

## Сведения об официальном оппоненте

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Список основных публикаций по теме диссертации за последние 5 лет:

1. Yudkina A.V., Bulgakov N.A., Kim D.V., Baranova S.V., Ishchenko A.A., Saparbaev M.K., Koval V.V., Zharkov D.O. Abasic site–peptide cross-links are blocking lesions repaired by AP endonucleases // *Nucleic Acids Res.* – 2023. – V. 51. – No 12. – Article No. 6321-6336.
2. Шилкин Е.С., Петрова Д.В., Жарков Д.О., Макарова А.В. Альтернативные механизмы мутагенеза в mCpG сайтах при репликации и репарации // *Молекулярная биология.* – 2023. – Т. 57. – № 4. – С. 587-596.
3. Zharkov D. O., Yudkina A. V., Riesebeck T., Loshchenova P. S., Mostovich E. A., Dianov G. L. Boron-containing nucleosides as tools for boron–neutron capture therapy // *Am. J. Cancer Res.* – 2021. – V. 11. – No. 10. – P. 4668–4682.
4. Prorok P., Grin I. R., Matkarimov B. T., Ishchenko A. A., Laval J., Zharkov D. O., Saparbaev M. Evolutionary origis of DNA repair pathways: Role of oxygen catastrophe in the emergence of DNA glycosylases // *Cells.* – 2021. – V. 10. – No. 7. – Article No. 1591.
5. Endutkin A. V., Panferova E. P., Barmatov A. E., Zharkov D. O. DNA glycosylases for 8-oxoguanine repair in *Staphylococcus aureus* // *DNA Repair.* – 2021. – V. 105. – Article No. 103160.
6. Popov A., Endutkin A., Yatsenko D., Yudkina A., Barmatov A., Makasheva K., Raspopova D., Diatlova E., Zharkov D. Molecular dynamics approach to identification of new OGG1 cancer-associated somatic variants with impaired activity // *J Biol Chem.* – 2021. – V. 296. – Article No.100229.
7. Дымова М.А., Ендуткин А.В., Полуновский В.В., Закабунин А.И., Храпов Е.А., Торгашева Н.А., Юдкина А.В., Мечетин Г.В., Филипенко М.Л., Жарков Д.О. Изучение

свойств рекомбинантной эндонуклеазы IV *Mycobacterium tuberculosis* // Молекулярная биология. –2021. – Т. 55. – № 2. – С. 258–268.

8. Matkarimov B., Zharkov D., Saparbaev M. Mechanistic insight into the role of Poly(ADPribose)ylation in DNA topology modulation and response to DNA damage // *Mutagenesis*. – 2020. – V. 35. – N. 1. – P. 107–118.

9. Makasheva K., Endutkin A., Zharkov D. Requirements for DNA bubble structure for efficient cleavage by helix–two-turn–helix DNA glycosylases // *Mutagenesis*. – 2020. – V. 35. – N. 1. – P. 119–128.

10. Popov A., Grin I., Dvornikova A., Matkarimov B., Groisman R., Saparbaev M., Zharkov D. Reading Targeted DNA Damage in the Active Demethylation Pathway: Role of Accessory Domains of Eukaryotic AP Endonucleases and Thymine-DNA Glycosylases // *Journal of Mol Biol*. – 2020. – V. 432. – N. 6. – P. 1747-1768.

11. Mechetin G., Endutkin A., Diatlova E., Zharkov D. Inhibitors of DNA Glycosylases as Prospective Drugs // *Int. J. Mol. Sci*. – 2020. – V. 21. – Article No. 3118.

12. Yudkina, A.V.; Endutkin, A.V.; Diatlova, E.A.; Moor, N.A.; Vokhtantsev, I.P.; Grin, I.R.; Zharkov, D.O. Displacement of Slow-Turnover DNA Glycosylases by Molecular Traffic on DNA // *Genes*. – 2020. – N. 11. – Article No. 866.

