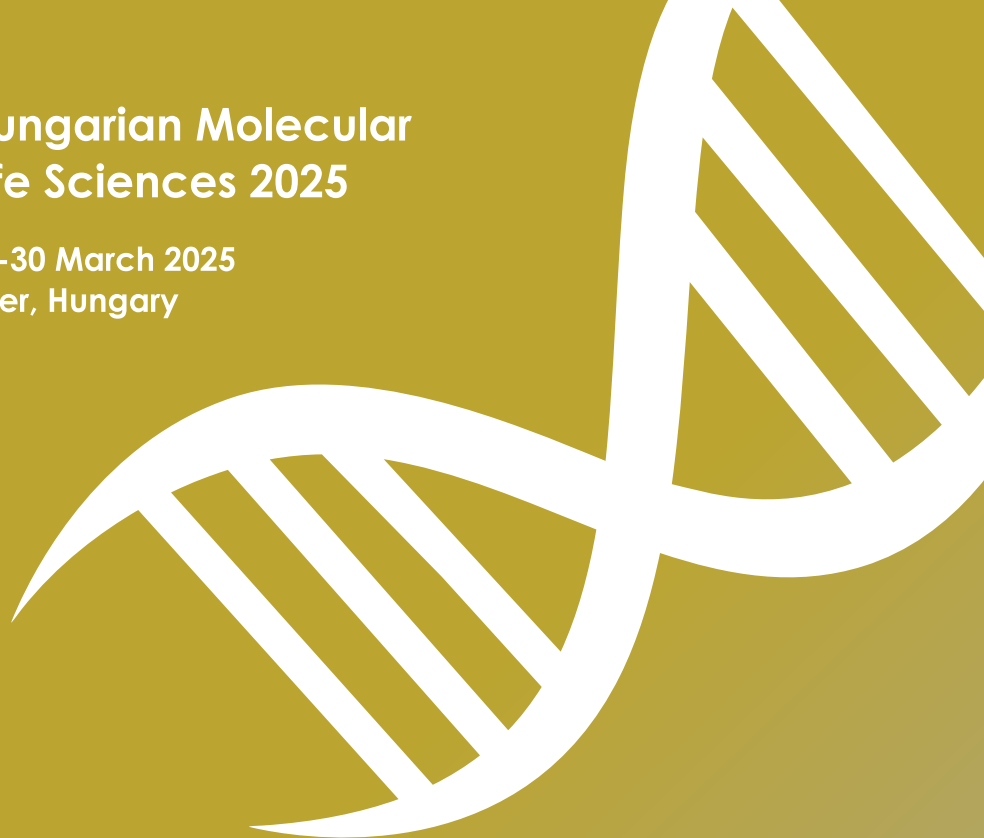


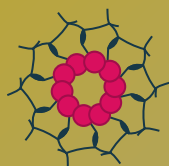
Hungarian Molecular Life Sciences 2025

28-30 March 2025

Eger, Hungary



Programme



**Hungarian
Biochemical
Society**



MAGE

Hungarian Genetics Society



MIRAVA POLYSCOPE

IMAGING FROM MILLIMETERS DOWN TO 3.2 nm



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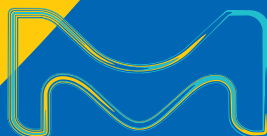
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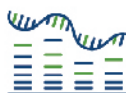
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GENERAL INFORMATION

CONFERENCE ORGANISERS

Magyar Biokémiai Egyesület (Hungarian Biochemical Society)

Magyar Genetikusok Egyesülete (Hungarian Genetics Society)

ORGANISING COMMITTEE

László Buday¹, Mihály Kovács², Beáta Lontay³, József Mihály⁴, Rita Sinka⁵, Péter Vilmos⁴

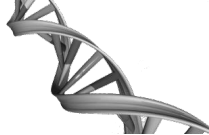
1 Institute of Enzymology, Research Centre for Natural Sciences
Magyar tudósok körútja 2., Budapest H-1117
<https://www.ttk.hun-ren.hu/ei/en/>

2 ELTE Faculty of Science
Pázmány Péter sétány 1/A, Budapest, H-11177
<https://ttk.elte.hu/en/>

3 Department of Medical Chemistry, University of Debrecen
Egyetem tér 1., Debrecen H-4032
<https://chemistry.med.unideb.hu/en>

4 Institute of Genetics, Biological Research Centre
Temesvári krt. 62., Szeged H-6726
<http://www.brc.hu/en>

5 Department of Genetics, University of Szeged
Középfasor 52, Szeged H- 6726
<https://u-szeged.hu/>



TECHNICAL ORGANISERS

Diamond Congress Ltd.

