

**Publications of Department of Biochemistry and Molecular Biology
in 2021**

1. Révész Á, Milley MG, Nagy K, Szabó D, **Kalló G, Csósz É**, Vékey K, Drahos L.: Tailoring to Search Engines: Bottom-Up Proteomics with Collision Energies Optimized for Identification Confidence.
J Proteome Res. 2021 Jan 1;20(1):474-484. doi: 10.1021/acs.jproteome.0c00518. Epub 2020 Dec 7.
IF: 4.466 (2020)
2. Hardenberg MC, Sinnige T, Casford S, Dada ST, Poudel C, Robinson EA, **Fuxreiter M**, Kaminski CF, Kaminski Schierle GS, Nollen EAA, Dobson CM, Vendruscolo M.: Observation of an α -synuclein liquid droplet state and its maturation into Lewy body-like assemblies.
J Mol Cell Biol. 2021 Aug 4;13(4):282-294. doi: 10.1093/jmcb/mjaa075.
IF: 6.216 (2020)
3. **Szabó A, Toldi V, Gazda LD**, Demcsák A, **Tózsér J**, Sahin-Tóth M.: Defective binding of SPINK1 variants is an uncommon mechanism for impaired trypsin inhibition in chronic pancreatitis.
J Biol Chem. 2021 Jan-Jun;296:100343. doi: 10.1016/j.jbc.2021.100343. Epub 2021 Jan 28.
IF: 5.157 (2020)
4. Gianni S, Freiburger MI, Jemth P, Ferreira DU, Wolynes PG, **Fuxreiter M.**: Fuzziness and Frustration in the Energy Landscape of Protein Folding, Function, and Assembly.
Acc Chem Res. 2021 Mar 2;54(5):1251-1259. doi: 10.1021/acs.accounts.0c00813. Epub 2021 Feb 8.
IF: 22.384 (2020)
5. Borbély A, Pethő L, Szabó I, Al-Majidi M, Steckel A, Nagy T, Kéki S, **Kalló G, Csósz É**, Mező G, Schlosser G.: Structural Characterization of Daunomycin-Peptide Conjugates by Various Tandem Mass Spectrometric Techniques.
Int J Mol Sci. 2021 Feb 6;22(4):1648. doi: 10.3390/ijms22041648.
IF: 5.923 (2020)
6. **Kassay N, Mótyán JA, Matúz K, Golda M, Tózsér J.**: Biochemical Characterization, Specificity and Inhibition Studies of HTLV-1, HTLV-2, and HTLV-3 Proteases.
Life (Basel). 2021 Feb 6;11(2):127. doi: 10.3390/life11020127.
IF: 3.817 (2020)
7. Douida A, **Batista F, Boto P**, Regdon Z, Robaszkiewicz A, Tar K.: Cells Lacking PA200 Adapt to Mitochondrial Dysfunction by Enhancing Glycolysis via Distinct Opal Processing.
Int J Mol Sci. 2021 Feb 5;22(4):1629. doi: 10.3390/ijms22041629.

IF: 5.923 (2020)

8. Kannan N, **Shanmuga Sundar S**, Balaji S, Anil Kumar Nv, Balasubramanian N.: Physiochemical characterization and toxicity assessment of colloidal mercuric formulation- 'Sivanar amirtham'.

Colloids Surf B Biointerfaces. 2021 Apr;200:111607. doi: 10.1016/j.colsurfb.2021.111607. Epub 2021 Feb 3.

IF: 5.268 (2020)

9. Szabó Z, **Hornýák L**, **Miskei M**, **Székvolgyi L**.: Two Targets, One Hit: new Anticancer Therapeutics to Prevent Tumorigenesis Without Cardiotoxicity.

Front Pharmacol. 2021 Feb 10;11:569955. doi: 10.3389/fphar.2020.569955. eCollection 2020.

