

## Enzimológiai Intézet 2011-ben megjelent publikációi

Pécsi I Szabó JE Adams SD Simon I Sellers JR Vértessy BG Tóth J

Nucleotide pyrophosphatase employs a P-loop-like motif to enhance catalytic power and NDP/NTP discrimination.

PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA 108(35):14437-42.: pp. 14437-14442. (2011) IF: 9.771

Oláh J, Vincze O, Virók D, Simon D, Bozsó Z, Tökési N, Horváth I, Hlavanda E, Kovács J, Magyar A, Szűcs M, Orosz F, Penke B, Ovádi J. Interactions of pathological hallmark proteins: Tubulin polymerization promoting protein/p25,  $\beta$ -amyloid and  $\alpha$ -synuclein. JOURNAL OF BIOLOGICAL CHEMISTRY 286:(39) pp. 34088-34100. (2011) IF: 5.328

Unbinding of hyaluronan accelerates the enzymatic activity of bee hyaluronidase.

Iliás A, Liliom K, Greiderer-Kleinlercher B, Reitinger S, Lepperdinger G.

J Biol Chem. 2011 Oct 14;286(41):35699-707. Epub 2011 Aug 12. IF: 5.328

Dobó, J., Major, B., Kékesi, K.A., Szabó, I., Megyeri, M., Hajela, K., Juhász, G., Závodszy, P. and Gál, P. (2011) Cleavage of Kininogen and Subsequent Bradykinin Release by the Complement Component: Mannose-Binding Lectin-Associated Serine Protease (MASP)-1 PLoS ONE 6(5): e20036. doi:10.1371/journal.pone.0020036 IF: 4.411

Le Saux O, Fülöp K, Yamaguchi Y, Iliás A, Szabó Z, Brampton CN, Pomozi V, Huszár K, Arányi T and Váradi A (2011)

Expression and In Vivo Rescue of Human ABCC6 Disease-Causing Mutants in Mouse Liver. PLoS ONE 6, e24738. IF.: 4.351

Kondás K, Szláma G, Nagy A, Trexler M, Patthy L (2011) Biological functions of the WAP domain-containing multidomain proteins WFIKKN1 and WFIKKN2. Biochem Soc Trans. 39(5):1416-20. IF: 3.989

Nucleotide promiscuity of 3-phosphoglycerate kinase is in focus: implications for the design of better anti-HIV analogues (Kiemelt publikáció: „HOT-PAPER”-nek minősített)

Varga, A., Chaloin, L., Sági, Gy., Sendula, R., Gráczer, É., Liliom, K., Závodszy, P., Lionne, C. & Vas, M.

Molecular Biosystems (2011) 7, 1863–1873 IF:3.825

Buday L, Sipeki S

Isoenzyme Selective Phosphoinositide 3-Kinase Inhibition: What do the Stones Kill?

CURRENT SIGNAL TRANSDUCTION THERAPY 6:(3) pp. 405-410. (2011) IF: 0,682

Dynamic protein-DNA recognition: beyond what can be seen.

Fuxreiter M, Simon I, Bondos S.

Trends Biochem Sci. 2011 Aug; 36(8):415-23. Epub 2011 May 27. Review. IF: 10.364

Tompa P (2011)

Unstructural biology coming of age. *Curr Opin Struc Biol* 21, 419-25. IF.: 9.903

Hegyi H, Kalmar L, Horvath T and Tompa P (2011)

Verification of alternative splicing variants based on domain integrity, truncation length and intrinsic protein disorder. *Nucleic Acids Res* **39**, 1208-19. IF.: 7.836

Wu S, Szilagyi A and Zhang Y (2011) [21827953]  
Improving protein structure prediction using multiple sequence-based contact predictions.  
*Structure* **19**, 1182-91 IF:6.337

