

GEROPHARM

GEROPHARM IS RAPIDLY GROWING BIOTECHNOLOGICAL COMPANY WITH STRONG EXPORT POTENTIAL.

Specializes on the products used for the diabetes treatment

- Biotechnology expert
- Wide expertise in full-cycle drug development, clinical research and production
- Own Research & Development Center and 2 Manufacturing Sites
- All insulin blockbusters in portfolio





--- ABOUT GEROPHARM



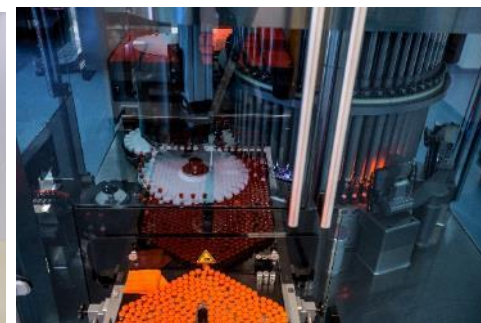
[Headquarter company]

- business development strategy
- 2 manufacturing sites in accordance with GMP standards



[Own R&D center]

- all aspects of drug and pharmaceutical development, it's industrial application and registration





GEROPHARM IN FIGURES

18 YEARS

on the pharmaceutical
market

4.9 BLN RUBLES

revenue in 2018

1.6 MLN

packs of insulin
supplied to market in
2018

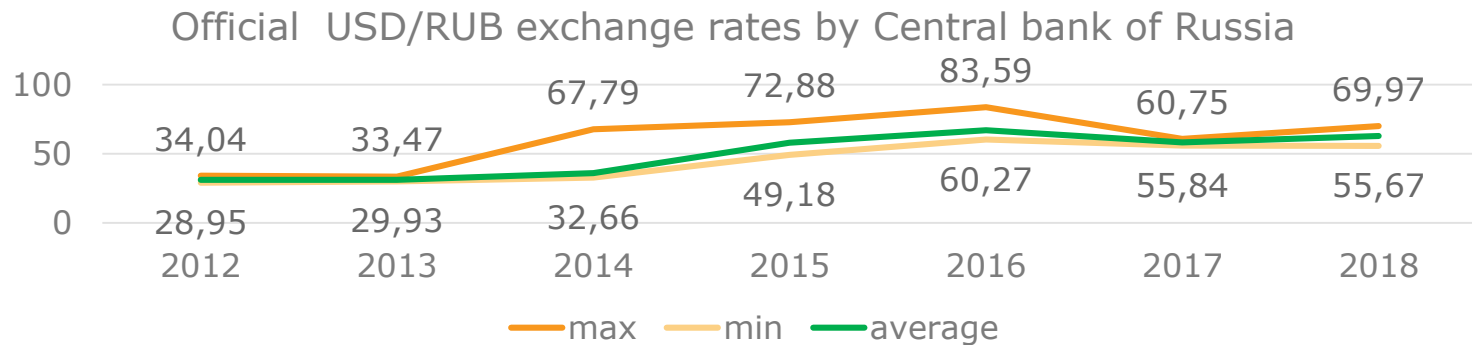
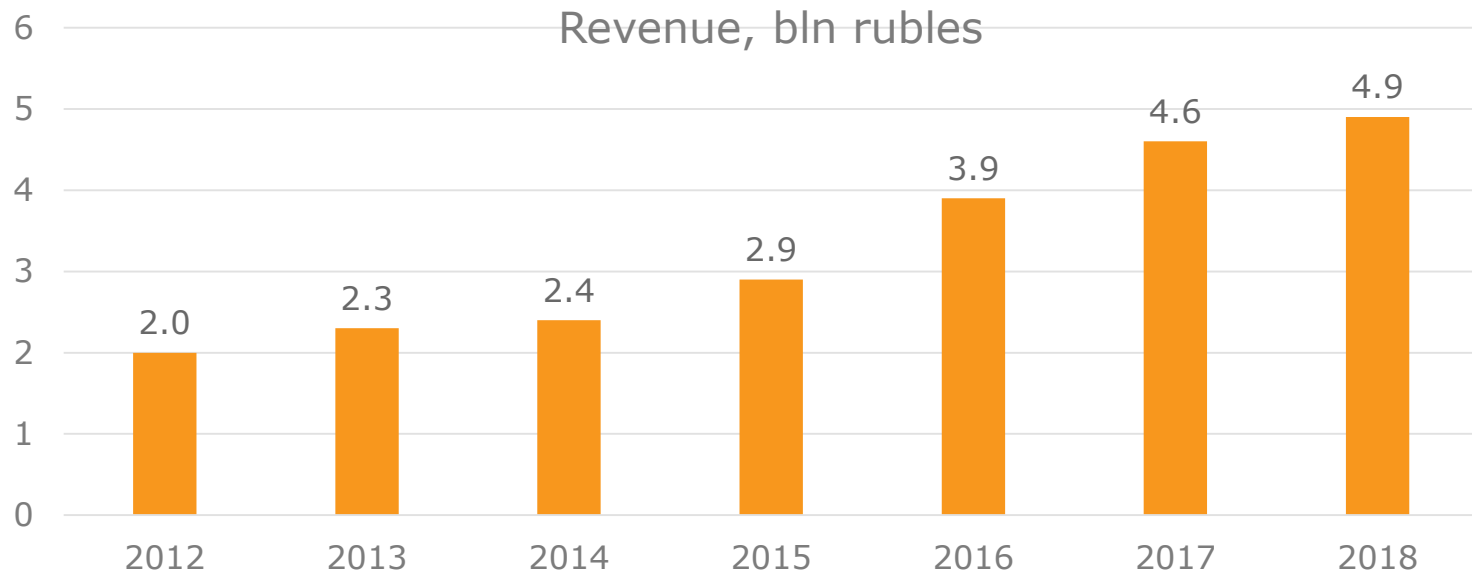
1st PLACE

