

Publications of Department of Biochemistry and Molecular Biology
in 2020

1. Gyenes, D., **Budai, Z.**, Sarang, Z.: Magas intenzitású intervallum edzés hatásainak vizsgálata.
In: Trendek a versenysport és a szabadidősport területéről. Szerk.: Balogh László, Debreceni Egyetem Sporttudományi Koordinációs Intézet, Debrecen, 1-11, 2020, (Válogatott tanulmányok a sporttudomány köréből, ISSN 2631-0910 ; 4) ISBN: 9789634902218
2. **Bálint, B.**, Scholtz, B.: Bioinformatika-oktatás élettudományi hallgatók részére a Galaxy-platform segítségével = Teaching Bioinformatics for Students of Life Science on the Galaxy Platform.
Magy. tud. 181 (1), 116-120, 2020.
3. **Czipa E**, Schiller M, **Nagy T**, Kontra L, Steiner L, Koller J, Pálné-Szén O, Barta E.: ChIPSummitDB: a ChIP-seq-based database of human transcription factor binding sites and the topological arrangements of the proteins bound to them.
Database (Oxford). 2020 Jan 1;2020. pii: baz141.
IF: 3.451
4. **Nagy G**, Daniel B, **Cuaranta-Monroy I**, Nagy L.:
Unraveling the hierarchy of cis and trans factors that determine the DNA binding by PPAR γ .
Mol Cell Biol. 2020 Mar 16;40(7):e00547-19.
IF: 4.272
5. **Gazda LD**, Joóné Matúz K, Nagy T, Mótyán JA, Tőzsér J.:
Biochemical characterization of Ty1 retrotransposon protease.
PLoS One. 2020 Jan 9;15(1):e0227062. eCollection 2020.
IF: 3.24
6. Tóth F, Gáll JM, **Tőzsér J**, Hegedűs C.:
Effect of inducible bone morphogenetic protein 2 expression on the osteogenic differentiation of dental pulp stem cells in vitro.
Bone. 2020 Mar;132:115214. Epub 2019 Dec 26.
IF: 4.398
7. Rehó B, Lau L, Mocsár G, Müller G, Fadel L, **Brázda P**, Nagy L, Tóth K, Vámosi G.: Simultaneous Mapping of Molecular Proximity and Comobility Reveals Agonist-Enhanced Dimerization and DNA Binding of Nuclear Receptors.
Anal Chem. 2020 Jan 21;92(2):2207-2215. Epub 2020 Jan 8.
IF: 6.986

8. Csumita M, Csermely A, Horvath A, Nagy G, Monori F, Göczi L, Orbea HA, Reith W, Széles L.:

Specific enhancer selection by IRF3, IRF5 and IRF9 is determined by ISRE half-sites, 5' and 3' flanking bases, collaborating transcription factors and the chromatin environment in a combinatorial fashion.

Nucleic Acids Res. 2020 Jan 24;48(2):589-604.

IF: 16.971

9. Zsolyomi F, Ambrus V, Fuxreiter M.: Patterns of Dynamics Comprise a Conserved Evolutionary Trait.

J Mol Biol. 2020 Jan 17;432(2):497-507. Epub 2019 Nov 27.

IF: 5.469

10. Kubatova N, Pyper DJ, Jonker HRA, Saxena K, Remmel L, Richter C, Brantl S, Evgenieva-Hackenberg E, Hess WR, Klug G, Marchfelder A, Soppa J, Streit W, Mayzel M, Orekhov VY, Fuxreiter M, Schmitz RA, Schwalbe H.:

Rapid Biophysical Characterization and NMR Spectroscopy Structural Analysis of Small Proteins from Bacteria and Archaea.

Chembiochem. 2020 Apr 17;21(8):1178-1187. Epub 2020 Jan 21.

IF: 3.164

11. Weiss-Hersh K, Garcia AL, Marosvölgyi T, Szklenár M, Decsi T, Rühl R.:

Saturated and monounsaturated fatty acids in membranes are determined by the gene expression of their metabolizing enzymes SCD1 and ELOVL6 regulated by the intake of dietary fat.

