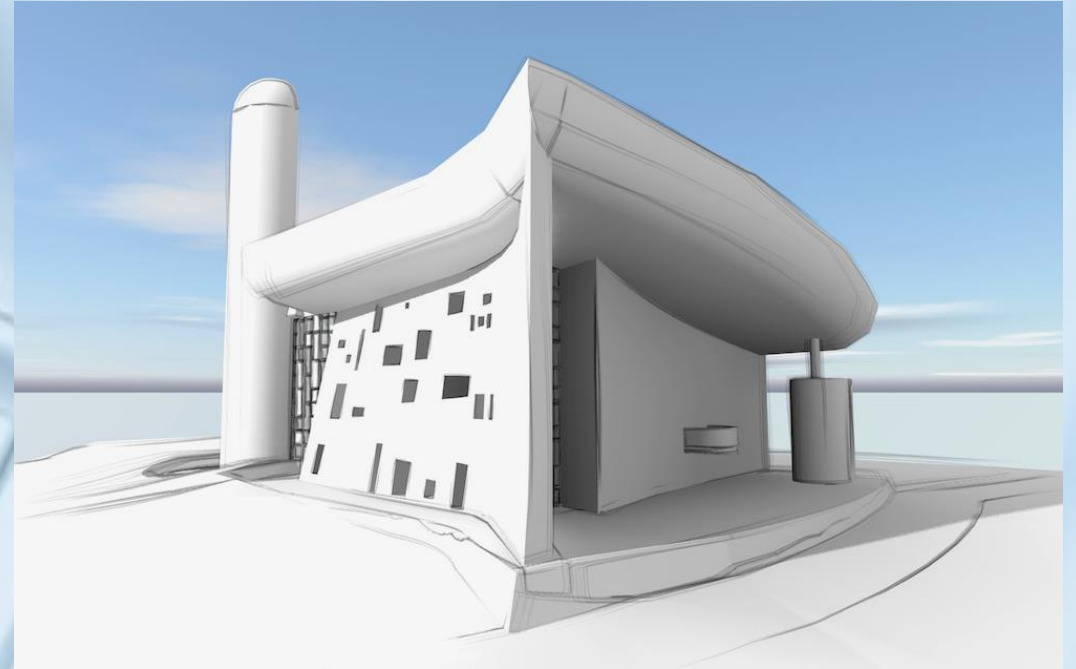


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Pushchino, 2017

Contract Development Manufacturing Organization «Pushchino»

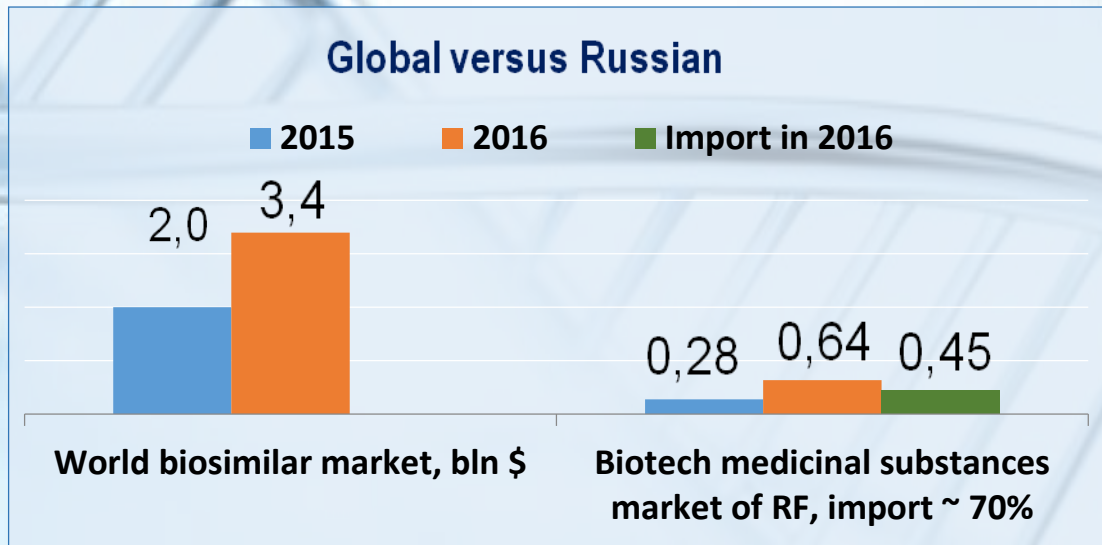


Production of more than 20 names of drugs, including

- **monoclonal Ab** - Ekulizumab, Natalizumab, Adalimumab, etanercept, Tocilizumab, Bevacizumab, Cetuximab, Ranibizumab, Palivizumab, Trastuzumab, Ustekinumab and others.
- **Recombinant and fusion proteins and enzymes**— Alteplase, Dornase alpha, Darbepoetin alfa, Imatinib, Sunitinib, Interferons, etc..