among human insulin manufacturers since 3Q
2016

**The average USD/RUB exchange rates by Central Bank of Russia in 2013-2018 – 53,3*



GEROPHARM REVENUE IN 2012-2018





GEROPHARM IN FIGURES

>10 BLN RUBLES

rubles total investment in technological innovations and R&D since 2013

>10

drugs in company's portfolio

>15

projects in the pipeline

>950

highly qualified specialists

12 COUNTRIES

and all Russian regions of presence

18 YEARS OF SUCCESSFUL WORK ON THE PHARMACEUTICAL MARKET



2001

Launch of original drugs Cortexin® and Retinalamin®



2006

Development of technology for the insulin production is completed



2011

R&D centre is opened



2013

GEROPHARM opens its own GMP facility in Obolensk, Moscow Region

Launch of generic drugs: Levetinol®, Memantinal®



2016

GEROPHARM has supplied to the market more than 1,2 million packs of insulin. This is 82% higher than the indicator of 2015

Launch of Pineamin®, Recognan®



2015

Manufacturing site in Obolensk is ready to provide 30% of insulin demand of the Russian Federation



2014

New GMP facility was founded in St. Petersburg

New biotech laboratory unit is opened in the R&D center



2017

Launch of production line - pharmaceutical substances for original drugs



2018

Launch of production line - recombinant human insulin and biosimilar insulin analogues



2019 - 2021

Launch of insulin analogues portfolio to the Russian market



THE GEOGRAPHY OF PRESENCE

12

countries of export

210

representatives of sales force





PRODUCT PORTFOLIO

ENDOCRINOLOGY

[Rinsulin R® Rinsulin NPH®]

- full cycle basis: from drug substance to the finished dosage form
- import independence
- certified European laboratories recognize the substance meets the requirements of the British and American Pharmacopoeia

- Rinsulin substance outruns international standards on the purification from impurities
- Rinsulin took the 1st place on human recombinant insulins monomolecules market of in 2018, according to IMS Health data
- Dosage forms: vials, cartridges, insulin pens