Eur J Nutr. 2020 Sep;59(6):2759-2769. Epub 2019 Nov 1.

IF: 5.469

12. Kovács D, Hegyi K, Szegedi A, Deák D, Pólishka S, Rühl R, Zouboulis CC, Töröcsik D.: Isotretinoin is indirectly effective in sebocytes.

Br J Dermatol. 2020 Apr;182(4):1052-1054. Epub 2019 Nov 25.

IF: 9.302

13. Medgyesi B, Dajnoki Z, Béke G, Gáspár K, Szabó IL, Janka EA, Pólishka S, Hendrik Z, Méhes G, Töröcsik D, Bíró T, Kapitány A, Szegedi A.: Rosacea Is Characterized by a Profoundly Diminished Skin Barrier.

J Invest Dermatol. 2020 Oct;140(10):1938-1950.e5. Epub 2020 Mar 19.

IF: 8.551

14. Mótyán JA, Miczi M, Tőzsér J.: Dimer Interface Organization is a Main Determinant of Intermonomeric Interactions and Correlates with Evolutionary Relationships of Retroviral and Retroviral-Like Ddi1 and Ddi2 Proteases.

Int J Mol Sci. 2020 Feb 17;21(4):1352.

IF: 5.923

15. Posta N, Csősz É, Oros M, Pethő D, Potor L, Kalló G, Hendrik Z, Sikura KÉ, Méhes G, Tóth C, Posta J, Balla G, Balla J.: Hemoglobin oxidation generates globin-derived peptides in atherosclerotic lesions and intraventricular hemorrhage of the brain, provoking endothelial dysfunction.

Lab Invest. 2020 Jul;100(7):986-1002. Epub 2020 Feb 13.

IF: 5.662

16. Nagy G, Nagy L.: Motif grammar: The basis of the language of gene expression.

Comput Struct Biotechnol J. 2020 Jul 18;18:2026-2032. eCollection 2020.

IF: 7.271

17. Sansbury BE, Li X, Wong B, Patsalos A, Giannakis N, Zhang MJ, Nagy L, Spite M.: Myeloid ALX/FPR2 regulates vascularization following tissue injury.

Proc Natl Acad Sci U S A. 2020 Jun 23;117(25):14354-14364. Epub 2020 Jun 8.

IF: 11.205

18. Jambrovics K, Uray IP, Keillor JW, Fésüs L, Balajthy Z.: Benefits of Combined All-Trans Retinoic Acid and Arsenic Trioxide Treatment of Acute Promyelocytic Leukemia Cells and Further Enhancement by Inhibition of Atypically Expressed Transglutaminase 2.

Cancers (Basel). 2020 Mar 11;12(3):648.

IF: 6.639

19. Karányi Z, Hornyák L, Székvölgyi L.: Histone H3 Lysine 56 Acetylation Is Required for Formation of Normal Levels of Meiotic DNA Breaks in *S. cerevisiae*.

Front Cell Dev Biol. 2020 Jan 10;7:364. eCollection 2019.

IF: 6.684

20. Tóth BB, Arianti R, Shaw A, Vámos A, Veréb Z, Póliska S, Győry F, Bacso Z, Fésüs L, Kristóf E.: FTO Intronic SNP Strongly Influences Human Neck Adipocyte Browning Determined by Tissue and PPAR γ Specific Regulation: A Transcriptome Analysis.

Cells. 2020 Apr 16;9(4):987.

IF: 6.6

21. Szojka Z, Mótyán JA, Miczi M, Mahdi M, Tőzsér J.: Y44A Mutation in the Acidic Domain of HIV-2 Tat Impairs Viral Reverse Transcription and LTR-Transactivation.

Int J Mol Sci. 2020 Aug 17;21(16):5907.

IF: 5.923

22. Szilágyi B, Fejes Z, Póliska S, Pócsi M, Czimmerer Z, Patsalos A, Fenyvesi F, Rusznyák Á, Nagy G, Kerekes G, Berhés M, Szűcs I, Kunapuli SP, Kappelmayer J, Nagy B

Jr.: Reduced miR-26b Expression in Megakaryocytes and Platelets Contributes to Elevated Level of Platelet Activation Status in Sepsis.