IF: 5.810 (2020)

10. Mustachio LM, Chelariu-Raicu A, **Szekvolgyi L**, Roszik J.: Targeting KRAS in Cancer: Promising Therapeutic Strategies.

Cancers (Basel). 2021 Mar 10;13(6):1204. doi: 10.3390/cancers13061204.

IF: 6.639 (2020)

11. **Fige É**, Szendrei J, **Sós L**, Kraszewska I, Potor L, Balla J, **Szondy Z**.: Heme Oxygenase-1 Contributes to Both the Engulfment and the Anti-Inflammatory Program of Macrophages during Efferocytosis.

Cells. 2021 Mar 15;10(3):652. doi: 10.3390/cells10030652.

IF: 6.600 (2020)

12. Papp LA, Ács-Szabó L, **Póliska S**, Miklós I.: A modified culture medium and hyphae isolation method can increase quality of the RNA extracted from mycelia of a dimorphic fungal species.

Curr Genet. 2021 Apr 10. doi: 10.1007/s00294-021-01181-4. Online ahead of print.

IF: 3.886 (2020)

13. Ivanovics B, Gazsi G, Reining M, Berta I, **Poliska S**, Toth M, **Domokos A**, Nagy B Jr, Staszny A, Cserhati M, **Csoz E**, Bacsí A, Csenki-Bakos Z, Acs A, Urbanyi B, **Czimmerer Z**.: Embryonic exposure to low concentrations of aflatoxin B1 triggers global transcriptomic changes, defective yolk lipid mobilization, abnormal gastrointestinal tract development and inflammation in zebrafish.

J Hazard Mater. 2021 Aug 15;416:125788. doi: 10.1016/j.jhazmat.2021.125788. Epub 2021 Apr 2.

IF: 10.588 (2020)

14. Mázló A, Kovács R, Miltner N, Tóth M, Veréb Z, Szabó K, Bacskai I, Pázmándi K, Apáti Á, Bíró T, **Bene K**, Rajnavölgyi É, Bácsi A.: MSC-like cells increase ability of monocyte-derived dendritic cells to polarize IL-17-/IL-10-producing T cells via CTLA-4. *iScience*. 2021 Mar 15;24(4):102312. doi: 10.1016/j.isci.2021.102312. eCollection 2021 Apr 23.

IF: 5.458 (2020)

15. Tombácz D, Moldován N, Torma G, **Nagy T**, Hornyák Á, Csabai Z, Gulyás G, Boldogkői M, Jefferson VA, Zádori Z, Meyer F, Boldogkői Z.: Dynamic Transcriptome Sequencing of Bovine Alpha herpesvirus Type 1 and Host Cells Carried Out by a Multi-Technique Approach. *Front Genet*. 2021 Apr 7;12:619056. doi: 10.3389/fgene.2021.619056. eCollection 2021.

IF: 4.599 (2020)

16. Molnár T, Pallagi P, Tél B, **Király R**, Csoma E, Jenei V, Varga Z, Gogolák P, Odile Hueber A, Máté Z, Erdélyi F, Szabó G, Pettkó-Szandtner A, Bácsi A, Virág L, Maléth J, Koncz G.: Caspase-9 acts as a regulator of necroptotic cell death. *FEBS J*. 2021 Apr 25. doi: 10.1111/febs.15898. Online ahead of print.

IF: 5.542 (2020)

17. Nagy NA, Rácz R, Rimington O, **Póliska S**, Orozco-terWengel P, Bruford MW, Barta Z.: Draft genome of a biparental beetle species, *Lethrus apterus*. *BMC Genomics*. 2021 Apr 26;22(1):301. doi: 10.1186/s12864-021-07627-w.

IF: 3.969 (2020)

18. Jenei A, **Kalló G**, Dajnoki Z, Gáspár K, Szegedi A, Kapitány A, **Csősz É.**: Detection of Antimicrobial Peptides in Stratum Corneum by Mass Spectrometry. *Int J Mol Sci*. 2021 Apr 19;22(8):4233. doi: 10.3390/ijms22084233.