ORIGINAL DRUGS. NEUROLOGY

[Kortexin®, Kortexin® for children]

Neuropeptide, which ensures that the nervous tissue is protected and restored in case of various nervous system diseases

Is used within the comprehensive treatment of:

- cerebral circulation disorder
- TBI and its consequences
- encephalopathies of various genesis
- cognitive disorders (dysfunction of memory and mentality)
- acute and chronic encephalitis and encephalomyelitis
- epilepsy
- asthenic conditions (suprasegmental autonomic disorders)
- reduction in learning capacity
- psychomotor and speech retardation in children
- various forms of infantile cerebral paralysis (ICP)



ORIGINAL DRUGS. OPHTHALMOLOGY

[Retinalamin®]

Drug product that stimulates retina regeneration

It is used in complex therapy with:

- compensated primary open-angle glaucoma
- diabetic retinopathy
- posttraumatic and postinflammatory, central dystrophy of retina
- central dystrophy of retina
- myopia (as a part of complex therapy);
- central and peripheral tapetoretina abiotrophy;
- rhegmatogenous and traumatic retinal detachment (rehabilitation postoperative period as a part of complex therapy)



ORIGINAL DRUGS. GYNECOLOGY

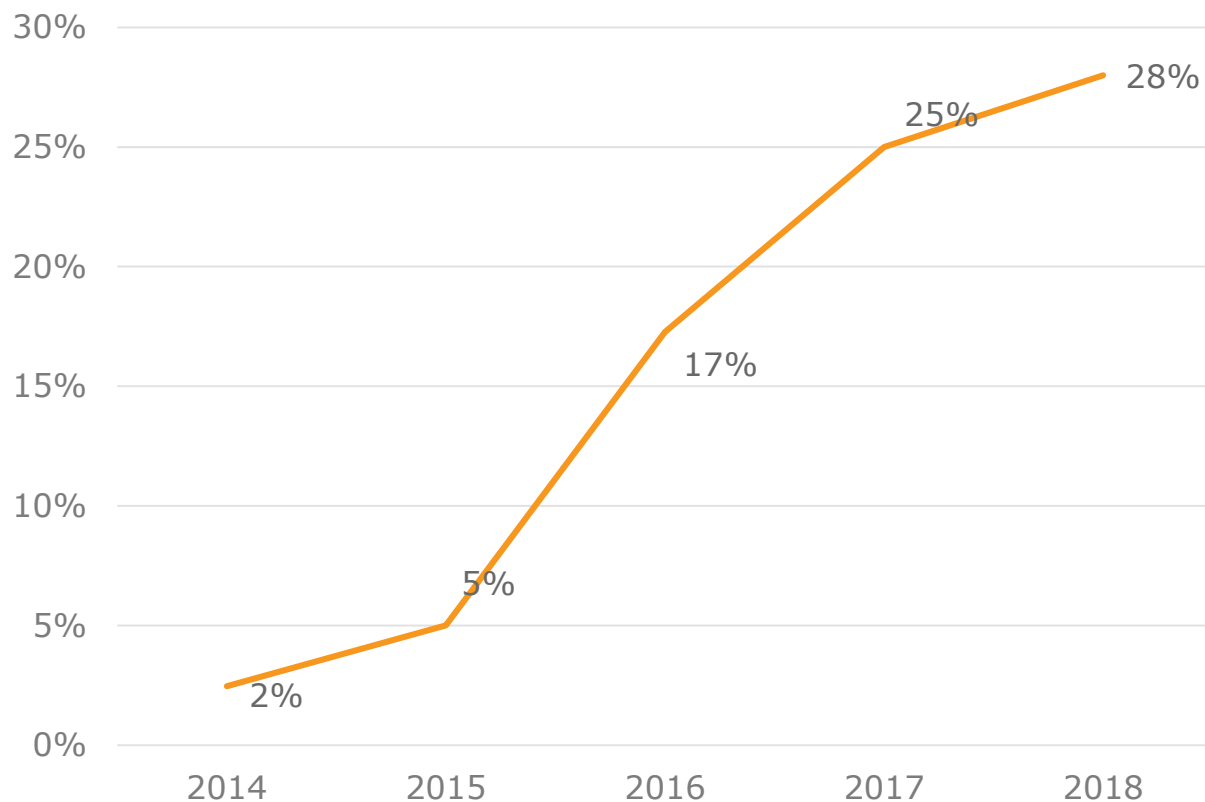
[Pineamin[®]]

