

### Сведения об официальном оппоненте

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Список основных публикаций по теме диссертации за последние 5 лет:

1. Varizhuk A.M., Isaakova E.A., Pozmogova G.E. DNA G-Quadruplexes (G4s) Modulate Epigenetic (Re)Programming and Chromatin Remodeling: Transient Genomic G4s Assist in the Establishment and Maintenance of Epigenetic Marks, While Persistent G4s May Erase Epigenetic Marks. *Bioessays* 2019. 41(9):e1900091.
2. Bogomazova A.N., Ereemeev A.V., Pozmogova G.E., Lagarkova M.A. The Role of Mutant RNA in the Pathogenesis of Huntington's Disease and Other Polyglutamine Diseases. *Mol Biol (Mosk)*. 2019. 53(6):954-967.
3. Varizhuk A.M., Protopopova A.D., Tsvetkov V.B., Barinov N.A., Podgorsky V.V., Tankevich M.V., Vlasenok M.A., Severov V.V., Smirnov I.P., Dubrovin E.V., Klinov D.V., Pozmogova G.E. Polymorphism of G4 associates: from stacks to wires via interlocks. *Nucleic Acids Research* 2018, 2. 46(17):8978-8992.
4. Tsvetkov V.B., Zatsepin T.S., Belyaev E.S., Kostyukevich Y.I., Shpakovski G.V., Podgorsky V.V., Pozmogova G.E., Varizhuk A.M., Aralov A.V. i-Clamp phenoxazine for the fine tuning of DNA i-motif stability. *Nucleic Acids Research* 2018, 46(6): 2751-2764,
5. Protopopova A.D., Tsvetkov V.B., Varizhuk A.M., Barinov N.A., Podgorsky V.V., Klinov D.V., Pozmogova G.E.. The structural diversity of C-rich DNA aggregates: unusual self-assembly of beetle-like nanostructures. *Physical Chemistry Chemical Physics* 2018, 20(5): 3543-3553.
6. Doronin D.A., Barykina N.V., Subach O.M., Sotskov V.P., Plusnin V.V., Ivleva O.A., Isaakova E.A., Varizhuk A.M., Pozmogova G.E., Malyshev A.Y., Smirnov I.V., Piatkevich K.D., Anokhin K.V., Enikolopov G.N., Subach F.V.. Genetically encoded calcium indicator with NTnC-like design and enhanced fluorescence contrast and kinetics. *BMC biotechnology* 2018, 18(1):10.
7. Barykina N.V., Subach O.M., Piatkevich K.D., Jung E.E., Malyshev A.Y., Smirnov I.V., Bogorodskiy A.O., Borshchevskiy V.I., Varizhuk A.M., Pozmogova G.E., Boyden E.S., Anokhin K.V., Enikolopov G.N., Subach F.V. Green fluorescent genetically encoded calcium indicator based on calmodulin/M13-peptide from fungi. *PloS one* 2017, 12 (8), e0183757,
8. Varizhuk A.M., Zatsepin T.S., Golovin A.V., Belyaev E.S., Kostyukevich Y.I., Dedkov V.G., Shipulin G.A., Shpakovski G.V., Aralov A.V. Synthesis of oligonucleotides containing novel G-clamp analogue with C8-tethered group in phenoxazine ring: Implication to qPCR detection of the low-copy Kemerovo virus dsRNA. *Bioorganic & medicinal chemistry* 2017, 25(14): 3597-3605,

9. Varizhuk A., Ischenko D., Tsvetkov V., Novikov R., Kulemin N., Kaluzhny D., Vlasenok M., Naumov V., Smirnov I., Pozmogova G. The expanding repertoire of G4 DNA structures. *Biochimie* 2017, 135: 54-62.
10. Prokofjeva M., Tsvetkov V., Basmanov D., Varizhuk A., Lagarkova M., Smirnov I., Prusakov K., Klinov D., Prassolov V., Pozmogova G., Mikhailov S. Anti-HIV Activities of Intramolecular G4 and Non-G4 Oligonucleotides. *Nucleic Acid Therapeutics* 2017, 27(1): 56-66,
11. Zakhazhevskaya N.B., Tsvetkov V.B., Vanyushkina A.A., Varizhuk A.M., Rakitina D.V., Podgorsky V.V., Vishnyakov I.E., Kharlampieva D.D., Manuvera V.A., Lisitsyn F.V., Gushina E.A., Lazarev V.N., Govorun V.M.. Interaction of *Bacteroides fragilis* toxin with outer membrane vesicles reveals new mechanism of its secretion and delivery. *Frontiers in cellular and infection microbiology* 2017, 7, 2.
12. Chuvilin A.N., Smirnov I.P., Mosina A.G., Varizhuk A.M., Pozmogova G.E. A Solution to the Common Problem of the Synthesis and Applications of Hexachlorofluorescein Labeled Oligonucleotides. *PloS one*. 2016, 11(11): e0166911.
13. Varizhuk A., Ilyinsky N., Smirnov I., Pozmogova G. G4 aptamers: trends in structural design. *Mini reviews in medicinal chemistry* 2016,16(16):1321-1329,
14. Barykina N.V., Subach O.M., Doronin D.A., Sotskov V.P., Roshchina M.A., Kunitsyna T.A., Malyshev A.Y., Smirnov I.V., Azieva A.M., Sokolov I.S., Piatkevich K.D., Burtsev M.S., Varizhuk A.M., Pozmogova G.E., Anokhin K.V., Subach F.V., Enikolopov G.N. A new design for a green calcium indicator with a smaller size and a reduced number of calcium-binding sites. *Scientific reports* 2016, 6, 34447.
15. Tsvetkov V., Pozmogova G., Varizhuk A. The systematic approach to describing conformational rearrangements in G-quadruplexes. *J Biomol Struct Dyn*. 2015, 1-36,
16. Tsvetkov V.B., Varizhuk A.M., Pozmogova G.E., Smirnov I.P., Kolganova N.A., Timofeev E.N. A universal base in a specific role: tuning up a thrombin aptamer with 5-nitroindole. *Scientific reports* 2015, 5, 16337.
17. Kirillova Y., Boyarskaya N., Dezhnikov A., Tankevich M., Prokhorov I., Varizhuk A., Eremin S., Esipov D., Smirnov I., Pozmogova G. Polyanionic Carboxyethyl Peptide Nucleic Acids (ce-PNAs): Synthesis and DNA Binding. *PloS one* 2015, 10(10), e0140468.