IF: 5.923 (2020)

19. Carlsen H, Ebihara K, Kuwata NH, Kuwata K, **Aydemir G**, **Rühl R**, Blomhoff R.: A transgenic reporter mouse model for in vivo assessment of retinoic acid receptor transcriptional activation. *Int J Vitam Nutr Res*. 2021 Apr 30;1-13. doi: 10.1024/0300-9831/a000705. Online ahead of print.

IF: 1.784 (2020)

20. **Kumar A**, **Doan VM**, **Kunkli B**, **Csősz É.**: Construction of Unified Human Antimicrobial and Immunomodulatory Peptide Database and Examination of Antimicrobial and Immunomodulatory Peptides in Alzheimer's Disease Using Network Analysis of Proteomics Datasets.

Front Genet. 2021 Apr 28;12:633050. doi: 10.3389/fgene.2021.633050. eCollection 2021.

IF: 4.599 (2020)

21. Pethó D, Hendrik Z, Nagy A, Beke L, **Patsalos A, Nagy L, Póliska S**, Méhes G, Tóth C, Potor L, Eaton JW, Jacob HS, Balla G, Balla J, Gáll T.: Heme cytotoxicity is the consequence of endoplasmic reticulum stress in atherosclerotic plaque progression. *Sci Rep.* 2021 May 17;11(1):10435. doi: 10.1038/s41598-021-89713-3.
IF: 4.379 (2020)

22. Matta C, Lewis R, Fellows C, Diszhazi G, Almassy J, Miosge N, Dixon J, Uribe MC, May S, **Poliska S**, Barrett-Jolley R, Fodor J, Szentesi P, Hajdú T, Keller-Pinter A, Henslee E, Labeed FH, Hughes MP, Mobasher A.: Transcriptome-based screening of ion channels and transporters in a migratory chondroprogenitor cell line isolated from late-stage osteoarthritic cartilage. *J Cell Physiol.* 2021 May 18. doi: 10.1002/jcp.30413. Online ahead of print.
IF: 6.384 (2020)

23. Patsalos A, **Tzerpos P**, Wei X, **Nagy L.**: Myeloid cell diversification during regenerative inflammation: Lessons from skeletal muscle. *Semin Cell Dev Biol.* 2021 May 18:S1084-9521(21)00114-2. doi: 10.1016/j.semcdb.2021.05.005. Online ahead of print.
IF: 7.727 (2020)

24. Nagy NA, Németh Z, Juhász E, **Póliska S**, Rácz R, Kiss J, Kosztolányi A, Barta Z.: Inotocin, a potential modulator of reproductive behaviours in a biparental beetle, *Lethrus apterus*. *J Insect Physiol.* 2021 Jul;132:104253. doi: 10.1016/j.jinsphys.2021.104253. Epub 2021 May 20.
IF: 2.354 (2020)

25. Töröcsik D, Fazekas F, **Póliska S**, Gregus A, Janka EA, Dull K, Szegedi A, Zouboulis CC, Kovács D.: Epidermal Growth Factor Modulates Palmitic Acid-Induced Inflammatory and Lipid Signaling Pathways in SZ95 Sebocytes. *Front Immunol.* 2021 May 6;12:600017. doi: 10.3389/fimmu.2021.600017. eCollection 2021.
IF: 7.561 (2020)

26. **Boto P, Gerzsenyi TB, Lengyel A, Szunyog B, Szatmari I.**: Zbtb46-dependent altered developmental program in embryonic stem cell-derived blood cell progenitors. *Stem Cells.* 2021 May 31. doi: 10.1002/stem.3424. Online ahead of print.
IF: 6.277 (2020)

27. Diós Á, Elek R, Szabó I, Horváth S, Gyimesi J, **Király R**, Werkstetter K, Koletzko S, **Fésüs L**, Korponay-Szabó IR.: Gamma-gliadin specific celiac disease antibodies recognize p31-43 and p57-68 alpha gliadin peptides in deamidation related manner as a result of cross-reaction. *Amino Acids.* 2021 Jul;53(7):1051-1063. doi: 10.1007/s00726-021-03006-7. Epub 2021 May 31.