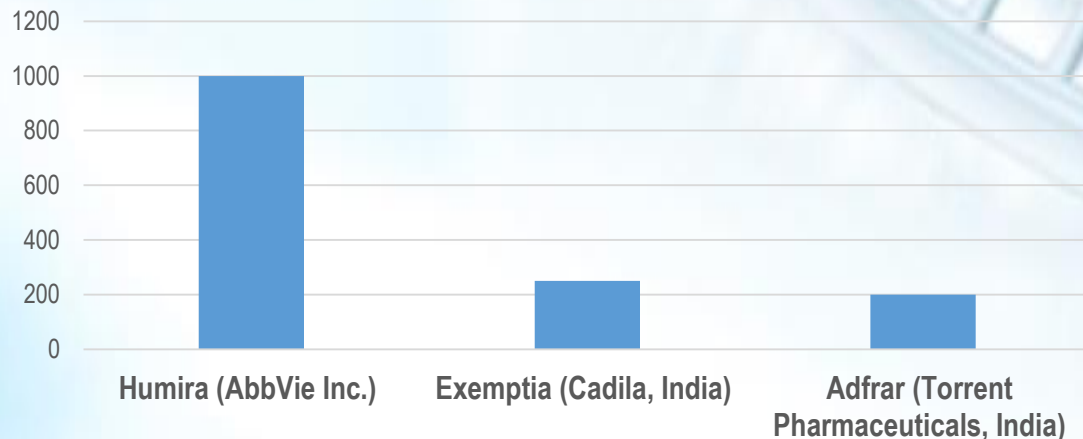
Biosimilar market behavior

Global versus Russian

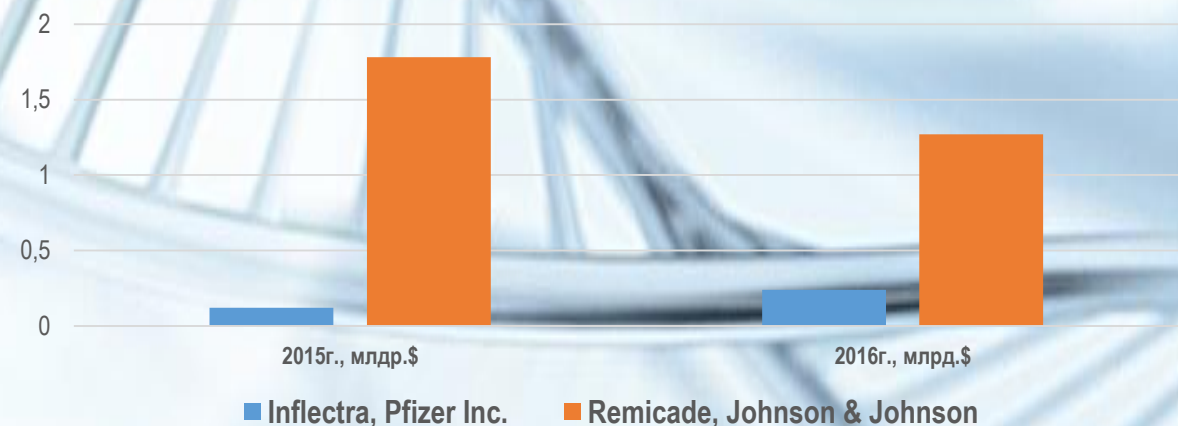


Invented name (proprietary name)	Price for 1 pack, RUR	IP expiry US	IP expiry EU
Adalimumab (Humira)	0,8 ml – 80000 RUR	Dec. 16	Apr. 18
Infliximab (Remicade)	20 ml – 50000 RUR.	Feb.15	Sep. 18
Etanercept (Enbrel)	50 ml – 50000 RUR.	Feb. 15	Nov. 28
Darbepoetin alfa (Aranesp)	0,5 мг – 80000 RUR	Jul. 16	May. 24
Rituximab (MabThera)	500мг/50мл – 40000 RUR	Nov. 13	Sep 16

