strategic goal of Petrovax is to **provide 100% of patients** with Fabry disease with a Russian-made enzyme replacement drug.



**12**  
countries  
of export

Petrovax has been successfully operating in foreign pharmaceutical markets for more than 20 years:

- the largest Russian exporter of influenza vaccines and original pharmaceutical products
- the products are presented in 12 countries, including the EU
- GMP EU since 2012
- export in 2021 > 2 billion rub; export increased by 100% for the period 2017-2021

## EXPORT POTENTIAL

Petrovax has significant competitive advantages:

- original portfolio of innovative products
- high-tech manufacturing according to international GMP standards
- investment program for the R&D direction and experience in implementing international projects in the production and R&D

Increasing the export potential and expanding the sales geography are the strategic goals of Petrovax.

Petrovax is the winner in the categories "Exporter of the Year" and "Partnership of the Year" of the Russian Pharma Inspiration Awards-2021.

mission

Innovative products for health and better quality of life



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Corporate values

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