IF: 3.520 (2020)

28. László B, Antal L, Gyöngyösi E, Szalmás A, **Póliska S**, Veress G, Kónya J.: Coordinated action of human papillomavirus type 16 E6 and E7 oncoproteins on competitive endogenous RNA (ceRNA) network members in primary human keratinocytes.

BMC Cancer. 2021 Jun 7;21(1):673. doi: 10.1186/s12885-021-08361-y.

IF: 4.430 (2020)

29. **Fuxreiter M**, Vendruscolo M.: Generic nature of the condensed states of proteins.

Nat Cell Biol. 2021 Jun;23(6):587-594. doi: 10.1038/s41556-021-00697-8. Epub 2021 Jun 9.

IF: 28.824 (2020)

30. **Al-Zaeed N, Budai Z, Szondy Z, Sarang Z**.: TAM kinase signaling is indispensable for proper skeletal muscle regeneration in mice.

Cell Death Dis. 2021 Jun 12;12(6):611. doi: 10.1038/s41419-021-03892-5.

IF: 8.469 (2020)

31. Skrapits K, Sárvári M, Farkas I, Göcz B, Takács S, Rumppler É, Váczi V, Vastagh C, Rác G, Matolcsy A, Solymosi N, **Póliska S**, Tóth B, Erdélyi F, Szabó G, Culler MD, Allet C, Cotellessa L, Prévot V, Giacobini P, Hrabovszky E.: The cryptic gonadotropin-releasing hormone neuronal system of human basal ganglia.

Elife. 2021 Jun 15;10:e67714. doi: 10.7554/eLife.67714.

IF: 8.140 (2020)

32. Hsu VM, Kozák E, Li Q, Bocskai M, Schlesinger N, Rosenthal A, McClure ST, Kovács L, **László BB**, Szamosi S, Szücs G, Carns M, Aren K, Goldberg I, Váradi A, Varga J.: Inorganic pyrophosphate is reduced in patients with systemic sclerosis.

Rheumatology (Oxford). 2021 Jun 21;keab508. doi: 10.1093/rheumatology/keab508. Online ahead of print.

IF: 7.580 (2020)

33. **Arianti R, Vinnai BÁ, Tóth BB, Shaw A, Csósz É, Vámos A**, Gyóry F, Fischer-Posovszky P, Wabitsch M, **Kristóf E, Fésüs L**.: ASC-1 transporter-dependent amino acid uptake is required for the efficient thermogenic response of human adipocytes to adrenergic stimulation.

FEBS Lett. 2021 Aug;595(16):2085-2098. doi: 10.1002/1873-3468.14155. Epub 2021 Jul 23.

IF: 4.124 (2020)

34. Jankó L, Kovács T, Laczik M, Sári Z, Ujlaki G, Kis G, Horváth I, Antal M, Vígh L, **Bálint BL**, Uray K, Bai P.: Silencing of Poly(ADP-Ribose) Polymerase-2 Induces Mitochondrial Reactive Species Production and Mitochondrial Fragmentation.

Cells. 2021 Jun 4;10(6):1387. doi: 10.3390/cells10061387.

IF: 6.600 (2020)