Tel: +36-1-225-0209

elesetele@diamond-congress.com

<https://www.diamond-congress.hu/>

WEBSITE OF THE CONFERENCE

<https://www.hunlifesci.hu>

WEBSITE OF THE HUNGARIAN BIOCHEMICAL SOCIETY

<http://www.mbkegy.hu>

WEBSITE OF THE HUNGARIAN GENETICS SOCIETY

<http://www.magenegy.hu/hu/>

VENUE

Hotel Eger-Park

3300 Eger

Szálloda utca 1-3.

Tel.: +36-36/522-200

OPENING HOURS OF THE REGISTRATION

Friday, 28 March, 2025	12.00 – 18.00
Saturday, 29 March, 2025	08.30 – 17.00
Sunday, 30 March, 2025	08.30 – 13.30

ONSITE CONTACT NUMBERS

Nóra Éles-Etele / Attila Varga

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OFFICIAL LANGUAGE

Official language of the Conference is English (no translation is available).



ORAL PRESENTATIONS (PL-1 – PL-5, O-01 – O-62)

The schedule of the oral presentations can be seen in the detailed programme of this booklet. Speakers and session chairs are kindly requested to keep the time of the presentations. Make sure to bring your presentation file written on a USB flash drive. Presenters are kindly requested to give their presentation file to the technicians in the lecture rooms preferably half day before beginning of the corresponding session.

Oral presentations: Congress Hall, Session Room Liget I.

POSTER PRESENTATIONS (P-001 – P-132)

Poster presenters of **ALL poster numbers** are kindly requested to mount their posters **before** the opening of the conference (or latest during the coffee break in the afternoon of the first conference day) and remove them on Sunday /30 March/ till 11:00 the latest (during the coffee break). Posters will be identified by poster numbers, which are indicated in the programme booklet and in the conference application.

For mounting and removing the posters, please take it into consideration, that there will be oral presentations in the room! Please use the breaks for these actions. Also please use the poster sessions and breaks for discussions.

Poster sessions: Room Liget I. and Liget corridor

Pins are to be provided to fix the posters by the technical organisers.

Authors of ODD number posters will present their work between 19:45-21:15 on Friday, 28 March.

Authors of EVEN number posters will present their work between 16:45-19:00 on Saturday, 29 March.

EXHIBITION

In accordance with the conventions of the conference, parallel to the scientific sessions a professional exhibition is to be organised. Please have a look at the exhibition floor plan of the booklet.

ACCOMMODATION

Hotel rooms are booked under the name of the participants. Conference participants may occupy the rooms from 14:00 on the day of arrival and should arrange the check out until 10:00. The hotel ensures a luggage room. The parking lot of the hotel is available for our participants free of charge. Guests are kindly requested to settle their extra room bills (such as phone calls, drinks and minibar) prior to departure.

The room prices include buffet breakfast, VAT, city tax and the usage of wellness facilities (pools, jacuzzi, sauna park and steam bath).

SOCIAL PROGRAMMES *(incl. in the registration fees)*

Friday, 28 March, 2025

Welcome dinner (Restaurant of Hotel Park)

Saturday, 29 March, 2025

Banquet (Congress Hall of Hotel Eger)

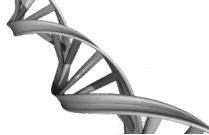
Saturday & Sunday, 29-30 March, 2025

Lunches (Restaurant of Hotel Park)

Friday - Sunday, 28-30 March, 2025

Coffee breaks (Conference level of Hotel Eger)

(indicated in the programme)



All participants and accompanying persons will receive a personal badge upon registration. You are kindly requested to wear your name badge when attending the meetings or social events.

Extra consumption, which is not included in the menus are kindly requested to settle prior to departure.

CANCELLATION POLICY

Cancellations on registration and hotel reservation can be made only in writing. The refund for cancellations made prior to 25 February, 2025 is 85%. After this date the conference secretariat has to pay the advanced payments to the hotel, and there is no way to refund in case of latter cancellation.

PAYMENT, INVOICES

The price of the ordered services will be indicated on the final invoice according to the Hungarian official financial rules. Official final invoices and receipts for fees paid by the participants are sent by e-mail right after the payment arrives to our bank account. Please forward them to the financial department of your institution.

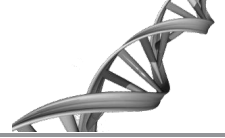
LIABILITY AND INSURANCE

The organisers cannot accept liability for any personal accidents, loss of belongings or damage to private property of participants and accompanying persons that may occur during the conference.

EVENT APPLICATION AND QR CODE HUNTING

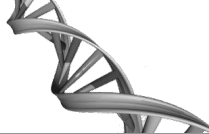
The conference is supported by SmartEvents© mobile application. Using the application is free and voluntary for all registered delegates and the content used therein is accessible only for 'Hungarian Molecular Life Science Conference 2025' participants. The application helps the delegates to find all information regarding the event, manage the daily agenda, download materials, communicate with all the other participants on the event and more.