Int J Mol Sci. 2020 Jan 29;21(3):866.

IF: 5.923

23. Fodor K, Dobos N, Schally A, Steiber Z, Olah G, Sipos E, **Szekvolgyi L**, Halmos G.: The targeted LHRH analog AEZS-108 alters expression of genes related to angiogenesis and development of metastasis in uveal melanoma.

Oncotarget. 2020 Jan 14;11(2):175-187. eCollection 2020 Jan 14.

24. Gurwitz KT, Singh Gaur P, Bellis LJ, Larcombe L, Alloza E, **Balint BL**, Botzki A, Dimec J, Dominguez Del Angel V, Fernandes PL, Korpelainen E, Krause R, Kuzak M, Le Pera L, Leskošek B, Lindvall JM, Marek D, Martinez PA, Muylldermans T, Nygård S, Palagi PM, Peterson H, Psomopoulos F, Spiwok V, van Gelder CWG, Via A, Vidak M, Wibberg D, Morgan SL, Rustici G.: A framework to assess the quality and impact of bioinformatics training across ELIXIR.

PLoS Comput Biol. 2020 Jul 23;16(7):e1007976. eCollection 2020 Jul.

IF: 4.475

25. Alatshan A, Kovács GE, Aladdin A, **Czimmerer Z**, Tar K, Benkő S.: All-Trans Retinoic Acid Enhances both the Signaling for Priming and the Glycolysis for Activation of NLRP3 Inflammasome in Human Macrophage.

Cells. 2020 Jul 1;9(7):1591. doi: 10.3390/cells9071591.

IF: 6.6

26. **Miskei M, Horvath A**, Vendruscolo M, Fuxreiter M.: Sequence-Based Prediction of Fuzzy Protein Interactions.

J Mol Biol. 2020 Mar 27;432(7):2289-2303. Epub 2020 Feb 27.

IF: 5.469

27. **Horvath A, Miskei M, Ambrus V**, Vendruscolo M, Fuxreiter M.: Sequence-based prediction of protein binding mode landscapes.

PLoS Comput Biol. 2020 May 26;16(5):e1007864. eCollection 2020 May.

IF: 4.475

28. Divoux A, Sandor K, **Bojcsuk D**, Yi F, Hopf ME, Smith JS, **Balint BL**, Osborne TF, Smith SR.: Fat Distribution in Women Is Associated With Depot-Specific Transcriptomic Signatures and Chromatin Structure.

J Endocr Soc. 2020 Apr 8;4(6):bva042. eCollection 2020 Jun 1.

29. **Erdős E, Bálint BL.**: NR2F2 Orphan Nuclear Receptor is Involved in Estrogen Receptor Alpha-Mediated Transcriptional Regulation in Luminal A Breast Cancer Cells.

Int J Mol Sci. 2020 Mar 11;21(6):1910.