Erdélyi P, Borsos E, Takács-Vellai K, Kovács T, Kovács AL, Sigmond T, Hargitai B, Pásztor L, Sengupta T, Dengg M, Pécsi I, Tóth J, Nilsen H, Vertessy BG, Vellai T  
Shared developmental roles and transcriptional control of autophagy and apoptosis in *Caenorhabditis elegans*.  
JOURNAL OF CELL SCIENCE 124:(Pt 9) pp. 1510-1518. (2011) IF: 6.290

The phospholipase A1 activity of lysophospholipase A-I links platelet activation to LPA production during blood coagulation.  
Bolen AL, Naren AP, Yarlagadda S, Beranova-Giorgianni S, Chen L, Norman D, Baker DL, Rowland MM, Best MD, Sano T, Tsukahara T, Liliom K, Igarashi Y, Tigyi G.  
J Lipid Res. 2011 May;52(5):958-70. Epub 2011 Mar 9. IF: 6.115

Neonatal FcR overexpression boosts humoral immune response in transgenic mice.  
Cervenak J, Bender B, Schneider Z, Magna M, Carstea BV, Liliom K, Erdei A, Bosze Z, Kacs Kovics I.  
J Immunol. 2011 Jan 15;186(2):959-68. Epub 2010 Dec 8. IF: 5,745

Proteins with complex architecture as potential targets for drug design: a case study of *Mycobacterium tuberculosis*.  
Mészáros B, Tóth J, Vértessy BG, Dosztányi Z, Simon I.  
PLoS Comput Biol. 2011 Jul; 7 (7):e1002118. Epub 2011 Jul 21. IF: 5.515

A spring loaded release mechanism regulates domain movement and catalysis in phosphoglycerate kinase  
Zerrad, L., Merli, A., Schröder, G.F., Varga, A., Gráczer, É., Pernot, P., Round, A., Vas, M. & Bowler, M.W.  
= Journal of Biological Chemistry (2011) 286 (No 16.), 14040-14048 IF: 5.328

Jürgensen HJ, Madsen DH, Ingvarsen S, Melander MC, Gårdsvoll H, Patthy L, Engelholm LH, Behrendt N.(2011)  
A novel functional role of collagen glycosylation: interaction with the endocytic collagen receptor uparap/ENDO180.  
J Biol Chem. 286(37):32736-48. IF: 5.328

Harmat V, Domokos K, Menyhard DK, Pallo A, Szeltner Z, Szamosi I, Beke-Somfai T, Naray-Szabo G, Polgar L.  
Structure and catalysis of acylaminoacyl peptidase: closed and open subunits of a dimer oligopeptidase. *Journal of Biological Chemistry* (2011), 286:1987-98. IF: 5.328

Rantalainen KI, Eskelin K, Tompa P and Mäkinen K (2011)  
Structural Flexibility Allows the Functional Diversity of Potyvirus Genome-Linked Protein Vpg. *J Virol* **85**, 2449-57. IF.: 5.189

