

Seznam publikací ústavu v roce 2018:

Laborator biomolekulárního rozpoznávání – Bohdan Schneider

1. **Zahradnik J, Kolarova L, Parizkova H, Kolenko P, Schneider B.** Interferons type II and their receptors R1 and R2 in fish species: Evolution, structure, and function. *Fish Shellfish Immunol.* 2018 May 6. pii: S1050-4648(18)30265-1.
2. **Zahradnik J, Kolenko P, Palyzova A, Cerny J, Kolarova L, Kyslikova E, Maresova H, Grulich M, Nunvar J, Sulc M, Kyslik P, Schneider B.** The crystal structure of XdpB, the bacterial old yellow enzyme, in an FMN-free form. *PLoS One.* 2018 Apr 9; 13(4):e0195299.
3. **Zahradnik J, Nunvar J, Parizkova H, Kolarova L, Palyzova A, Maresova H, Grulich M, Kyslikova E, Kyslik P.** *Agrobacterium bohemicum* sp. nov. isolated from poppy seed wastes in central Bohemia. *Syst Appl Microbiol.* 2018 May; 41(3):184-190.
4. **Schneider B, Božikova P, Necasova I, Cech P, Svozil D, Cerny J.** A DNA structural alphabet provides new insight into DNA flexibility. *Acta Crystallogr D Struct Biol.* 2018 Jan 1; 74(Pt 1):52-64.
5. Palyzova A, **Zahradnik J, Maresova H, Sokolova L, Kyslikova E, Grulich M, Stepanek V, Rezanka T, Kyslik P.** Potential of the strain *Raoultella* sp. KDF8 for removal of analgesics. *Folia Microbiol (Praha).* 2018 May; 63(3):273-282.
6. **Fuertes G, Banterle N, Ruff KM, Chowdhury A, Pappu RV, Svergun DI, Lemke EA.** Comment on "Innovative scattering analysis shows that hydrophobic disordered proteins are expanded in water". *Science.* 2018 Aug 31; 361(6405). pii: eaau8230.

Laborator inženýrství vazebných proteinů - Petr Malý

1. Semeradtova A., Stofik M., **Vankova L., Maly P., Stanek O., Maly J.** Optical microchips based on high-affinity recombinant protein binders—Human serum albumin detection in urine. *Sensors and Actuators B: Chemical.* Volume 272, 1 November 2018, Pages 441–447.
2. **Hlavnickova M, Kuchar M, Osicka R, Vankova L, Petrokova H, Maly M, Cerny J, Arenberger P, Maly P.** ABD-Derived Protein Blockers of Human IL-17 Receptor A as Non-IgG Alternatives for Modulation of IL-17-Dependent Pro-Inflammatory Axis. *Int J Mol Sci.* 2018 Oct 9; 19(10). pii: E3089.
3. Skrlec K, Zadavec P, **Hlavnickova M, Kuchar M, Vankova L, Petrokova H, Krizova L, Cerny J, Berlec A, Maly P.** p19-Targeting ILP Protein Blockers of IL-23/Th-17 Pro-Inflammatory Axis Displayed on Engineered Bacteria of Food Origin. *Int J Mol Sci.* 2018 Jul 1; 19(7). pii: E1933.

Laboratoř strukturní biologie – Cyril Bařinka

1. **Kutil Z, Novakova Z, Meleshin M, Mikesova J, Schutkowski M, Barinka C.** Histone Deacetylase 11 Is a Fatty-Acid Deacylase. *ACS Chem Biol.* 2018 Mar 16; 13(3):685-693.
2. **Ptacek J, Nedvedova J, Navratil M, Havlinova B, Konvalinka J, Barinka C.** The calcium-binding site of human glutamate carboxypeptidase II is critical for dimerization, thermal stability, and enzymatic activity. *Protein Sci.* 2018 Sep; 27(9):1575-1584.