The first exclusive injection product for the treatment of menopausal syndrome with innovative PPG class-effect and anti-age effect

- high therapeutic activity
- high degree of safety and tolerability
- long-term effect retention
- short injection course



MARKET SHARE INCREASE OF GEROPHARM'S RECOMBINANT HUMAN INSULIN IN 2014-2017 (Russia)



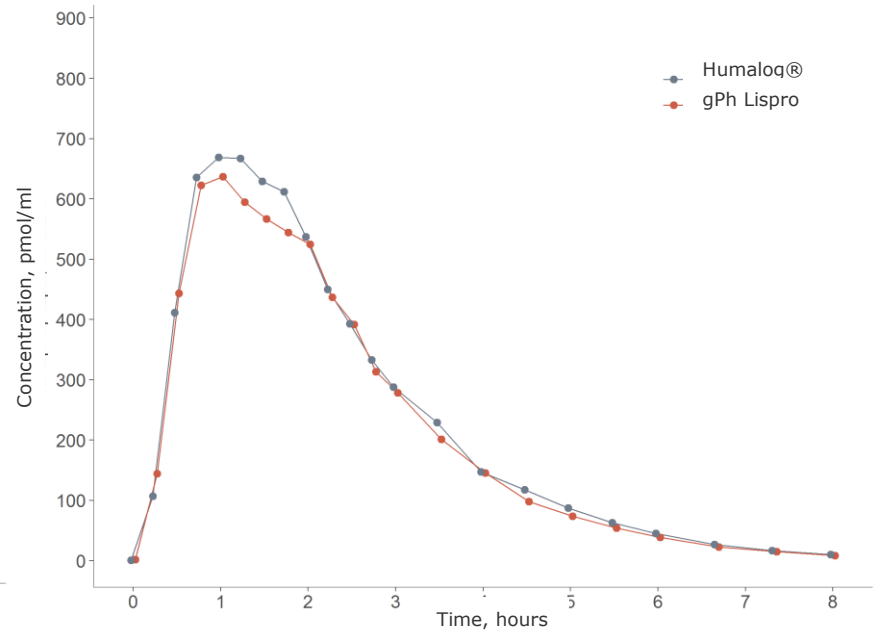
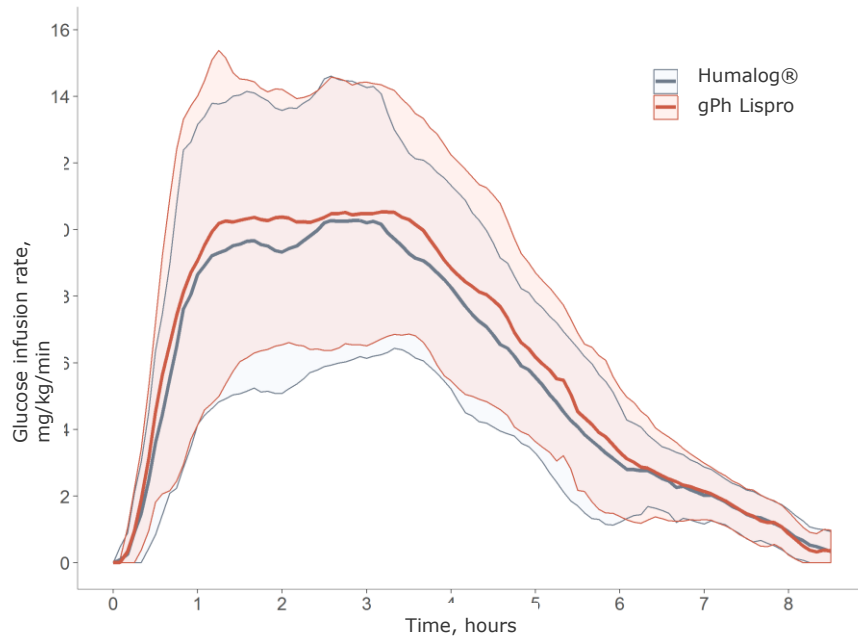
According to IMS Health (IQVIA)