- Szentpetery Z, Szakacs G, Bojjireddy N, Tai A and Balla T (2011)  
Genetic and functional studies of phosphatidyl-inositol 4-kinase type III  
Biochim Biophys Acta 1811:476-483 IF: 5.084
- Brampton C, Yamaguchi Y, Vanakker O, Van Laer L, Chen LH, Thakore M, De Paepe A, Pomozi V, Szabó PT, Martin L, Váradi A and Le Saux O (2011)  
Vitamin K does not prevent soft tissue mineralization in a mouse model of pseudoxanthoma elasticum. Cell Cycle 10, 1810-20. IF: 4.999
- Orosz F, Ovádi J. PROTEINS WITHOUT 3D STRUCTURE: definition, detection and beyond. BIOINFORMATICS 27:(11) pp. 1449-1454. (2011) IF: 4.877
- Vértessy BG, Orosz F. [From "fluctuation fit" to "conformational selection": evolution, rediscovery, and integration of a concept.](#) BIOESSAYS 33(1):pp. 30-4. (2011) IF: 4.479
- Lanyi A, Barath M, Peterfi Z, Bogel G, Orient A, Simon T, Petrovszki E, Kis-Toth K, Sirokmany G, Rajnavolgyi E, Terhorst C, Buday L, Geiszt M.  
The Homolog of the Five SH3-Domain Protein (HOPI/SH3PXD2B) Regulates Lamellipodia Formation and Cell Spreading.  
PLOS ONE 6:(8) Paper e23653. (2011) IF: 4.411
- Bozóky Z, Róna G, Klement E, Medzihradzky KF, Merényi G, Vértessy BG, Friedrich P  
Calpain-Catalyzed Proteolysis of Human dUTPase Specifically Removes the Nuclear Localization Signal Peptide.  
PLOS ONE 6:(5) p. e19546. Paper e28428. (2011) IF: 4.411
- Szabó V, Muskotál A, Tóth B, Mihovilovic MD, Vonderviszt F (2011) Construction of a xylanase A variant capable of polimerization.  
PLOS One 6, e25388. IF: 4.411
- Than NG, Romero R, Meiri H, Erez O, Xu Y, Tarquini F, Barna L, Szilagyi A, Ackerman R, Sammar M, Fule T, Karaszi K, Kovalszky I, Dong Z, Kim CJ, Zavodszky P, Papp Z and Gonen R. (2011) PP13, maternal ABO blood groups and the risk assessment of pregnancy complications. PLoS One 6: e21564 IF: 4.411
- Scheich C, Szabadka Z, Vértessy B, Pütter V, Grolmusz V and Schade M (2011) [22164290]  
Discovery of novel MDR-Mycobacterium tuberculosis inhibitor by new FRIGATE computational screen.  
PLOS ONE 6, e28428 IF: 4.411
- Ovádi J. Moonlighting proteins in neurological disorders. IUBMB LIFE 63:(7) pp. 453-456. (2011) IF: 4.251
- Hazy E, Bokor M, Kalmar L, Gelencser A, Kamasa P, Han KH, Tompa K and Tompa P (2011)  
Distinct Hydration Properties of Wild-Type and Familial Point Mutant A53T of  $\alpha$ -Synuclein Associated with Parkinson Disease. Biophys J 101, 2260-6. IF: 4.218

Szilágyi A, Zhang Y, Závodszy P. (2011) Intra-Chain 3D Segment Swapping Spawns the Evolution of New Multidomain Protein Architectures.  
J Mol Biol. 415, 221-35 IF:4.008

Atomic level description of the Domain Closure in a Dimeric Enzyme: *Thermus thermophilus* 3-Isopropylmalate Dehydrogenase  
Gráczér, É., Merli, A., Singh, R.K., Karuppasamy, M., Závodszy, P., Weiss, M.S. & Vas, M.  
= Molecular Biosystems (2011) 7, 1646–1659 IF:3.825

Szabó Z, Váradi A, Li Q and Uitto J (2011)  
ABCC6 does not transport adenosine - Relevance to pathomechanism of pseudoxanthoma elasticum.  
Mol Genet Metab 104(3):421. IF.: 3.539

Brózik A, Hegedüs C, Erdei Z, Hegedus T, Özvegy-Laczka C, Szakács G and Sarkadi B (2011)  
Tyrosine kinase inhibitors as modulators of ATP binding cassette multidrug transporters: substrates, chemosensitizers or inducers of acquired multidrug resistance?  
Expert Opin Drug Met 7, 623-42. IF.: 3.374

Zotter A, Bodor A, Oláh J, Hlavanda E, Orosz F, Perczel A, Ovádi J. Disordered TPPP/P25 Binds GTP and Displays Mg(2+)-Dependent Gtpase Activity. FEBS LETTERS 585:(5) pp. 803-808. (2011) IF: 3.601

Essential Role of the Metal-ion in the IPM-Assisted Domain Closure of 3-Isopropylmalate Dehydrogenase  
Gráczér, É., Konarev, P.V. Szimler, T., Bacsó, A., Bodonyi, A., Svergun, D.I., Závodszy, P. & Vas, M.  
= FEBS Lett. (2011) 585, 3297-3302 IF: 3.601

