

INVESTIGATION OF GROWTH AND MICROENVIRONMENT OF THE GLIOBLASTOMA

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/investigation-of-growth-and-microenvironment-of-the-glioblastoma/>

Programme curator: **Denis Ustyuzhaninov**

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Research supervisor:

[Julian Rozenberg](#)

PhD

Supervisor's research interests:

Research interests of our lab are in the fields of transcriptional regulation and cancer development and treatment. Specifically, we are interested in glioblastomas and astrocytomas – the deadliest neurological tumors. In our lab, we systematically investigate specific combinations of mutations, metabolic and epigenetic changes that provide growth advantage and immunological suppression. By rational design and screening, we are trying to identify molecules that would target a specific glioblastoma molecular subtype.

Research highlights:

In our work, we use primary surgically removed tumors and, in collaboration with colleagues across the globe, we are developing less-invasive methods to understand patient-specific conditions that lead to favorable outcome and help in the development of the better treatment options. We support further international careers for our students and will assist in grant applications for their professional growth.

Supervisor's specific requirements:

- Ability to read and understand English language.
- Knowledge of the molecular and cancer biology.
- Bioinformatics skills are encouraged.
- The most important – interest and enthusiastic approach to science. Ability to work hard and smart.

Main publications:

- Rozenberg JM, Taylor JM, Mack CP. RBPJ binds to consensus and methylated cis elements within phased nucleosomes and controls gene expression in human aortic smooth muscle cells in cooperation with SRF. *Nucleic Acids Res* 2018;46:8232-44. <https://doi.org/10.1093/nar/gky562>.
- Rishi V, Bhattacharya P, Chatterjee R, Rozenberg J, Zhao J, Glass K, et al. CpG methylation of half-CRE sequences creates C/EBP α binding sites that activate some tissue-specific genes. *PNAS* 2010;107:20311-6. <https://doi.org/10.1073/pnas.1008688107>.
- Belousov A, Titov S, Shved N, Garbuz M, Malykin G, Gulaia V, et al. The Extracellular Matrix and Biocompatible Materials in Glioblastoma Treatment. *Front Bioeng Biotechnol* 2019;7. <https://doi.org/10.3389/fbioe.2019.00341>.
- Gulaia V, Kumeiko V, Shved N, Cicinskas E, Rybtsov S, Ruzov A, et al. Molecular Mechanisms Governing the Stem Cell's Fate in Brain Cancer: Factors of Stemness and Quiescence. *Front Cell Neurosci* 2018;12. <https://doi.org/10.3389/fncel.2018.00388>. Mikhailova V, Gulaia V, Tiasto V, Rybtsov S, Yatsunskaya M,

Kagansky A. Towards an advanced cell-based in vitro glioma model system. AIMS Genet 2018;5:91-112.
<https://doi.org/10.3934/genet.2018.2.91>

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Specializations within this programme