



full-cycle  
biotechnological  
company

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



- Product portfolio includes original pharmaceutical products, contract medicines and food supplements.
- R&D center, patents for molecules and technologies in Russia and abroad.
- Biotechnological manufacturing in accordance with the EAEU and EU GMP standards.
- One of the largest exporters of influenza vaccines and original pharmaceutical products.
- Partner of international Big Pharma companies.



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

corporate values



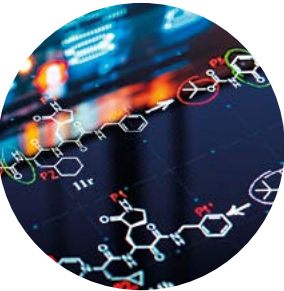
mission

Innovative products for health and better quality of life

Research center and vivarium for preclinical studies allow to carry out a full cycle of development and implementation of medicinal products

Petrovax is the holder of patents for new molecules and pharmaceutical manufacturing technologies in Russia and abroad. The company's investment program ensures financing of advanced R&D projects.

- Search for innovative molecules and conducting preclinical studies.
- In-depth study of the mechanism of action in terms of the pathogenesis of a corresponding disease.
- Proof of the safety and efficacy of drugs in preclinical studies.
- Development of quality control methods and manufacturing technologies.
- Conducting of clinical studies in accordance with GCP standards.
- Introduction of innovative technologies, development and optimization of manufacturing processes.



International clinical trials (CTI)

- International multicenter clinical study of the efficacy and safety of the Convidecia 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 Polyoxidonium® in Complex Therapy of Patients with COVID-19 (2020).

research & development







advanced  
manufacturing  
facilities



The biotechnological production operates in accordance with the EAEU and EU GMP standards

The manufacturing processes include the synthesis of APIs, the production of sterile and non-sterile medicines, such as immunological and biopharmaceutical medicines in various dosage forms.

**160**  
million doses  
of drugs per year



- Line 1 — manufacturing of medicines in pre-filled syringes
- Line 2 — manufacturing of medicines for injection, including lyophilizates
- Line 3 — synthesis of APIs, manufacturing of soft and solid dosage forms
- Line 4 — manufacturing of injectable dosage form

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



- The company cooperates only with approved suppliers of raw and other materials.
- 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 operates in accordance with the international standards and Russian regulatory requirements to ensure medicine product safety surveillance.



# international partnership

Abbott

2008

## **A unique biopharmaceutical project in the scientific and industrial spheres**

In cooperation with Abbott (previously, Solvay Pharma), 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. It is one of the most exported influenza vaccines in Russia<sup>1</sup> and is part of the state immunization programs of several countries.

Pfizer

2014

## **The first 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 in reducing mortality caused by pneumonia among children of the first year of life have been achieved — 56% reduction noted<sup>2</sup>.

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 were introduced to the acute phase of heart attacks and ischemic strokes treatment. The use of these drugs today is the "gold standard"<sup>3</sup> of thrombolytic therapy. Petrovax is the second site in the world to produce innovative Boehringer Ingelheim thrombolytics.

ISU ABXIS

2022

## **Technology transfer of the full cycle production of the drugs for the treatment of orphant disease, including substance synthesis**

In cooperation with the South Korean company ISU Abxis, a project on localization of full-cycle production of agalsidase beta (Fabagal medicine) for the Fabry disease treatment is being implemented. Fabry is an orphan disease, which belongs to the group of lysosomal storage diseases and in the absence of timely diagnosis and therapy it leads to early disability and premature death of patients. As a result of the project, Petrovax will synthesize the substance and produce the finished dosage form.

<sup>1</sup> RNC Pharma, Pharmvestnik, <https://pharmvestnik.ru/articles/Strana-nepriznannyh-vakcin.htm>

<sup>2</sup> <https://rosstat.gov.ru/compendium/document/13269>

<sup>3</sup> <https://pubmed.ncbi.nlm.nih.gov/29367334/>

# export

**10** countries  
of export

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

- one of the largest Russian exporter of influenza vaccines and original pharmaceutical products<sup>1</sup>;
- the products are presented in 10 countries, including the EU;
- EU GMP since 2012.

## **Petrovax has significant competitive advantages:**

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

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

<sup>1</sup> RNC Pharma, Pharmvestnik, August 25, 2020

 Petrovax



# product portfolio

## Polyoxidonium® / Полиоксидоний®

INN: Azoximer bromide

## Rx & OTC

**Original product with complex effect for treatment and prevention of infectious diseases**

In 2008 the World Health Organization (WHO) assigned the international non-proprietary name (INN) to the Russian medicine Polyoxidonium®<sup>1</sup>.

immunocorrective  
detoxifying  
anti-inflammatory

complex  
effect



for adults and children over 3 years of age



for adults and children over 1 year of age



for adults and children over 1 year of age



for adults and children over 6 months of age

**4 SKU**

with Rx & OTC status

**>2.8 million packs**  
are sold annually

**>150 clinical trials  
and scientific researches**  
involving over 14,700 patients  
aged from 6 months to 90 years

**25  
years**  
of clinical  
experience

in 10 countries,  
including Europe

### Indications for use

Polyoxidonium® is used in adults and children for the treatment and prevention of infectious and inflammatory diseases (viral, bacterial and fungal etiology) at any stage.