Price for 1 pack, EU

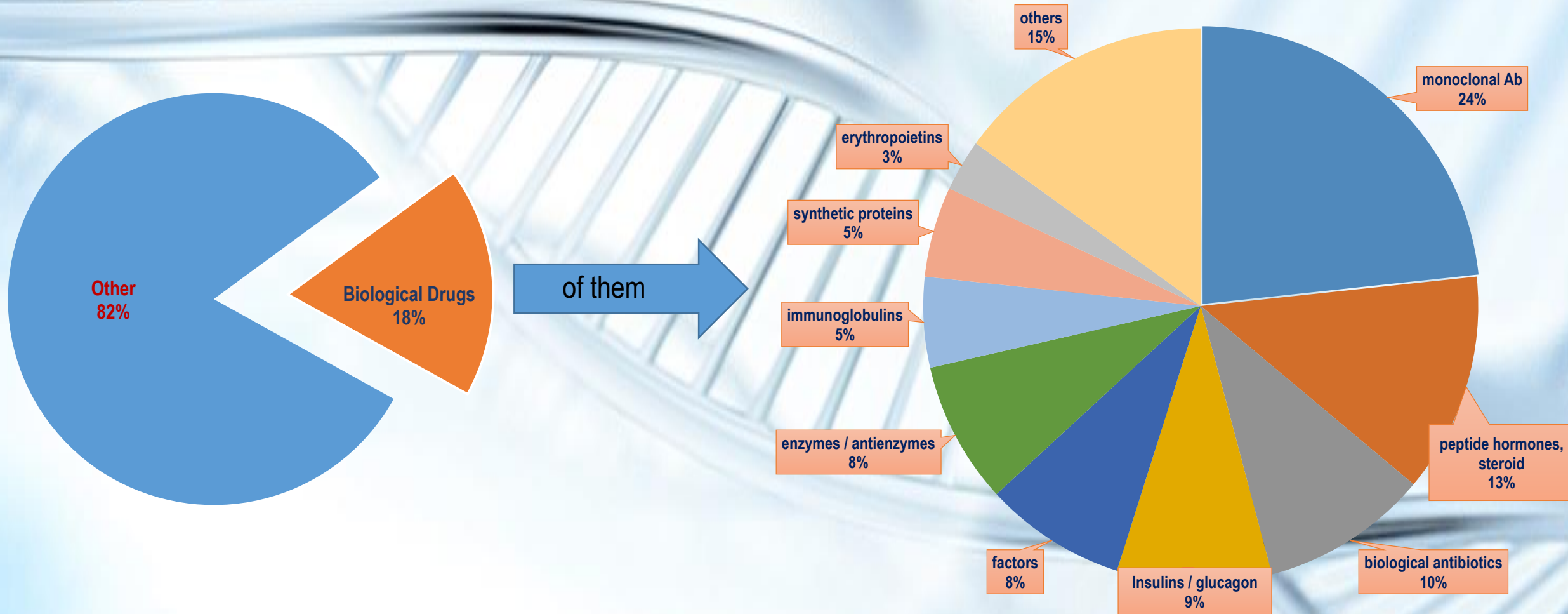


Biosimilar and Original ratio



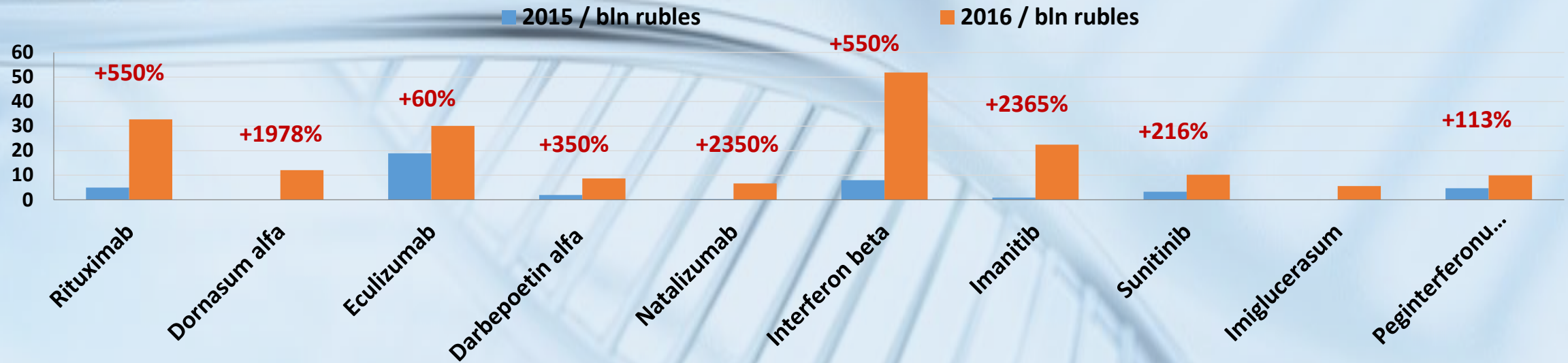
➤ Biosimilars are able to actively generate incomes on markets occupied with existing blockbusters