13. Endutkin A., Yudkina A., Sidorenko V., Zharkov D. Transient protein–protein complexes in base excision repair // *Biomolecular Structure and Dynamics*. – 2019. – V. 37. – N. 17. – P. 4407-4418.

14. Kladova O., Grin I., Fedorova O., Kuznetsov N., Zharkov D. Conformational Dynamics of Damage Processing by Human DNA Glycosylase NEIL1 // *J of Mol Biol*. – 2019. – V. 431. – N. 6. – P. 1098-1112.

15. Kim D., Makarova A., Miftakhova R., Zharkov D. Base Excision DNA Repair Deficient Cells: From Disease Models to Genotoxicity Sensors // *Current Pharmaceutical Design*. – 2019. – V. 25. – N. 3. – P. 298-312.

16. Endutkin A., Zharkov D. Critical Sites of DNA Backbone Integrity for Damaged Base Removal by Formamidopyrimidine–DNA Glycosylase // *Biochemistry*. – 2019. – V. 58. – N. 24. – P. 2740-2749.

17. Bazlekowa-Karaban M., Prorok P., Baconnais S., Taipakova S., Akishev Z., Zembrzuska D., Popov A., Endutkin A., Groisman R., Ishchenko A., Matkarimov B., Bissenbaev A., Cam E., Zharkov D., Tudek B., Saparbaev M. Mechanism of stimulation of DNA binding of the transcription factors by human apurinic/apyrimidinic endonuclease 1, APE1 // DNA Repair. – 2019. – V. 82. – Article No. 102698.
18. Petrova, D., Naumenko, M., Khantakova, D. et al. Relative Efficiency of Recognition of 5-Methylcytosine and 5-Hydroxymethylcytosine by Methyl-Dependent DNA Endonuclease Glal // Russ J Bioorg Chem. – 2019. – V. 45. – P. 625–629.
19. Yudkina, A., Sokolov, M., Abramov, P. et al. Platinum Polyoxoniobates Form Adducts with DNA // Russ J Bioorg Chem – 2019. – V. – 45. –P. 641–646
20. Yudkina A.V., Dvornikova A.P., Zharkov D.O. Variable termination sites of DNA polymerases encountering a DNA–protein crosslink // PLoS ONE. – 2018. – V. 13. – N. 6. – Article No. e0198480.
21. Endutkin A., Koptelov S., Popov A., Torgasheva N., Lomzov A., Tsygankova A., Skiba T., Afonnikov D., Zharkov D. Residue coevolution reveals functionally important intramolecular interactions in formamidopyrimidine-DNA glycosylase // DNA Repair. – 2018. – V. 69. – P. 24–33.
22. Turgimbayeva A., Abeldenov S., Zharkov D.O., Ishchenko A.A., Ramankulov Y., Saparbaev M., Khassenov B. Characterization of biochemical properties of an apurinic/apyrimidinic endonuclease from *Helicobacter pylori* // PLoS ONE. – 2018. – V. 13. – N. 8. – Article No. e0202232.
23. Gruber D., Toner J., Miers H., Shernyukov A., Kiryutin A., Lomzov A., Endutkin A., Grin I., Petrova D., Kupryushkin M., Yurkovskaya A., Johnson E., Okon M., Bagryanskaya E., Zharkov D., Smirnov S., Oxidative damage to epigenetically methylated sites affects DNA stability, dynamics and enzymatic demethylation // Nucleic Acids Research. – 2018. – V. 46. – N. 20. – P. 10827–10839.
24. Akishev Z., Bissenbaev A.K., Mazon G., Geacintov N.E., Gasparutto D., Groisman R., Zharkov D.O., Matkarimov B.T., Saparbaev M. Aberrant repair initiated by the adenine-DNA glycosylase does not play a role in UV-induced mutagenesis in *Escherichia coli*. // PeerJ. – 2018. – V. 6. – Article No. e6029