### Therapeutic applications:

- immunology
- infectious diseases
- phthiology
- oncology
- rheumatology
- surgery
- gynecology
- urology
- allergic diseases



<https://polyoxidonium.com>



<https://fdasis.nlm.nih.gov/srs/unii/90g53638zd>

<sup>1</sup> WHO Drug Information, Volume 22, N° 1, 2008

## Longidaza®

Лонгидаза®

INN: bovyaluronidase azoximer

**The original enzyme medicine for complex treatment of diseases accompanied by connective tissue hyperplasia**

In 2015, the World Health Organization (WHO) assigned the international non-proprietary name (INN) to the Russian drug Longidaza®<sup>1</sup>.



**hyaluronidase (enzyme),**  
directly affecting fibrosis through the breakdown of pathological connective tissue glycosaminoglycans

+

**high-molecular weight agent**  
with anti-inflammatory effect, prolonging the action of the enzyme

Longidaza®

**18 years**  
of clinical experience

**Doctors' choice**  
for the treatment of adhesions and fibrosis<sup>2</sup>

**3 SKU**

with Rx & OTC status

**>1.5 million packs**  
are sold annually

### Therapeutic applications:

- gynecology
- urology
- pulmonology
- rheumatology
- surgery
- dermatology
- cosmetology
- phthisiology



<https://www.longidaza.ru>



In 2020-2021, the **DISSOLVE study** was conducted to assess the efficacy and safety of Longidaza® in patients who had COVID-19<sup>3</sup>.



<sup>1</sup> WHO Drug Information, Volume 29, N° 3, 2015

<sup>2</sup> PrIndex—Q4 2021

<sup>3</sup> Chucalin AG, Ann Clin Med Case Rep. 2022; V10(2): 1-9

## Grippol® plus

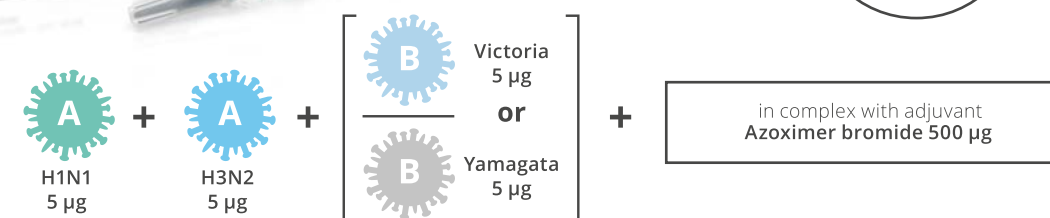
Гриппол® плюс

**TRIVALENT inactivated subunit adjuvanted influenza vaccine**



**>160 million doses**  
in Russia and other countries

**14 years**  
of clinical experience



**Indications:** for the prevention of influenza in children over 6 months of age, adolescents and adults without age restrictions, including pregnant women, the elderly, adults with chronic diseases of central nervous, cardiovascular, and bronchopulmonary diseases, autoimmune, allergic diseases, and immunodeficiency conditions

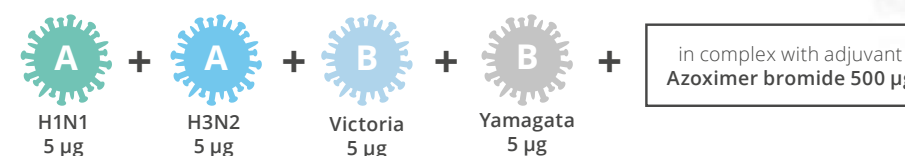
## Grippol® Quadrivalent

Гриппол® Квадριвалент

**QUADRIVALENT inactivated subunit adjuvanted influenza vaccine**



**Indications:** for prevention of influenza in children from 6 months and adults to 60 years of age. Protects against four influenza viruses: A/H1N1, A/H3N2 and two influenza B virus lines (Yamagata and Victoria).



### Grippol® vaccines benefits



<https://grippol.ru>

- **The composition of antigens is updated annually in accordance with WHO recommendations.**
- **The azoximer bromide adjuvant** in vaccines promotes a strong humoral and cellular immune response.<sup>1,2,3</sup>
- **Free from preservatives and antibiotics.**
- Available in individual pre-filled syringes with atraumatic needles.

<sup>1</sup> Low-dose influenza vaccine Grippol Quadrivalent with adjuvant Polyoxidonium induces a T helper-2 mediated humoral immune response and increases NK cell activity Vladimir Talayev et al., Vaccine Volume 38, Issue 42, 29 September 2020, Pages 6485-6486

<sup>2</sup> Front. Immunol., Cytokine Profile in Human Peripheral Blood Mononuclear Leukocytes Exposed to Immunoadjuvant and Adjuvant-Free Vaccines Against Influenza, M. Kostinov, 30 June 2020

<sup>3</sup> Komplier R, Neels P, Beyer W et al. Analysis of the safety and immunogenicity profile of an azoximer bromide polymer-adjuvanted subunit influenza vaccine. F1000Research 2022, 11:259



## Prevenar® 13 / Превенар® 13

### Pneumococcal polysaccharide conjugate adsorbed vaccine, thirteen valent vaccine

**Indications:** 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.



## Fabagal® / Фабагал®

INN: agalsidase beta

### A drug for therapy of the orphan Fabry disease

It is used for long-term enzyme replacement therapy of patients with confirmed diagnosis of Fabry disease (a rare genetically determined disease, causing kidney problems, neuropathic limb pain, congestive heart failure and stroke). The drug has been registered and used in Korea since 2014.