State import substitution programme analysis according to Ministry of Industry and Trade of the Russian Federation Federal Law #656 as of 31 Mar 2015

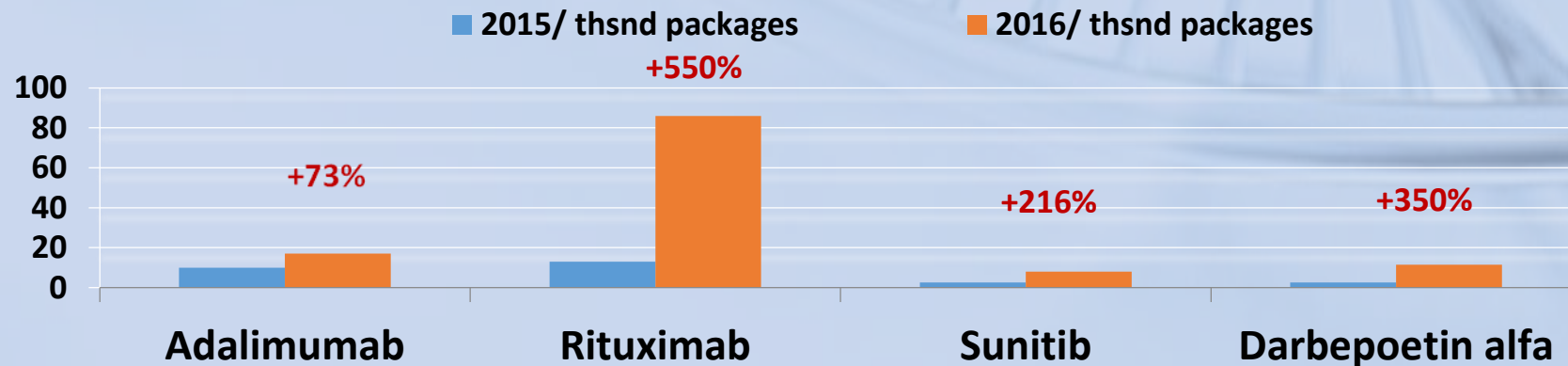


Dynamics of Government Biological Drugs Procurement Market - Target product line

Leaders of the growth in absolute terms



Dynamics of sales in packages



Distinctiveness, Novelty and Attributes

International Accreditation



Full GxP testings



Prospects for the development

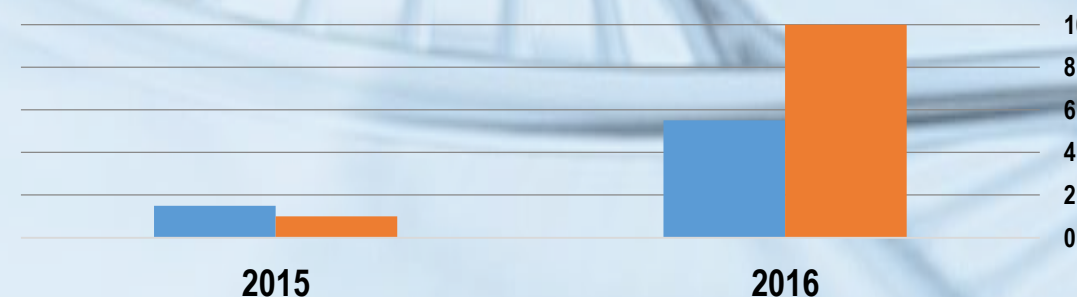


Company dynamics

Preclinical Study Centre, LLC

■ revenue/ mln rubles

■ contracts



Value Proposition

Biotechnological GMP grade industry zone 2000 m²
3 fermentation plants
6 pharmaceutical substances production lines

Eukaryotes reactors

50 l



200 l



Up to 5 kg API/ year

Prokaryotes reactors

10 l



100 l



Up to 13 kg API/ year

Yeast reactors

100 l



100 l



Up to 23 kg API/ year



Thank you for kind attention!