PRODUCT PIPELINE. INSULIN ANALOGUES



DEVELOPMENT OF INSULIN PORTFOLIO (INSULIN ANALOGUES)

Lispro and Lispro 25 clamp studies were successfully completed

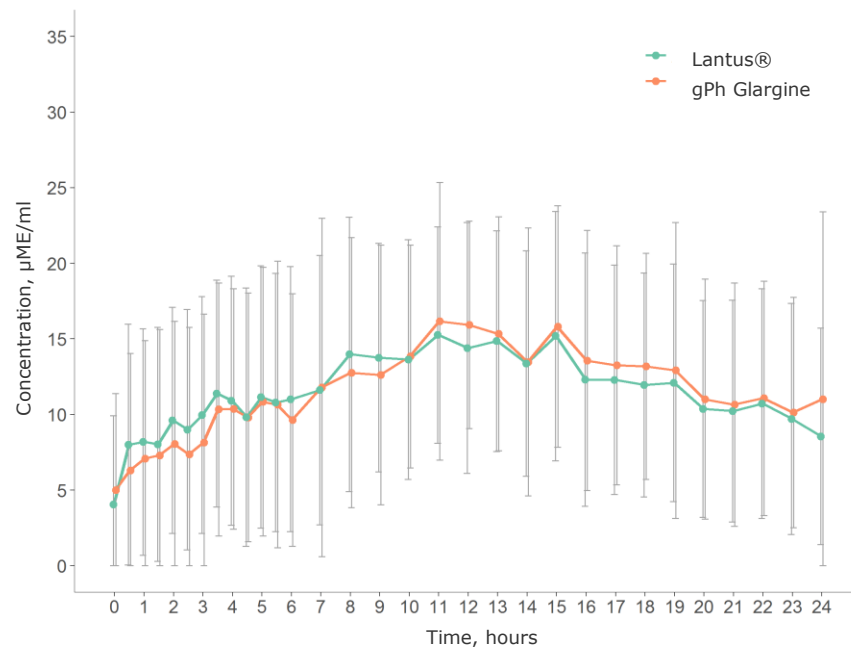
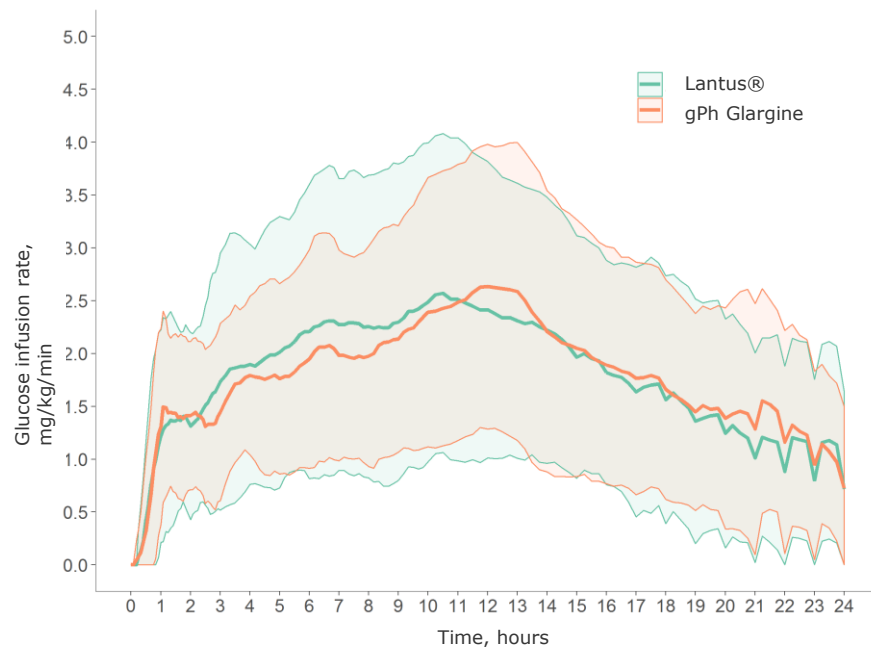