The localization of the medicinal product in partnership with the South Korean company ISU Abxis will ensure the availability of this vital drug for Russian patient



## Metalyse® / Метализе®

INN: Tenecteplase

### Innovative thrombolytic for the treatment of acute myocardial infarction

This thrombolytic is recommended for worldwide use 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.



## Actilyse® / Актилизе®

INN: Alteplase

### A biopharmaceutical thrombolytic

The thrombolytic is used for acute myocardial infarction, ischemic stroke and pulmonary embolism treatment.

Produced by Petrovax Pharm in cooperation with Boehringer Ingelheim.





# food supplements



## Omegika® / Омегика®

**A crystal clear concentrate of omega-3 acids derived from the wild fish species of the Pacific Ocean**

The highest quality omega-3 concentrate with a deep level of purification. The product contains optimal dosage of EPA + DHA recommended by the WHO and GOED. The complex is enhanced with vitamin K2, which supports the patency and elasticity of blood vessels. Omegika® is available in transparent capsules with a pleasant odor and lemon flavor

## Sundevit® / Сандевит®

**Specially selected dosage of vitamin D3 in combination with vitamin K2**

The optimal\* dosage of vitamin D (2000 IU) enhanced with vitamin K2 helps to strengthen the immune system, support muscles, bones and joints.

\*To maintain a normal level of 25(OH)D > 30 ng/ml in adults without obesity (BMI < 30 kg/m2) [Vitamin D deficiency Draft RAE Clinical Guidelines, 2022]



## Gialera® / Гиалера®

**Combination of sodium alginate and high molecular weight hyaluronic acid provides a comprehensive approach for heartburn**

The formula helps to reduce heartburn and other discomfort and supports esophageal mucosa, therefore allowing less occurrence and lower intensity of future episodes. Gialera has pleasant taste of a fresh pear.



<https://gialera.ru>



## ARTNEO® / АРТНЕО®

**New complex for joint and spine protection**

An innovative composition with special, native collagen with a radically new mechanism of action. Specially selected ingredients — undenatured collagen type II, MSM, boswellic acids, vitamins C and D3 have a complex effect, helping to reduce discomfort, swelling, painful feelings, stiffness, as well as restoring and maintaining functional status of joints and spine.



<https://artneo-collagen.ru>

## VitaFerr® / ВитаФерр®

**The latest generation of iron fortified with vitamins and folates for better absorption**

The optimal choice for replenishing iron levels. Contains iron in the form of bisglycinate, which ensures a high level of its bioavailability and minimizes the risk of side effects. The composition includes components for better absorption of iron and hematopoiesis: vitamins C, B6, B12 and L-methylfolate (a derivative of folic acid).



<https://vitaferr.ru>



## Uronext® / Уроне́кст®

**Complex remedy for urinary tract infections**

Contains an optimal combination of three active ingredients: D-mannose, D3 vitamin and Cran-Max (a patented North American cranberry extract with increased bioavailability) and D3 vitamin. A product of European quality with a favorable safety profile — can be used for diabetic patients, pregnant and breast-feeding women\*.



<https://uronext.ru>

\*On the recommendation and under the supervision of a doctor



food supplements

OTC



## Velson® / Велсон®

INN: melatonin

### A modern medicine for sleep and circadian rhythms' normalization

Helps you to fall asleep in just 20 minutes, sleep deeply during the night, and wake up easily in the morning. Positive effect on memory, brain function, performance, emotional-personal sphere, and reduction of stress reactions. Non-addictive (no delayed insomnia or withdrawal symptoms after 6 months of treatment).

### Bad dreams won't scare you anymore!



<https://velson24.ru>

## Demefecil / Демефецил

INN: dimetindene + phenylephrine

### Combination of antiallergic and vasoconstrictive agents

Nasal drops to facilitate nasal breathing and reduce swelling of the mucous membrane of the nasal cavity and paranasal sinuses in adults and children from 1 year old. It is used for the treatment of acute, vasomotor, chronic and allergic rhinitis, acute and chronic sinusitis, acute otitis media (as an auxiliary treatment method).



## Imoferaza® / Имофераза®

### Product for specialized care of scars and cicatrical tissue

Cosmetic cream based on immobilized hyaluronidase enzyme, specifically produced for the care of scar tissue of various origins. Smooths skin texture and tone after acne, burns, trauma, plastic surgery, cosmetic procedures, and tattoo removal.

Imoferaza® affects both primary and secondary scars.



<https://imoferaza.ru>



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