IF: 5.923

30. **Lénárt K, Pap A, Pórszász R, V Oláh A, Fésüs L, Mádi A.**: Transglutaminase 2 Has Metabolic and Vascular Regulatory Functions Revealed by In Vivo Activation of Alpha1-Adrenergic Receptor.
Int J Mol Sci. 2020 May 29;21(11):3865.
IF: 5.923
31. **Szatmári-Tóth M, Shaw A, Csomós I, Mocsár G, Fischer-Posovszky P, Wabitsch M, Balajthy Z, Lányi C, Győry F, Kristóf E, Fésüs L.**: Thermogenic Activation Downregulates High Mitophagy Rate in Human Masked and Mature Beige Adipocytes.
Int J Mol Sci. 2020 Sep 10;21(18):E6640.
IF: 5.923
32. Steckel A, Uray K, **Kalló G, Csosz É**, Schlosser G.: Investigation of Neutral Losses and the Citrulline Effect for Modified H4 N-Terminal Pentapeptides.
J Am Soc Mass Spectrom. 2020 Mar 4;31(3):565-573. Epub 2020 Jan 29.
IF: 3.109
33. Douida A, **Batista F, Robaszkiewicz A, Boto P, Aladdin A, Szenyikiv M, Czinege R, Virág L, Tar K.**: The proteasome activator PA200 regulates expression of genes involved in cell survival upon selective mitochondrial inhibition in neuroblastoma cells.
J Cell Mol Med. 2020 Jun;24(12):6716-6730. Epub 2020 May 5.
IF: 5.31
34. Fadel L, Rehó B, Volkó J, **Bojcsuk D, Kolostyák Z, Nagy G, Müller G, Simandi Z, Hegedüs É, Szabó G, Tóth K, Nagy L, Vámosi G.**: Agonist binding directs dynamic competition among nuclear receptors for heterodimerization with retinoid X receptor.
J Biol Chem. 2020 Jul 17;295(29):10045-10061. Epub 2020 Jun 8.
IF: 5.157
35. **Toldi V, Szabó A, Sahin-Tóth M.**: Inactivation of mesotrypsin by chymotrypsin C prevents trypsin inhibitor degradation.
J Biol Chem. 2020 Mar 13;295(11):3447-3455. Epub 2020 Feb 3.
IF: 5.157
36. **Golda M, Mótyán JA, Mahdi M, Tőzsér J.**: Functional Study of the Retrotransposon-Derived Human PEG10 Protease.
Int J Mol Sci. 2020 Mar 31;21(7):2424.
IF: 5.923
37. **Golda M, Mótyán JA, Nagy K, Matúz K, Nagy T, Tőzsér J.**: Biochemical Characterization of Human Retroviral-Like Aspartic Protease 1 (ASPRV1).

Biomolecules. 2020 Jul 6;10(7):1004.

IF: 4.879

38. **Csobán-Szabó Z, Fésüs L, Király R.**: Protein-peptide based assay for the characterization of human blood coagulation factor XIII-A isopeptidase activity.

Anal Biochem. 2020 Jul 1;600:113699. Epub 2020 Apr 23.

IF: 3.365

39. **Majai GE, Gogolák P, Tóth M, Hodrea J, Horváth D, Fésüs L, Rajnavölgyi É, Bácsi A.**: Autologous apoptotic neutrophils inhibit inflammatory cytokine secretion by human dendritic cells, but enhance Th1 responses.

FEBS Open Bio. 2020 May 30;10(8):1492-502. Online ahead of print.

IF: 2.693

40. **Bojcsuk D, Nagy G, Bálint BL.**: Alternatively Constructed Estrogen Receptor Alpha-Driven Super-Enhancers Result in Similar Gene Expression in Breast and Endometrial Cell Lines.

Int J Mol Sci. 2020 Feb 27;21(5):1630.

IF: 5.923

41. **Lucas R, Mihály J, Gericke J, Töröcsik D, Rühl R.**: Vitamin D signaling in a mouse allergic sensitization model.

Int J Vitam Nutr Res. 2020 Jan 23:1-4. Online ahead of print.

IF: 1.784

42. **Golda, M., Mótyán, J., Mahdi, M., Tőzsér, J.**: Study of the Retrotransposon-Derived Human PEG10 Protease.

Proceedings. 50 (1), 110, 2020.

43. Gál, Z., Gézsi, A., Molnár, V., Nagy, A., Kiss, A., Sultész, M., Csoma, Z., Tamási, L., Gálffy, G., **Bálint, B., Póliska, S.**, Szalai, C.: Corrigendum: Investigation of the Possible Role of Tie2 Pathway and TEK Gene in Asthma and Allergic Conjunctivitis.

Front Genet. 11 702, 2020.

44. **Bálint, B.**: Embracing Noise and Error.

Hung. Studies Yearbk. 2020.

45. Ulukan B, Bihorac A, Sipahioglu T, **Kiraly R, Fesus L**, Telci D.: Role of Tissue Transglutaminase Catalytic and Guanosine Triphosphate-Binding Domains in Renal Cell Carcinoma Progression.

ACS Omega. 2020 Oct 20;5(43):28273-28284.