Telbisz A, Hegedüs C, Ozvegy-Laczka C, Goda K, Várady G, Takáts Z, Szabó E, Sorrentino BP, Váradi A and Sarkadi B (2011)  
Antibody binding shift assay for rapid screening of drug interactions with the human ABCG2 multidrug transporter.  
Eur J Pharm Sci 45(1-2):101-9. IF.: 3.291

Zotter A, Oláh J, Hlavanda E, Bodor A, Perczel A, Szigeti K, Fidy J, Ovádi J. Zn(2+)-induced rearrangement of the disordered TPPP/p25 affects its microtubule assembly and GTPase activity. BIOCHEMISTRY 50:(44) pp. 9568-9578. (2011) IF: 3.226

Szasz CS, Alexa A, Toth K, Rakacs M, Langowski J and Tompa P (2011)  
Protein disorder prevails under crowded conditions.  
*Biochemistry-us* **50**, 5834-44. IF.: 3.226

Kardos J, Micsonai A, Pál-Gábor H, Petrik É, Gráf L, Kovács J, Lee YH, Naiki H and Goto Y (2011) [21388222]  
Reversible heat-induced dissociation of  $\beta$ 2-microglobulin amyloid fibrils.  
*Biochemistry-us* **50**, 3211-20 IF:3.226

Kocsis, J., Mészáros, T., Madaras, B., Tóth, E.K., Kamondi, S., Gál, P., Varga, L., Prohászka, Z. and Füst, G. (2011) [High levels of acute phase proteins and soluble 70 kDa heat shock proteins are independent and additive risk factors for mortality in colorectal cancer.](#) Cell Stress Chaperon. 16, 49-55 IF: 3.162

Active site residue involvement in monoamine or diamine oxidation catalysed by pea seedling amine oxidase.  
Di Paolo ML, Lunelli M, Fuxreiter M, Rigo A, Simon I, Scarpa M.  
FEBS J. 2011 Apr;278(8):1232-43. Epub 2011 Mar 1. IF: 3.129

Bekesi A, Pukancsik M, Haasz P, Felfoldi L, Leveles I, Muha V, Hunyadi-Gulyas E, Erdei A, Medzihradzky KF, Vertessy BG  
Association of RNA with the uracil-DNA-degrading factor has major conformational effects and is potentially involved in protein folding.  
FEBS JOURNAL 278:(2) pp. 295-315. (2011) IF: 3.129

The expanding view of protein-protein interactions: complexes involving intrinsically disordered proteins.  
Mészáros B, Simon I, Dosztányi Z.  
Phys Biol. 2011 Jun;8(3):035003. Epub 2011 May 13. Review. IF: 3.109

Orosz F. [Apicomplexan apicortins possess a long disordered N-terminal extension.](#) INFECT GENET EVOL. 11(5):pp.1037-44. (2011) IF: 3.086

Váradi A, Szabó Z, Pomozi V, de Boussac H, Fülöp K and Arányi T (2011)  
ABCC6 as a target in pseudoxanthoma elasticum.  
Curr Drug Targets 12, 671-82. IF.: 3.061

Orosz F, Oláh J, Ovádi J. Reappraisal of triosephosphate isomerase deficiency. EUROPEAN JOURNAL OF HAEMATOLOGY 86: pp. 265-267. (2011) IF: 2.785

Arányi T, Fülöp K, Symmons O, Pomozi V and Váradi A (2011)  
Predictable difficulty or difficulty to predict.  
Protein Sci 20, 1-3; IF.: 2.741

Tompa P and Rose GD (2011)  
The levinthal paradox of the interactome.  
Protein Sci 2011 Dec;20(12):2074-9. IF.: 2.741

Vincze O, Oláh J, Zádori D, Klivényi P, Vécsei L, Ovádi J. A new myelin protein, TPPP/p25, reduced in demyelinated lesions is enriched in cerebrospinal fluid of multiple sclerosis. BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS 409:(1) pp. 137-141. (2011) IF: 2.595