Bioequivalence of GEROPHARM Lispro and GEROPHARM Lispro 25 is proved based on Pharmacokinetics and Pharmacodynamics data

**Charts for GEROPHARM Lispro is provided as an example*

DEVELOPMENT OF INSULIN PORTFOLIO (INSULIN ANALOGUES)

Glargine clamp studies were successfully completed




Bioequivalence of GEROPHARM Glargine is proved based on Pharmacokinetics and Pharmacodynamics data



RESEARCH AND DEVELOPMENT

OWN R&D CENTER. PHARM-HOLDING

 Neudorf special economic zone, Saint Petersburg

- Full cycle of drug development in accordance with GLP, GCP, GMP standards
- Main R&D areas: neurology, endocrinology, orphan drugs
- State-of-the-art technologies: genetic engineering, molecular and cellular biology
- Highly qualified specialists, including those brought from abroad
- Complex approach to clinical study conduction — in-house staff specialists



R&D EXPERTISE AND FOCUS



Full cycle drug development



Full range of pre-registration studies



Approbation and introduction of technologies in industrial production

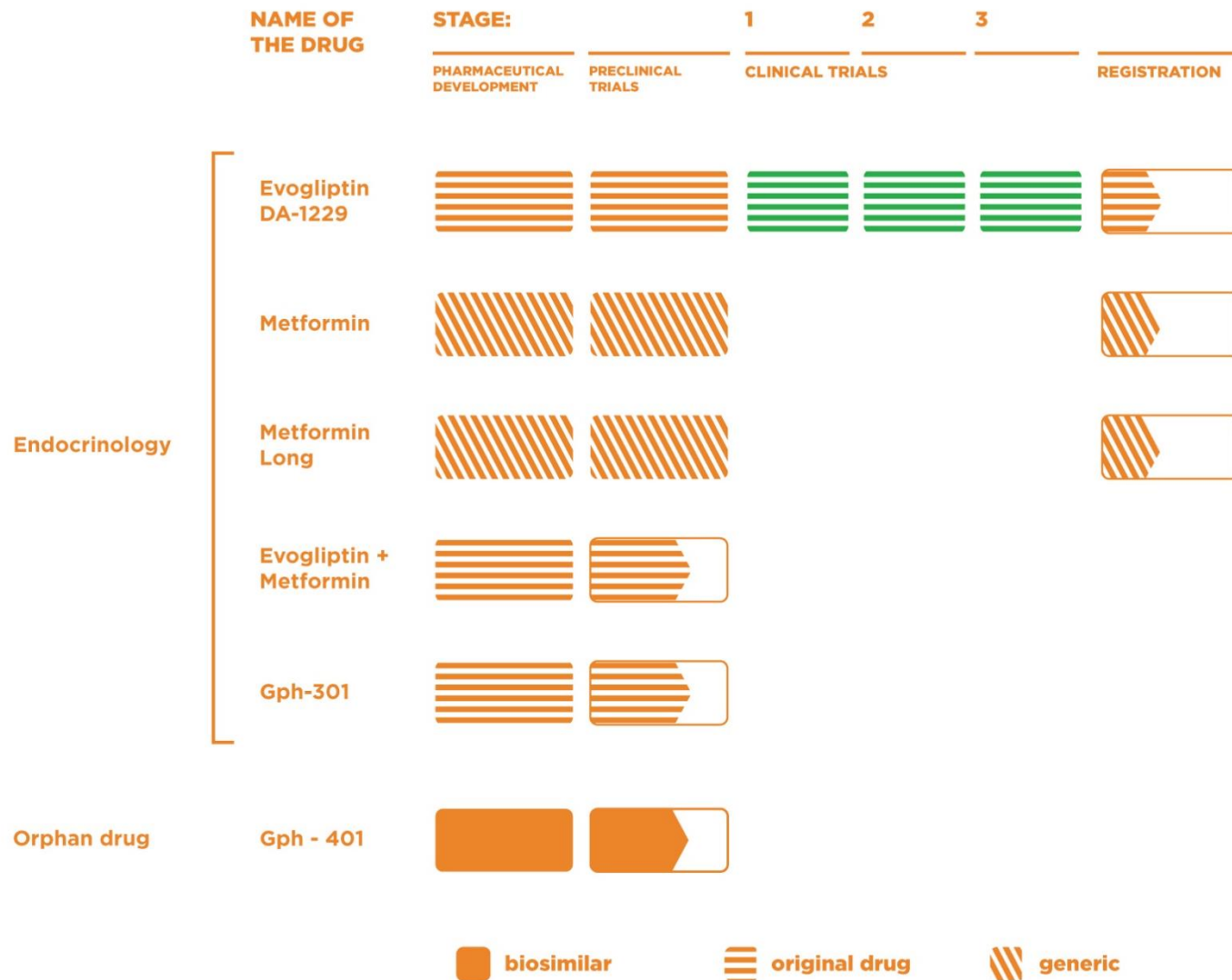


R&D LABORATORIES

- Genetic Engineering
- Upstream Processes
- Downstream Processes
- Finished Dosage Forms
- Analytical
- Pharmacology



PRODUCT PIPELINE





PRODUCTION

PRODUCTION COMPLEX OBOLENSK, MOSCOW REGION

- **Full cycle basis:** from scratch substance to the finished drug form
- Proprietary **patented technology** of recombinant human insulin production
- Automation level - **90%**
- **Advanced technologies** and the latest control methods, compliance with ISO 9001 and GMP standards



RINSULIN PRODUCTION: FROM SUBSTANCE TO THE FINISHED DOSAGE FORM

SUBSTANCE MANUFACTURING



1 Extraction of insoluble protein fraction (inclusion-body preparation)