IF: 3.512

46. **Miczi M, Golda M, Kunkli B, Nagy T, Tőzsér J, Mótyán JA.**: Identification of Host Cellular Protein Substrates of SARS-CoV-2 Main Protease.

Int J Mol Sci. 2020 Dec 15;21(24):9523.

IF: 5.923

47. Fodor K, Sipos É, Dobos N, Nagy J, Steiber Z, Méhes G, Dull K, **Székvölgyi L**, Schally AV, Halmos G.: Correlation between the Expression of Angiogenic Factors and Stem Cell Markers in Human Uveal Melanoma

Life (Basel). 2020 Nov 25;10(12):310.

IF: 3.817

48. **Scholtz B, Vo Minh D, Kiss C, Tar I, Kumar A, Tőzsér J, Csősz É, Márton I.**: Examination of Oral Squamous Cell Carcinoma and Precancerous Lesions Using Proximity Extension Assay and Salivary RNA Quantification

Biomedicines. 2020 Dec 14;8(12):610.

IF: 6.081

49. **Mahdi M, Mótyán JA, Szojka ZI, Golda M, Miczi M, Tőzsér J.**: Analysis of the efficacy of HIV protease inhibitors against SARS-CoV-2's main protease

Virol J. 2020 Nov 26;17(1):190.

IF: 4.099

50. Selbmann L, Benkő Z, Coleine C, de Hoog S, Donati C, Druzhinina I, Emri T, Ettinger CL, Gladfelter AS, Gorbushina AA, Grigoriev IV, Grube M, Gunde-Cimerman N, Karányi ZÁ, Kocsis B, Kubressoian T, Miklós I, **Miskei M**, Muggia L, Northen T, Novak-Babič M, Pennacchio C, Pfliegler WP, Pòcsi I, Prigione V, Riquelme M, Segata N, Schumacher J, Shelest E, Sterflinger K, Tesei D, U'Ren JM, Varese GC, Vázquez-Campos X, Vicente VA, Souza EM, Zalar P, Walker AK, Stajich JE.: Shed Light in the DaRk LineagES of the Fungal Tree of Life-STRES.

Life (Basel). 2020 Dec 19;10(12):362.

IF: 3.817

51. Józsa L, Ujhelyi Z, Vasvári G, Sinka D, Nemes D, Fenyvesi F, Váradi J, Vecsernyés M, Szabó J, **Kalló G**, Vasas G, Bácskay I, Fehér P.: Formulation of Creams Containing Spirulina Platensis Powder with Different Nonionic Surfactants for the Treatment of Acne Vulgaris.

Molecules. 2020 Oct 21;25(20):4856.

IF: 4.411

52. **Czimmerer Z, Halasz L, Nagy L.**: Unorthodox Transcriptional Mechanisms of Lipid-Sensing Nuclear Receptors in Macrophages: Are We Opening a New Chapter?

Front Endocrinol (Lausanne). 2020 Dec 10;11:609099.

IF: 5.555

53. Hathy E, Szabó E, Varga N, Erdei Z, Tordai C, Czehlár B, Baradits M, Jezsó B, Koller J, Nagy L, Molnár MJ, Homolya L, Nemoda Z, Apáti Á, Réthelyi JM.: Investigation of de novo mutations in a schizophrenia case-parent trio by induced pluripotent stem cell-based in vitro disease modeling: convergence of schizophrenia- and autism-related cellular phenotypes. *Stem Cell Res Ther.* 2020 Nov 27;11(1):504.

IF: 6.832

54. Alvarado G, Tóth A, Csósz É, Kalló G, Dankó K, Csernátony Z, Smith A, Gram M, Åkerström B, Édes I, Balla G, Papp Z, Balla J.: Heme-Induced Oxidation of Cysteine Groups of Myofilament Proteins Leads to Contractile Dysfunction of Permeabilized Human Skeletal Muscle Fibres.

Int J Mol Sci. 2020 Oct 31;21(21):8172.

IF: 5.923

55. Hardenberg M, Horvath A, Ambrus V, Fuxreiter M, Vendruscolo M.: Widespread occurrence of the droplet state of proteins in the human proteome *Proc Natl Acad Sci U S A.* 2020 Dec 29;117(52):33254-33262.

