EXPERIMENTAL CANCER RESEARCH

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/experimental-cancer-research/

Programme curator: **Denis Ustyuzhaninov**
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Research supervisor:
Alexander Shtil
MD PhD, DSci

Supervisor's research interests:
I have started two research laboratories in Moscow: 1) Mechanisms of Tumor Cell Death at Blokhin Cancer Center and 2) Molecular Oncobiology at the Institute of Gene Biology, Russian Academy of Sciences. Also, I founded a cancer biology group at ITRMO University, St. Petersburg and a team at the Dept. of Chemistry, Moscow State University. My research interests include molecular and cell biology of anticancer drug resistance, anticancer drug design, and medicinal chemistry of anticancer drugs. Currently these multidisciplinary groups consist of researchers <35 years, MS and PhD students.

Research highlights:
We collaborate with international groups in the US and France. In 2018-2020 we have a mega grant funded by the Russian Federation Government on transcriptional reprogramming in cancer (Prof.I.Roninson, supervisor; USA). We have support from RFBR as well.

Supervisor's specific requirements:

- Devotion to research.
- BS level in basic biochemistry/molecular biology.
- Fluent English and commitment to scientific writing.

Main publications:

- Beniaminov AD, Dezhenkova LG, Mamaeva OK, Shchyolkina AK, Tevyashova AN, Kaluzhny DN, et al. Divalent cations are dispensable for binding to DNA of a novel positively charged olivomycin A derivative. PLoS One 2018;13:e0191923. https://doi.org/10.1371/journal.pone.0191923
- Ivanova ES, Tatarskiy VV, Yastrebova MA, Khamidullina AI, Shunaev AV, Kalinina AA, et al. PF-114, a novel selective inhibitor of BCR-ABL tyrosine kinase, is a potent inducer of apoptosis in chronic myelogenous leukemia cells. International Journal of Oncology 2019;55:289-97. https://doi.org/10.3892/ijo.2019.4801
- Roninson IB, Gyorffy B, Mack Z, Shtil AA, Shtutman MS, Chen M, Broude EV. Identifying cancers impacted by CDK8/19. Cells 2019;8,821-836. http://doi.org/10.3390/cells8080821
- Sagnou M, Novikov FN, Ivanova ES, Alexiou P, Stroylov VS, Titov IY, et al. Novel curcumin derivatives as P-glycoprotein inhibitors: Molecular modeling, synthesis and sensitization of multidrug resistant cells to doxorubicin. European Journal of Medicinal Chemistry 2020;198:112331. https://doi.org/10.1016/j.ejmech.2020.112331

- Tikhomirov AS, Litvinova VA, Andreeva DV, Tsvetkov VB, Dezhenkova LG, Volodina YL, et al. Amides of pyrrole- and thiophene-fused anthraquinone derivatives: A role of the heterocyclic core in antitumor properties. European Journal of Medicinal Chemistry 2020;199:112294. https://doi.org/10.1016/j.ejmech.2020.112294
- Marsova MV, Odorskaya MV, Novichkova MD, Polyakova VS, Abilev SK, et al. The antioxidant Lactobacillus brevis 47f strain protects murine intestine from enteropathy induced by 5-fluorouracil. Microorganisms 2020;8,876. http://doi.org/10.3390/microorganisms8060876
- Beniaminov AD, Chashchina GV, Livshits MA, Kechko OI, Mitkevich VA, et al. Discrimination between G/C binding sites by olivomycin A is determined by kinetics of the drug-DNA interaction. Int J Mol Sci 2020;21:E5299. http://doi.org/10.3390/ijms21155299

Specializations within this programme