3. **Kutil Z, Skultetyova L**, Rauh D, Meleshin M, Snajdr I, **Novakova Z, Mikesova J, Pavlicek J**, Hadzima M, **Baranova P, Havlinova B**, Majer P, Schutkowski M, **Barinka C**. The unraveling of substrate specificity of histone deacetylase 6 domains using acetylome peptide microarrays and peptide libraries. *FASEB J*. 2018 Nov 29:fj201801680R.
4. Nakajima R, **Novakova Z**, Tueckmantel W, **Motlova L, Barinka C**, Kozikowski AP. 2-Amino adipic Acid-C(O)-Glutamate Based Prostate-Specific Membrane Antigen Ligands for Potential Use as Theranostics. *ACS Med Chem Lett*. 2018 Oct 24; 9(11):1099-1104.
5. Ray Banerejee S, Kumar V, Lisok A, Plyku D, **Novakova Z**, Wharram B, Brummet M, **Barinka C**, Hobbs RF, Pomper MG. Evaluation of ¹¹¹In-DOTA-5D3, a Surrogate SPECT Imaging Agent for Radioimmunotherapy of Prostate-Specific Membrane Antigen. *J Nucl Med*. 2018 Sep 20. pii: jnumed.118.214403.
6. Porter NJ, Shen S, **Barinka C**, Kozikowski AP, Christianson DW. Molecular Basis for the Selective Inhibition of Histone Deacetylase 6 by a Mercaptoacetamide Inhibitor. *ACS Med Chem Lett*. 2018 Nov 21;9(12):1301-1305.

Laboratoř struktury a funkce biomolekul – Jan Dohnálek

1. **Trundova M, Koval T**, Owens RJ, **Fejfarova K, Duskova J, Kolenko P, Dohnalek J**. Highly stable single-strand-specific 3'-nuclease/nucleotidase from *Legionella pneumophila*. *Int J Biol Macromol*. 2018 Jul 15; 114:776-787.
2. **Koval T, Dohnalek J**. Characteristics and application of S1-P1 nucleases in biotechnology and medicine. *Biotechnol Adv*. 2018 May - Jun; 36(3):603-612.
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5. Zahradnik J, **Kolenko P**, Palyzova A, Cerny J, Kolarova L, Kyslikova E, Maresova H, Grulich M, Nunvar J, Sulc M, Kyslik P, Schneider B. The crystal structure of XdpB, the bacterial old yellow enzyme, in an FMN-free form. *PLoS One*. 2018 Apr 9; 13(4):e0195299.
6. **Kovalova T, Koval T**, Benesova E, Vodickova P, Spiwok V, Lipovova P, **Dohnalek J**. Active site complementation and hexameric arrangement in the GH family 29; a structure–function study of α -L-fucosidase isoenzyme 1 from *Paenibacillus thiaminolyticus*. *Glycobiology*, cwy078. Published: 23 August 2018.

Laboratoř strukturnich proteinů – Zdeněk Lánský

1. Lüdecke A, Seidel AM, **Braun M, Lansky Z**, Diez S, Diffusive tail anchorage determines velocity and force produced by kinesin-14 between crosslinked microtubules. *Nat Commun*. 2018 Jun 7;9(1):2214.
2. Holanova, K, Bujak, L, Marín, A G, **Braun, M, Lansky, Z**, Piliarik, M. High-Fidelity Fast Tracking of Protein Motion. In: *Optics InfoBase Conference Papers. Volume Part F110-Sensors 2018*. Zurich: OSA, 2018, č. článku SeTh1A.4.

