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## Research output

### **Structural conservation of insulin/IGF signalling axis at the insulin receptors level in *Drosophila* and humans**

Viola, C. M., Frittmann, O., Jenkins, H. T., Shafi, T., De Meyts, P. & Brzozowski, A. M., 7 Oct 2023, In: *Nature Communications*. 14, 1, 13 p., 6271.

### **Non-glycosylated IGF2 prohormones are more mitogenic than native IGF2**

Potalitsyn, P., Mrázková, L., Selicharová, I., Tencerová, M., Ferencáková, M., Chrudinová, M., Turnovská, T., Brzozowski, A. M., Marek, A., Kaminský, J., Jiráček, J. & Žáková, L., 19 Aug 2023, In: *Communications Biology*. 6, 1, 15 p., 863.

### **Characterization of insulin crystalline form in isolated $\beta$ -cell secretory granules**

Asai, S., Moravcová, J., Žáková, L., Selicharová, I., Hadravová, R., Brzozowski, A. M., Nováček, J. & Jiráček, J., 1 Dec 2022, In: *Open Biology*. 12, 12, 10 p., 220322.

### **The efficiency of insulin production and its content in insulin-expressing model $\beta$ -cells correlate with their Zn<sup>2+</sup> levels: Zn<sup>2+</sup> levels in $\beta$ -cells**

Dzianová, P., Asai, S., Chrudinová, M., Kosinová, L., Potalitsyn, P., Šácha, P., Hadravová, R., Selicharová, I., Kříž, J., Turkenburg, J. P., Brzozowski, A. M., Jiráček, J. & Žáková, L., 21 Oct 2020, In: *Open Biology*. 10, 10, 13 p., 200137.

### **Cross-Linking/Mass Spectrometry Uncovers Details of Insulin-Like Growth Factor Interaction With Insect Insulin Binding Protein Imp-L2**

Pompach, P., Viola, C. M., Radosavljević, J., Lin, J., Jiráček, J., Brzozowski, A. M. & Selicharová, I., 9 Oct 2019, In: *Frontiers in Endocrinology*. 10, p. 1-10 10 p., 695.

### **Can Arginine Inhibit Insulin Aggregation? A Combined Protein Crystallography, Capillary Electrophoresis, and Molecular Simulation Study**

Březina, K., Duboué-Dijon, E., Palivec, V., Jiráček, J., Křížek, T., Viola, C. M., Ganderton, T. R., Brzozowski, A. M. & Jungwirth, P., 8 Nov 2018, In: *Journal of Physical Chemistry B*. 122, 44, p. 10069-10076 8 p.

### **Structures of insect Imp-L2 suggest an alternative strategy for regulating the bioavailability of insulin-like hormones**

Brzozowski, A. M., 21 Sept 2018, In: *Nature Communications*. 9, 12 p., 3860 (2018) .

### **Site-selective C-C modification of proteins at neutral pH using organocatalyst-mediated cross aldol ligations**

Spears, R. J., Brabham, R. L., Budhadev, D., Keenan, T., McKenna, S. E., Walton, J., Brannigan, J. A., Brzozowski, A. M., Wilkinson, A. J., Plevin, M. J. & Fascione, M. A., 7 Jul 2018, In: *Chemical Science*. 9, 25, p. 5585-5593 9 p.

### **The *Chlamydia trachomatis* PmpD adhesin forms higher order structures through disulphide-mediated covalent interactions**

Paes, W., Dowle, A., Coldwell, J., Leech, A., Ganderton, T. & Brzozowski, A., 18 Jun 2018, In: *PLoS ONE*. 13, 6, e0198662.

### **Converting Insulin-like Growth Factors 1 and 2 into High-Affinity Ligands for Insulin Receptor Isoform A by the Introduction of an Evolutionarily Divergent Mutation**

Macháčková, K., Chrudinová, M., Radosavljević, J., Potalitsyn, P., Křížková, K., Fábry, M., Selicharová, I., Collinsová, M., Brzozowski, A. M., Žáková, L. & Jiráček, J., 24 Apr 2018, In: *Biochemistry*. 57, 16, p. 2373-2382 10 p.

### **Insulin-like Growth Factor 1 Analogs Clicked in the C Domain: Chemical Synthesis and Biological Activities**

Macháčková, K., Collinsová, M., Chrudinová, M., Selicharová, I., Pícha, J., Buděšínský, M., Vaněk, V., Žáková, L., Brzozowski, A. M. & Jiráček, J., 28 Dec 2017, In: *JOURNAL OF MEDICINAL CHEMISTRY*. 60, 24, p. 10105-10117 13 p.