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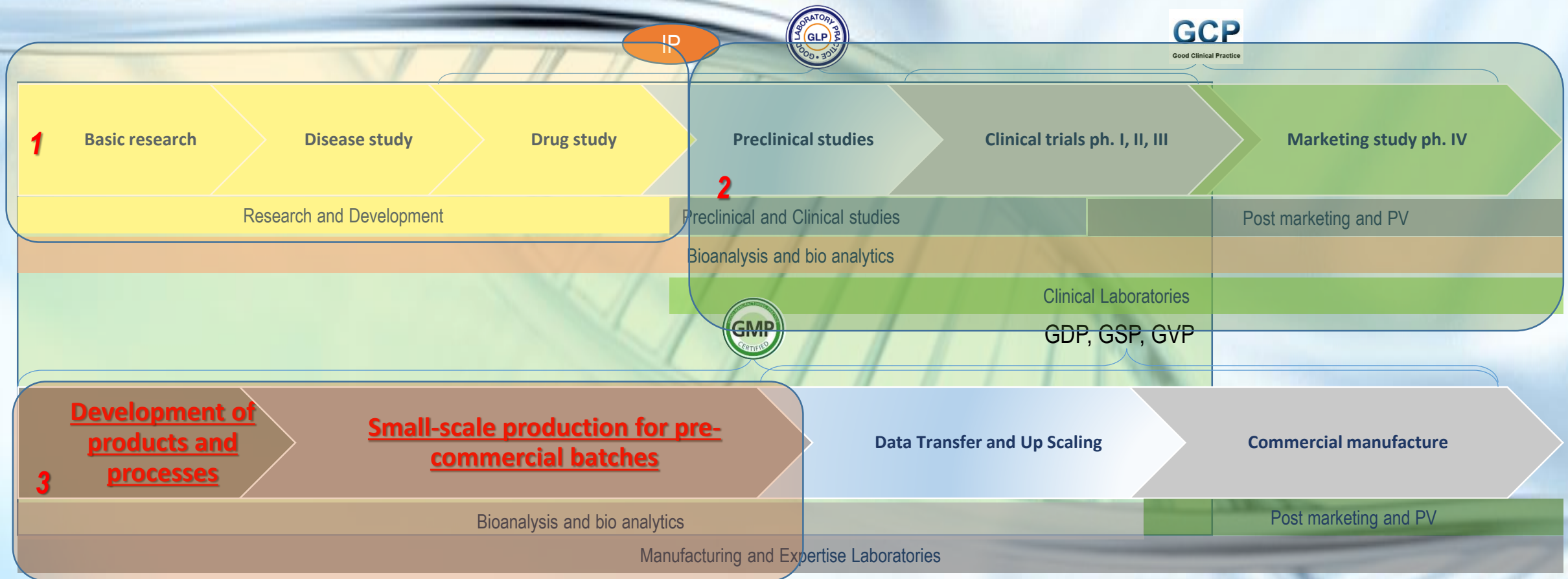
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Development of a new drug product progress



1 – Pushchino Scientific Center RAS activities

2 – Pharmaceutical Valley Cluster activities

3 – Demanded CDMO activities

Project localization infrastructure

Laboratory of Biological Testing
IBCh, RAS
In vivo
rodent toxicology



Moscow Institute of Physics & Technology
Toxicocinetics
bioanalytical and clinical chemistry

Pushchino Scientific Center Clinic
Bioeq and Phase I-III
Clinical trials



**Pharmaceutical
Valley
Cluster**



Moscow State University of Fine Chemical Technologies
Moscow State University
Science Park I.M. Sechenov First
Moscow State Medical University
Pushchino State Naturally Institute of Science

Institute of Medical Primatology
In vivo
non-HP toxicology



**Institute of Biochemistry and
Physiology of Microorganisms**
In vitro
microbiology

Stages and terms of project implementation

	Year quarter	2017				2018				2019				
		I	II	III	IV	I	II	III	IV	I	II	III	IV	
Pre-feasibility study														
Bankable Feasibility Study														
Tender for FEED														
Front-end engineering design, feasibility analysis, conceptual planning and design														
Detailed design, grid connection, equipment delivery, operation, installation, commissioning and start-up														
Staff training, validation of processes and equipment, handover to production														
			` - commencement of operations											
			` - completion of work											
			` - complete											

Conclusive statement

Of current concern

- The market is growing rapidly.
- The project is of high interest for the government, the investors and the producers.
- The competitors contract 100% of their production capacity at the building phase.

«At the right time and place» (the fundamental grounding for successful implementation)

- Historically established scientific and human capacities of Pushchino.
- Personnel training programs developed in Pushchino State Naturally Institute of Science in cooperation with Moscow State University of Fine Chemical Technologies, Moscow State University and the Science Park of I.M. Sechenov First Moscow State Medical University.
- 70% of orders portfolio is already formed

Achieving the strategic objective

- Creating a powerful tool to provide the **National biological security**
- Increasing the competitiveness of the domestic biopharmaceutical industry
- Import substitution of thigh-tech products
- Increasing federal and local tax payments and creating jobs