Laboratoř strukturní bioinformatiky proteinů - Jiří Černý

1. Zahradnik J, Kolenko P, Palyzova A, **Cerny J**, Kolarova L, Kyslikova E, Maresova H, Grulich M, Nunvar J, Sulc M, Kyslik P, Schneider B. The crystal structure of XdpB, the bacterial old yellow enzyme, in an FMN-free form. *PLoS One*. 2018 Apr 9; 13(4):e0195299.
2. Peter EK, **Cerny J**. Enriched Conformational Sampling of DNA and Proteins with a Hybrid Hamiltonian Derived from the Protein Data Bank. *Int J Mol Sci*. 2018 Oct 30; 19(11). pii: E3405.
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4. Hlavnickova M, Kuchar M, Osicka R, Vankova L, Petrokova H, Maly M, **Cerny J**, Arenberger P, Maly P. ABD-Derived Protein Blockers of Human IL-17 Receptor A as Non-IgG Alternatives for Modulation of IL-17-Dependent Pro-Inflammatory Axis. *Int J Mol Sci*. 2018 Oct 9; 19(10). pii: E3089.
5. Skrlec K, Zadavec P, Hlavnickova M, Kuchar M, Vankova L, Petrokova H, Križova L, **Cerny J**, Berlec A, Maly P. p19-Targeting ILP Protein Blockers of IL-23/Th-17 Pro-Inflammatory Axis Displayed on Engineered Bacteria of Food Origin. *Int J Mol Sci*. 2018 Jul 1; 19(7). pii: E1933.
6. Frolikova M, Manaskova-Postlerova P, **Cerny J**, Jankovicova J, Simonik O, Pohlova A, Secova P, Antalikova J, Dvorakova-Hortova K. CD9 and CD81 Interactions and Their Structural Modelling in Sperm Prior to Fertilization. *Int J Mol Sci*. 2018 Apr 19;19 (4).

Laboratoř molekulární terapie – Jiri Neuzil

1. Piggott L, Silva A, Robinson T, Santiago-Gomez A, Simões BM, Becker M, Fichtner I, **Andera L**, Young P, Morris C, Barrett-Lee P, Alchami F, Piva M, Vivanco MD, Clarke RB, Gee J, Clarkson R. Acquired Resistance of ER-Positive Breast Cancer to Endocrine Treatment Confers an Adaptive Sensitivity to TRAIL through Posttranslational Downregulation of c-FLIP. *Clin Cancer Res*. 2018 May 15; 24(10):2452-2463.
2. **Nahacka Z**, Svadlenka J, Peterka M, Ksandrova M, **Benesova S**, **Neuzil J**, **Andera L**. TRAIL induces apoptosis but not necroptosis in colorectal and pancreatic cancer cells preferentially via the TRAIL-R2/DR5 receptor. *Biochim Biophys Acta*. 2018 Mar; 1865(3):522-531.
3. **Hubackova S**, **Davidova E**, **Rohlenova K**, Stursa J, Werner L, **Andera L**, Dong L, Terp MG, Hodny Z, Ditzel HJ, **Rohlana J**, **Neuzil J**. Selective elimination of senescent cells by mitochondrial targeting is regulated by ANT2. *Cell Death Differ*. 2018 May 21.
4. Cuyàs E, Verdura S, Llorach-Pares L, Fernandez-Arroyo S, Luciano-Mateo F, Cabre N, Stursa J, Werner L, Martin-Castillo B, Viollet B, **Neuzil J**, Joven J, Nonell-Canals A, Sanchez-Martinez M, Menendez JA. Metformin directly targets the H3K27me3 demethylase KDM6A/UTX. *Aging Cell*. 2018 May 8:e12772.
5. Mrazkova B, Dzijak R, Imrichova T, Kyjaccova L, Barath P, Dzubak P, Holub D, Hajduch M, **Nahacka Z**, **Andera L**, **Holicek P**, Vasicova P, Sapega O, Bartek J, Hodny Z. Induction, regulation and roles of neural adhesion molecule L1CAM in cellular senescence. *Aging (Albany NY)*. 2018 Mar 28;10(3):434-462.