2 Purification of the recombinant proinsulin protein



3 Purification of the insulin protein

PREPARATION OF THE FINISHED DOSAGE FORM



4 Solution preparation



5 Aseptic filling



6 Inspection



7 Packing and labeling

GEROPHARM INDUSTRIAL PROJECT IN ST.PETERSBURG

- Sophisticated technology: the production of pharmaceutical substances
- Total investments — 3,3 billion rubles
- High degree of automation
- Compliance with GMP standards

Project implementation period:

- 2017: launch of production line — pharmaceutical substances for original drugs
- 2018: launch of production line — substances for recombinant human insulin and biosimilar insulin analogues

Launch of new production line for insulin pharmaceutical substances will **fully meet needs of Russian population in insulin and will allow to develop export opportunities**



WHY WE ARE THE LEADERS?

- The first Russian producer of recombinant human insulin which is manufactured on a full cycle basis: from substance to the finished dosage form
- One of the priorities is production of active pharmaceutical substances
- Creation of modern pharmaceutical infrastructure – R&D center and high-tech full cycle production in compliance with GMP standards
- Production of original drugs that target for treatment of socially significant diseases as well as generic drugs that have priority in terms of import substitution



GEROPHARM CONSIDERS VARIOUS PLATFORMS OF COOPERATION

In-licensing of original drugs and smart generics to Russian and other CIS markets



In-house development and co-development of innovative medicines



Out-licensing of GEROPHARM products



Contract manufacturing and drug development services



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