35. Tóth F, **Tózsér J**, Hegedűs C.: Effect of Inducible BMP-7 Expression on the Osteogenic Differentiation of Human Dental Pulp Stem Cells.
Int J Mol Sci. 2021 Jun 8;22(12):6182. doi: 10.3390/ijms22126182.
IF: 5.923 (2020)
36. **Mótyán JA**, **Miczi M**, Oroszlan S, **Tózsér J**.: Specificity of the HIV-1 Protease on Substrates Representing the Cleavage Site in the Proximal Zinc-Finger of HIV-1 Nucleocapsid Protein.
Viruses. 2021 Jun 8;13(6):1092. doi: 10.3390/v13061092.
IF: 5.048 (2020)
37. **Miczi M**, Diós Á, **Bozóki B**, **Tózsér J**, **Mótyán JA**.: Development of a Bio-Layer Interferometry-Based Protease Assay Using HIV-1 Protease as a Model.
Viruses-Basel. 2021 Jun 21;13(6):1183. doi: 10.3390/v13061183.
IF: 5.048 (2020)
38. **Arianti R**, Ariani NL, Muhammad AA, Sadewa AH, Farmawati A, Sunarti, Hastuti P, **Kristóf E**.: Influence of Single Nucleotide Polymorphism of ENPP1 and ADIPOQ on Insulin Resistance and Obesity: A Case-Control Study in a Javanese Population.
Life (Basel). 2021 Jun 11;11(6):552. doi: 10.3390/life11060552.
IF: 3.817 (2020)
39. Balla J, Potor L, Hendrik Z, Patsalos A, Katona É, Méhes G, **Póliska S**, **Csósz É**, **Kalló G**, Komáromi I, Combi Z, Posta N, Sikura KÉ, Pethő D, Oros M, Vereb G, Tóth C, Gergely P, Nagy L, Balla G.: OXIDATION OF HEMOGLOBIN DRIVES A PRO-ATHEROGENIC POLARIZATION OF MACROPHAGES IN HUMAN ATHEROSCLEROSIS.
Antioxid Redox Signal. 2021 Jul 16. doi: 10.1089/ars.2020.8234. Online ahead of print.
IF: 8.401 (2020)
40. **Kalló G**, Varga AK, Szabó J, Emri M, **Tózsér J**, Csutak A, **Csósz É**.: Reduced Level of Tear Antimicrobial and Immunomodulatory Proteins as a Possible Reason for Higher Ocular Infections in Diabetic Patients.
Pathogens. 2021 Jul 12;10(7):883. doi: 10.3390/pathogens10070883.
IF: 3.492 (2020)
41. **Bene K**, Halasz L, **Nagy L**.: Transcriptional repression shapes the identity and function of tissue macrophages.
FEBS Open Bio. 2021 Aug 6. doi: 10.1002/2211-5463.13269. Online ahead of print.
IF: 2.693 (2020)

42. Kovács EG, Alatshan A, Budai MM, **Czimmerer Z**, Bíró E, Benkő S.: Caffeine Has Different Immunomodulatory Effect on the Cytokine Expression and NLRP3 Inflammasome Function in Various Human Macrophage Subpopulations.

Nutrients. 2021 Jul 14;13(7):2409. doi: 10.3390/nu13072409.

IF: 5.717 (2020)

43. **Toldi V, Kassay N, Szabó A.**: Missense PNLIP mutations impeding pancreatic lipase secretion cause protein misfolding and endoplasmic reticulum stress.

Pancreatology. 2021 Aug 4:S1424-3903(21)00522-6. doi: 10.1016/j.pan.2021.07.008. Online ahead of print.

IF: 3.996 (2020)

44. **Miskei M, Horváth A, Viola L, Varga L, Nagy É, Feró O, Karányi Z**, Roszik J, Miskey C, Ivics Z, **Székvölgyi L.**: Genome-wide mapping of binding sites of the transposase-derived SETMAR protein in the human genome.

Comput Struct Biotechnol J. 2021 Jul 14;19:4032-4041. doi: 10.1016/j.csbj.2021.07.010. eCollection 2021.

IF: 7.271 (2020)

45. **Tzerpos P**, Daniel B, **Nagy L.**: Global Run-on Sequencing (GRO-Seq).

Methods Mol Biol. 2021;2351:25-39. doi: 10.1007/978-1-0716-1597-3_2.

IF: 1.17 (2020)

46. Vendruscolo M, **Fuxreiter M.**: Sequence determinants of the aggregation of proteins within condensates generated by liquid-liquid phase separation.