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8. **Bajzikova M, Kovarova J, Coelho AR, Boukalova S**, Oh S, **Rohlenova K**, Svec D, **Hubackova S**, Endaya B, **Judasova K**, Bezawork-Geleta A, **Kluckova K**, Chatre L, **Zobalova R, Novakova A, Vanova K, Ezrova Z**, Maghzal GJ, **Magalhaes Novais S**, Olsinova M, **Krobova L**, An YJ, **Davidova E, Nahacka Z**, Sobol M, Cunha-Oliveira T, Sandoval-Acuña C, Strnad H, Zhang T, Huynh T, Serafim TL, Hozak P, Sardao VA, Koopman WJH, Ricchetti M, Oliveira PJ, Kolar F, Kubista M, Truksa J, Dvorakova-Hortova K, Pacak K, Gurlich R, Stocker R, Zhou Y, Berridge MV, Park S, Dong L, **Rohlana J, Neuzil J**. Reactivation of Dihydroorotate Dehydrogenase-Driven Pyrimidine Biosynthesis Restores Tumor Growth of Respiration-Deficient Cancer Cells. *Cell Metab*. 2018 Nov 9. pii: S1550-4131(18)30646-6.
9. Pan J, Lee Y, Cheng G, Zielonka J, Zhang Q, **Bajzikova M**, Xiong D, Tsaih SW, Hardy M, Flister M, Olsen CM, Wang Y, Vang O, **Neuzil J**, Myers CR, Kalyanaraman B, You M. Mitochondria-Targeted Honokiol Confers a Striking Inhibitory Effect on Lung Cancer via Inhibiting Complex I Activity. *iScience*. 2018 May 25; 3:192-207.
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13. Lettlova S, Brynychova V, **Blecha J**, Vrana D, Vondrusova M, Soucek P, Truksa J. MiR-301a-3p Suppresses Estrogen Signaling by Directly Inhibiting ESR1 in ER α Positive Breast Cancer. *Cell Physiol Biochem*. 2018;46(6):2601-2615.

Laboratoř reprodukční biologie – Kateřina Hortová

1. Krejcirova R, Manasova M, Sommerova V, Langhamerova E, Rajmon R, **Manaskova-Postlerova P**. G protein-coupled estrogen receptor (GPER) in adult boar testes, epididymis and spermatozoa during epididymal maturation. *Int J Biol Macromol*. 2018 May 3. pii: S0141-8130(18)30619-6.
2. **Frolikova M, Manaskova-Postlerova P**, Cerny J, Jankovicova J, **Simonik O, Pohlova A**, Secova P, Antalikova J, **Dvorakova-Hortova K**. CD9 and CD81 Interactions and Their Structural Modelling in Sperm Prior to Fertilization. *Int J Mol Sci*. 2018 Apr 19;19(4).

3. Kerns K, **Zigo M**, Drobnis EZ, Sutovsky M, Sutovsky P. Zinc ion flux during mammalian sperm capacitation. 2018 May 25;9(1):2061.
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5. Bajzikova M, Kovarova J, Coelho AR, Boukalova S, Oh S, Rohlenova K, Svec D, Hubackova S, Endaya B, Judasova K, Bezawork-Geleta A, Kluckova K, Chatre L, Zobalova R, Novakova A, Vanova K, Ezrova Z, Maghzal GJ, Magalhaes Novais S, Olsinova M, Krobova L, An YJ, Davidova E, Nahacka Z, Sobol M, Cunha-Oliveira T, Sandoval-Acuña C, Strnad H, Zhang T, Huynh T, Serafim TL, Hozak P, Sardao VA, Koopman WJH, Ricchetti M, Oliveira PJ, Kolar F, Kubista M, Truksa J, **Dvorakova-Hortova K**, Pacak K, Gurlich R, Stocker R, Zhou Y, Berridge MV, Park S, Dong L, Rohlena J, Neuzil J. Reactivation of Dihydroorotate Dehydrogenase-Driven Pyrimidine Biosynthesis Restores Tumor Growth of Respiration-Deficient Cancer Cells. *Cell Metab.* 2018 Nov 9. pii: S1550-4131(18)30646-6.
6. Jankovicova J, Michalkova K, Secova P, Horovska L, **Manaskova-Postlerova P**, Antalikova J. (2018) Evaluation of protein phosphorylation in bull sperm during their maturation in the epididymis. *Cell Tissue Res.* 371(2):365-373.
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8. Bosakova T, Tockstein A, **Sebkova N**, **Simonik O**, Adamusova H, Albrechtova J, Albrecht T, Bosakova Z, **Dvorakova-Hortova K**. New Insight into Sperm Capacitation: A Novel Mechanism of 17 β -Estradiol Signalling. *Int J Mol Sci.* 2018 Dec 12;19 (12).