IF: 11.205

56. Bozóki B, Mótyán JA, Hoffka G, Waugh DS, Tőzsér J.: Specificity Studies of the Venezuelan Equine Encephalitis Virus Non-Structural Protein 2 Protease Using Recombinant Fluorescent Substrates.

Int J Mol Sci. 2020 Oct 16;21(20):7686.

IF: 5.923

57. Mokánszki A, Molnár Z, Varga TóthnÉ E, Bodnár B, Jakab A, Bálint BL, Balogh I.: Altered microRNAs expression levels of sperm and seminal plasma in patients with infertile ejaculates compared with normozoospermic males.

Hum Fertil (Camb). 2020 Dec;23(4):246-255.

IF: 2.767

58. Frank K, Bana NÁ, Bleier N, Sugár L, Nagy J, Wilhelm J, Kálmán Z, Barta E, Orosz L, Horn P, Stéger V.: Mining the red deer genome (CerEla1.0) to develop X-and Y-chromosome-linked STR markers.

PLoS One. 2020 Nov 23;15(11):e0242506.

IF: 3.24

59. Mokánszki A, Chang Chien YC, Mótyán JA, Juhász P, Bádon ES, Madar L, Szegedi I, Kiss C, Méhes G.: Novel RB1 and MET Gene Mutations in a Case with Bilateral Retinoblastoma Followed by Multiple Metastatic Osteosarcoma.

Diagnostics (Basel). 2020 Dec 25;11(1):28.

IF: 3.706

60. **Ambrus V, Hoffka G, Fuxreiter M.**: Asymmetric dynamic coupling promotes alternative evolutionary pathways in an enzyme dimer.
Sci Rep. 2020 Nov 2;10(1):18866.
IF: 4.379
61. Daniel B, Czimmerer Z, Halasz L, **Boto P, Kolostyak Z, Poliska S**, Berger WK, Tzerpos P, Nagy G, Horvath A, Hajas G, Cseh T, Nagy A, Sauer S, Francois-Deleuze J, Szatmari I, Bacsi A, Nagy L.: The transcription factor EGR2 is the molecular linchpin connecting STAT6 activation to the late, stable epigenomic program of alternative macrophage polarization
Genes Dev. 2020 Oct 15;34(21-22):1474-92.
IF: 11.361
62. Veréb Z, Mázló A, Szabó A, **Póliska S**, Kiss A, Litauszky K, Koncz G, Boda Z, Rajnavölgyi É, Bácsi A.: Vessel Wall-Derived Mesenchymal Stromal Cells Share Similar Differentiation Potential and Immunomodulatory Properties with Bone Marrow-Derived Stromal Cells.
Stem Cells Int. 2020 Oct 21;2020:8847038.
IF: 5.443
63. **Kalló G, Kunkli B, Győri Z, Szilvássy Z, Csősz É, Tőzsér J.**: Compounds with Antiviral, Anti-Inflammatory and Anticancer Activity Identified in Wine from Hungary's Tokaj Region via High Resolution Mass Spectrometry and Bioinformatics Analyses.
Int J Mol Sci. 2020 Dec 15;21(24):9547.
IF: 5.923
64. **Fuxreiter M.**: Classifying the Binding Modes of Disordered Proteins.
Int. J. Mol. Sci. 21 (22), 8615-8623, 2020.
IF: 5.923
65. **Fuxreiter M.**: Fuzzy protein theory for disordered proteins.
Biochem. Soc. Trans. 48 (6), 2557-2564, 2020.
IF: 5.407
66. 43. Gál, Z., Gézsi, A., Molnár, V., Nagy, A., Kiss, A., Sultész, M., Csoma, Z., Tamási, L., Gálffy, G., **Bálint, B., Póliska, S.**, Szalai, C.: Investigation of the Possible Role of Tie2 Pathway and TEK Gene in Asthma and Allergic Conjunctivitis.
Front Genet. 11 1-10, 2020.
IF: 4.599

Total IF: 335.037