J Mol Biol. 2021 Aug 12:167201. doi: 10.1016/j.jmb.2021.167201. Online ahead of print.

IF: 5.469 (2020)

47. Serrano-Solano, B., Föll, M., Gallardo-Alba, C., Erxleben, A., Rasche, H., Hiltemann, S., Fahrner, M., Dunning, M., Schulz, M., **Scholtz, B.**, Clements, D., Nekrutenko, A., Batut, B., Grüning, B.: Fostering Accessible Online Education Using Galaxy as an e-learning Platform. *PLoS Comput. Biol.* [Epub ahead of print] 2021.

IF: 4.475 (2020)

48. Shaw, A., **Szatmári-Tóth, M.**, Csomós, I., Mocsár, G., **Balajthy, Z.**, Győry, F., **Kristóf, E.**, **Fésüs, L.**: Mitophagy is downregulated upon thermogenic stimulus in human beige adipocytes.

FEBS Open Bio. 11 (S1), 9, 2021.

IF: 2.693 (2020)

49. Bödör, C., Kotmayer, L., László, T., Takács, F., Barna, G., Kiss, R., Sebestyén, E., **Nagy, T.**, Hegyi, L., Mikala, G., Fekete, S., Farkas, P., Balogh, A., Masszi, T., Demeter, J., Weisinger, J., Alizadeh, H., Kajtár, B., Kohl, Z., Szász, R., Gergely, L., Gurbity Pálfi, T.,

Sulák, A., Kollár, B., Egyed, M., Plander, M., Rejtő, L., Szerafin, L., Ilonczai, P., Tamáska, P., Pettendi, P., Lévai, D., Schneider, T., Sebestyén, A., Csermely, P., Matolcsy, A., Mátrai, Z., Alpár, D.: Screening and monitoring of the BTK C481S mutation in a real-world cohort of patients with relapsed/refractory chronic lymphocytic leukaemia during ibrutinib therapy. *Br. J. Haematol.* 194 (2), 355-364, 2021.

IF: 6.998 (2020)

50. Szabó, K., Miskei, M., Farkas, I., Dombrádi, V.: The phosphatome of opportunistic pathogen *Candida* species.

Fungal Biology Reviews. 35 40-51, 2021.

IF: 4.706 (2020)

51. Freiberger, M., Wolynes, P., Ferreira, D., **Fuxreiter, M.**: Frustration in Fuzzy Protein Complexes Leads to Interaction Versatility.

J. Phys. Chem. B. 125 (10), 2513-2520, 2021.

IF: 2.991 (2020)

52. **Gargya, P., Bálint, B.**: Histological Grade of Endometrioid Endometrial Cancer and Relapse Risk Can Be Predicted with Machine Learning from Gene Expression Data.

Cancers (Basel). 13 (17), 1-16, 2021.

IF: 6.639 (2020)

53. **Shaw, A., Bartáné Tóth, B., Király, R., Arianti, R., Csomós, I., Póliska, S., Vámos, A., Korponay-Szabó, I., Bacsó, Z., Győry, F., Fésüs, L., Kristóf, E.**: Irisin stimulates the release of CXCL1 from differentiating human subcutaneous and deep-neck derived adipocytes via upregulation of NF[κ]B pathway.

Front. Cell. Dev. Biol. [Epub ahead of print] 1-19, 2021.

IF: 6.684 (2020)

54. Vidács DL, Veréb Z, Bozó R, Flink LB, Polyánka H, Németh IB, **Póliska S**, Papp BT, Manczinger M, Gáspár R, Mirdamadi S, Kemény L, Bata-Csörgő Z.: Phenotypic plasticity of melanocytes derived from human adult skin.

Pigment Cell Melanoma Res. 2021 Aug 31. doi: 10.1111/pcmr.13012. Online ahead of print.

IF: 4.693 (2020)

Total IF: 328.844 (2020)