Laboratoř molekulární patogenetiky – Gabriela Pavlínková

1. **Cerychova R**, **Bohuslavova R**, Papousek F, Sedmera D, Abaffy P, Benes V, Kolar F, **Pavlinkova G**. Adverse effects of Hif1a mutation and maternal diabetes on the offspring heart. *Cardiovasc Diabetol.* 2018 May 12; 17(1):68.
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Laboratoř nádorové rezistence – Jaroslav Truksa

1. **Lettlova S**, Brynychova V, Blecha J, Vrana D, **Vondrusova M**, Soucek P, **Truksa J**. MiR-301a-3p Suppresses Estrogen Signaling by Directly Inhibiting ESR1 in ER α Positive Breast Cancer. *Cell Physiol Biochem.* 2018;46(6):2601-2615.
2. Bajzikova M, Kovarova J, Coelho AR, Boukalova S, Oh S, Rohlenova K, Svec D, Hubackova S, Endaya B, Judasova K, Bezawork-Geleta A, Kluckova K, Chatre L, Zobalova R, Novakova A, Vanova K, Ezrova Z, Maghzal GJ, Magalhaes Novais S, Olsinova M, Krobova L, An YJ, Davidova E, Nahacka Z, Sobol M, Cunha-Oliveira T, **Sandoval-Acuña C**, Strnad H, Zhang T, Huynh T, Serafim TL, Hozak P, Sardao VA, Koopman WJH, Ricchetti

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3. Frydlova J, Rogalsky DW, **Truksa J**, Traeger L, Steinbicker AU, Vokurka M, Krijt J. Liver HFE protein content is posttranscriptionally decreased in iron-deficient mice and rats. *Am J Physiol Gastrointest Liver Physiol.* 2018 Oct 1; 315(4):G560-G568.

Laboratoř genové exprese – Mikael Kubista

1. Skerenova M, Mikulova V, Capoun O, **Svec D**, Kolostova K, Soukup V, Honova H, Hanus T, Zima T. Gene Expression Analysis of Immunomagnetically Enriched Circulating Tumor Cell Fraction in Castration-Resistant Prostate Cancer. *Mol Diagn Ther.* 2018 May 3.
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3. **Sindelka R**, **Abaffy P**, Qu Y, **Tomankova S**, **Sidova M**, **Naraine R**, Kolar M, Peuchen E, Sun L, Dovichi N, **Kubista M**. Asymmetric distribution of biomolecules of maternal origin in the *Xenopus laevis* egg and their impact on the developmental plan. *Sci Rep.* 2018 May 29;8(1):8315.
4. **Valihrach L**, **Androvc P**, **Kubista M**. Platforms for Single-Cell Collection and Analysis. *Int J Mol Sci.* 2018 Mar 11; 19(3). pii: E807.
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15. Cerychova R, Bohuslavova R, Papousek F, Sedmera D, **Abaffy P**, Benes V, Kolar F, Pavlinkova G. Adverse effects of Hif1a mutation and maternal diabetes on the offspring heart. *Cardiovasc Diabetol*. 2018 May 12; 17(1):68.

Servisní technologická laboratoř – Lukáš Werner

1. Hubackova S, Davidova E, Rohlenova K, **Stursa J, Werner L**, Andera L, Dong L, Terp MG, Hodny Z, Ditzel HJ, Rohlena J, Neuzil J. Selective elimination of senescent cells by mitochondrial targeting is regulated by ANT2. *Cell Death Differ*. 2018 May 21.
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