**Computational and Structural Evidence for Neurotransmitter-mediated Modulation of the Oligomeric States of Human Insulin in Storage Granules**

Palivec, V., Viola, C. M., Kozak, M., Ganderton, T. R., Křížková, K., Turkenburg, J. P., Halušková, P., Žáková, L., Jiráček, J., Jungwirth, P. & Brzozowski, A. M., 28 Mar 2017, (E-pub ahead of print) In: *The Journal of biological chemistry*. 292, 20, p. 8342-8355

**Recombinant polymorphic membrane protein D in combination with a novel, second-generation lipid adjuvant protects against intra-vaginal Chlamydia trachomatis infection in mice**

Kaye, P., Lacey, C. J. N., Paes, W. N. W., Brzozowski, A. M., Bland, J. M., Brown, N., Reed, S., Carter, D. & Cole, R., 29 Jul 2016, In: *Vaccine*. 34, 35, p. 4123-4131 9 p.

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Dohnalek, J., McAuley, K. E., Brzozowski, A. M., Østergaard, P. R., Svendsen, A. & Wilson, K. S., 17 May 2016, *Understanding Enzymes: Function, Design, Engineering and Analysis*. Pan Stanford Publishing Pte. Ltd., p. 203-265 63 p.

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Křížková, K., Chrudinová, M., Povalová, A., Selicharová, I., Collinsová, M., Vaněk, V., Brzozowski, A. M., Jiráček, J. & Zakova, L., 12 May 2016, In: *Biochemistry*. 55, 21, p. 2903-2913 11 p.

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**Structural characterization of human heparanase reveals insights into substrate recognition**

Wu, L., Viola, C. M., Brzozowski, A. M. & Davies, G. J., 16 Nov 2015, In: *Nature Structural & Molecular Biology*. 22, 12, p. 1016-1022 7 p.

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Brzozowski, A. M., 26 Oct 2015, In: *PLoS ONE*. 10, 10, p. 1-13 13 p., e0141209.

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Kosinová, L., Veverka, V., Novotná, P., Collinsová, M., Urbanová, M., Moody, N. R., Turkenburg, J. P., Jiráček, J., Brzozowski, A. M. & Žáková, L., 3 Jun 2014, In: *Biochemistry*. 53, 21, p. 3392-3402 11 p.

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#### **Design and Synthesis of Inhibitors of Plasmodium falciparum N-Myristoyltransferase, A Promising Target for Antimalarial Drug Discovery**

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#### **Insulin and insulin-like growth factor II differentially regulate endocytic sorting and stability of insulin receptor isoform A.**

Morcavallo, A., Genua, M., Palummo, A., Kletvikova, E., Jiracek, J., Brzozowski, A. M., Iozzo, R., Belfiore, A. & Morrione, A., 30 Mar 2012, In: *Journal of Biological Chemistry*. 287, 14, p. 11422-11436 15 p.

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#### **Structure and function of *Humicola insolens* family 6 cellulases: Structure of the endoglucanase, Cel6B, at 1.6 Å resolution**

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## Projects

**A regional cryo-EM Facility at the University of York**

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20/12/18 → 19/12/23

**Equipment to Support Protein Crystallisation ....**

Brzozowski, A. M.  
BBSRC (BIOTECHNOLOGY AND BIOLOGICAL SCIENCES RESEARCH COUNCIL)  
1/02/07 → 31/01/08

**Hijacking intracellular storage bodies to create a novel mammalian cell-based expression system for the production of hard to express proteins**

Brzozowski, A. M. & Ganderton, T. R.  
BBSRC (BIOTECHNOLOGY AND BIOLOGICAL SCIENCES RESEARCH COUNCIL)  
1/04/16 → 31/03/17

**Integrated multi-user crystallisation facility comprising a robot and storage system with image retrieval**

Antson, A. A., Brzozowski, A. M., Davies, G. J., Potts, J. R., Smith, D. F., Wilkinson, A. J. & Wilson, K. S.  
1/12/13 → 30/11/18

**Molecular dissection of diabetes and cancer interplay: integrated multidisciplinary approach**

Brzozowski, A. M.  
MEDICAL RESEARCH COUNCIL (MRC)  
1/11/12 → 31/10/18

**Revealing Molecular Bases of Signal Transduction through Drosophila Insulin Receptor**

Brzozowski, A. M., Sweeney, S. & Viola, C.  
BBSRC (BIOTECHNOLOGY AND BIOLOGICAL SCIENCES RESEARCH COUNCIL)  
1/08/22 → 31/07/25

**X-ray Diffraction Equipment for Macromolecular Crystallography at York**

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BBSRC (BIOTECHNOLOGY AND BIOLOGICAL SCIENCES RESEARCH COUNCIL)

18/09/20 → 17/09/22