FUNCTIONAL GENOMICS / GENE ENGINEERING / DRUG DISCOVERY

Moscow Institute of Physics and Technology (National Research University)

Degree or qualification is awarded: **PhD (Candidate of Science)**

Language of study: **English**
Mode of study: **full-time**
Duration: **4 years**
Availability of free education: **yes**
Price: **375 000 RUB**

Programme webpage at the university website:
https://eng.mipt.ru/programs/functional-genomics-gene-engineering-drug-discovery/

Programme curator: **Denis Ustyuzhaninov**
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E-mail: interadmission@phystech.edu

Research supervisor:
Vassili Lazarev
PhD, DSc

Supervisor's research interests:

- Discovery of new antimicrobial, thrombolytic and anticoagulant protein and peptides.
- Recombinant protein production.
- Genome editing.

Supervisor's specific requirements:

- Background knowledge in molecular biology, biological chemistry.
- Hands-on experience with basic gene engineering and protein chemistry methods.
- Excellent communication and text writing skills.

Main publications:

- Baskova IP, Kalabushev SN, Akhaev DN, Bobrovsky PA, Manuvera VA, Lazarev VN. Role of isopeptidolysis in the process of thrombolysis. Thrombosis Research 2018;165:18-23. https://doi.org/10.1016/j.thromres.2018.03.007
- Rubtsova M, Naraykina Y, Vasilkova D, Meerson M, Zvereva M, Prassolov V, et al. Protein encoded in human telomerase RNA is involved in cell protective pathways. Nucleic Acids Res 2018;46:8966-77. https://doi.org/10.1093/nar/gky705
- Grafskaia EN, Nadezhdin KD, Talyzina IA, Polina NF, Podgorny OV, Pavlova ER, et al. Medicinal leech antimicrobial peptides lacking toxicity represent a promising alternative strategy to combat antibioticresistant pathogens. European Journal of Medicinal Chemistry 2019;180:143-53. https://doi.org/10.1016/j.ejmech.2019.06.080
- Podgorny OV, Polina NF, Lazarev VN. Isolation and Propagation of Single Inclusion-Derived Chlamydia Using Laser Microdissection. In: Brown AC, editor. Chlamydia trachomatis: Methods and Protocols, New York, NY: Springer; 2019, p. 137-50. https://doi.org/10.1007/978-1-4939-9694-0_10
- Fesenko I, Kirov I, Kniazev A, Khazigaleeva R, Lazarev V, Kharlampieva D, et al. Distinct types of short open reading frames are translated in plant cells. Genome Res 2019;29:1464-1477. https://doi.org/10.1101/gr.253302.119
- Babenko VV, Podgorny OV, Manuvera VA, Kasianov AS, Manolov AI, Grafskaia EN, et al. Draft genome sequences of Hirudo medicinalis and salivary transcriptome of three closely related medicinal leeches. BMC

Genomics 2020;21:331. https://doi.org/10.1186/s12864-020-6748-0

Specializations within this programme