Fülöp K, Jiang Q, Wetering KV, Pomozi V, Szabó PT, Arányi T, Sarkadi B, Borst P, Uitto J and Váradi A (2011)  
ABCC6 does not transport vitamin K3-glutathione conjugate from the liver: Relevance to pathomechanisms of pseudoxanthoma elasticum.  
Biochem Bioph Res Co 415(3):468-71. IF.: 2.595

- Tamaki A, Ierano C, Szakacs G, Robey RW and Bates SE (2011)  
The controversial role of ABC transporters in clinical oncology.  
Essays Biochem. 50, 209-32. IF.: 2.029
- In-depth characterization and computational 3D reconstruction of flagellar filament protein layer structure based on in situ spectroscopic ellipsometry measurements.  
Kozma P, Kozma D, Nemeth A, Jankovics H, Kurunczi S, Horvath R, Vonderviszt F, Fried M, Petrik P  
APPLIED SURFACE SCIENCE 257:(16) pp. 7160-7166. (2011) IF: 1.795
- Beinrohr, L., Murray-Rust, T.A., Dyksterhuis, L., Závodszy, P., Gál, P., Pike, R.N. and Wijeyewickrema, L.C. (2011) Serpins and the complement system.  
Methods Enzymol. 499, 55-75 IF: 1.626
- Merenyi G, Kovari J, Toth J, Takacs E, Zagyva I, Erdei A, Vertessy BG  
Cellular response to efficient dUTPase RNAi silencing in stable HeLa cell lines perturbs expression levels of genes involved in thymidylate metabolism.  
NUCLEOSIDES NUCLEOTIDES & NUCLEIC ACIDS 30:(6) pp. 369-390. (2011) IF: 1.132
- Szalai<sup>n</sup> Ágoston B, Kovács D, Tompa P and Perczel A (2011)  
Full backbone assignment and dynamics of the intrinsically disordered dehydrin ERD14.  
*Biomol Nmr Assign* 5, 189-93. IF.: 0.707
- Leveles I Róna G Zagyva I Bendes A Harmat V Vértessy BG  
Crystallization and preliminary crystallographic analysis of dUTPase from the 11 helper phage of *Staphylococcus aureus*.  
ACTA CRYSTALLOGRAPHICA SECTION F-STRUCTURAL BIOLOGY AND CRYSTALLIZATION COMMUNICATIONS 67:(11) pp. 1411-1413. (2011) IF: 0.563
- Schad E, Tompa P and Hegyi H (2011)  
The relationship between proteome size, structural disorder and organism complexity.  
*Genome Biol* 12, R120. IF.: 0
- Krause-Gruszczynska M, Boehm M, Rohde M, Tegtmeyer N, Takahashi S, Buday L, Oyarzabal OA, Backert S.  
The signaling pathway of *Campylobacter jejuni*-induced Cdc42 activation: Role of fibronectin, integrin beta1, tyrosine kinases and guanine exchange factor Vav2. CELL COMMUNICATION AND SIGNALING 9:(1) p. 32. (2011) IF: 0
- Khan S, Pozzo T, Megyeri M, Lindahl S, Sundin A, Turner C and Karlsson EN (2011) [21345211]  
Aglycone specificity of *Thermotoga neapolitana*  $\beta$ -glucosidase 1A modified by mutagenesis, leading to increased catalytic efficiency in quercetin-3-glucoside hydrolysis.  
*BMC Biochem* 12, 11 IF: 0
- Alinda Nagy, György Szláma, Eszter Szarka, Mária Trexler, László Bányai and László Patthy (2011)  
Reassessing Domain Architecture Evolution of Metazoan Proteins: Major Impact of Gene Prediction Errors. *Genes* 2(3), 449-501

Alinda Nagy, László Bányai and László Patthy (2011) Reassessing Domain Architecture Evolution of Metazoan Proteins: Major Impact of Errors Caused by Confusing Paralogs and Epitologs, *Genes* 2(3), 516-561

Alinda Nagy and Laszlo Patthy (2011) Reassessing Domain Architecture Evolution of Metazoan Proteins: The Contribution of Different Evolutionary Mechanisms. *Genes* 2(3), 578-598