We offer the conference delegates a fantastic QR CODE HUNTING game. After downloading the event application participants can visit the exhibitors and scan the individual exhibitor's QR code with their mobile device. Everybody who has visited at least 12 exhibitors and scanned their QR code, will automatically be entered to win a PRIZE! Valuable prizes will be drawn during the Banquet /29 March/, so make sure to scan the codes till the dinner.



Day 1 – Friday, 28 March 2025

14:00-14:10	Opening	
14:10-16:05	Plenary session Congress Hall Chair: László Buday	
14:10-14:50	PL-1 Balázs Papp Leveraging genomic surveillance to understand and combat antibiotic resistance	
14:50-15:30	PL-2 Imre Boros My Journey Around DNA	
15:30-15:50	PL-3 Gábor L. Kovács - Cryo-EM Laboratory Establishment of a cryo-EM core facility at the University of Pécs	
15:50-16:05	Company talk Igor Pongrac - Merck Enhancing cell culture and data analysis with Millicell® inserts & plates and advanced lab instrumentation	
16:05-16:45	Coffee break	
16:45-18:05	Molecular mechanism of diseases I. Congress Hall Chair: László Tretter	Epigenetics and Transcriptional regulation Room Liget I. Chair: Dávid Szüts
16:45-17:05	O-01 Éva Csősz Network analysis of proteins and antimicrobial and immunomodulatory peptides in obesity and type 2 diabetes	O-06 Gábor Szabó KDM4-dependent DNA breaks at active promoters facilitate +1 nucleosome eviction
17:05-17:20	O-02 Endre Kristóf Iron uptake supports thermogenic activation in human adipocytes	O-07 Ágnes Tantos Structural and functional effects of disease-related point mutations in the RNA binding region of KMT2D
17:20-17:35	O-03 Rini Arianti L-amino acid transporter 1 regulates thermogenesis of human brown adipocytes by controlling metabolic and transcriptomic program	O-08 László Szabados Large-scale transcriptional and epigenetic responses of rapeseed to PEG-triggered osmotic stress

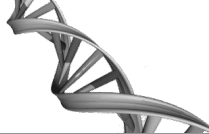


17:35-17:50	O-04 Attila Ambrus Molecular pathomechanisms in lipoamide dehydrogenase deficiency	O-09 Chahra Fareh The role of RUNX3 in early hematopoietic differentiation and immune cell development
17:50-18:05	O-05 Nihad Kharrat Helu Association of lipidomic profile with the progression of insulin resistance	O-10 László Imre Binding of the C-terminal H2A.Z tail to DNA: Is it superhelicity-dependent?
18:15-19:45	Welcome dinner Restaurant of Hotel Park	
19:45-21:15	Poster discussion with drinks – ODD number posters	
21:15-22:00	Quiz game - organized by the Junior Section of the Hungarian Biochemical Society (MBKE) - Congress Hall	



Day 2 – Saturday, 29 March 2025

09:00-10:20	Molecular mechanism of diseases II. Congress Hall Chair: Beáta Lontay	Vesicle transport and autophagy Room Liget I. Chair: Péter Vilmos
09:00-09:20	O-11 Karen Uray Effects of bacterial metabolites on intestinal contractile function	O-16 Szabolcs Takáts Combined loss of early endosomal and lysosomal multisubunit tethering complexes inhibits tumor progression through upregulating cancer cell apoptosis
09:20-09:35	O-12 Erzsébet Fichó Predicting drug side effects using Digital Twins	O-17 Tibor Kovács Exploring mechanisms for neuron survival in cells with exhausted autophagy
09:35-09:50	O-13 Walaa Alibrahem Health benefits, applications, and analytical methods of freshly produced allyl isothiocyanate	O-18 Győző Szenci Huntington's disease associated ankyrin repeat palmitoyl transferases are rate limiting factors in lysosome formation and fusion
09:50-10:05	O-14 László Tretter The role of α -KGDHc in metabolism under normal and pathological conditions	O-19 Attila Boda Dynein-regulated autophagosome transport ensures proper fusion efficiency in drosophila fat cells
10:05-10:20	O-15 András Ecker Linking drug side effects with their binding to specific off-target proteins via a cell simulation-based and interpretable machine learning method	O-20 Dávid Hargitai Tethering deadlock: A new twist on SNARE-mediated fusions
10:20-11:05	Coffee break	



11:05-12:40	Molecular mechanism of diseases III. Congress Hall Chair: László Virág	Cell differentiation and signaling Room Liget I. Chair: Rita Sinka
11:05-11:25	O-21 Zoltán Wiener The functional role of cellular heterogeneity for markers of the aggressive subtype in colorectal cancer	O-27 László Homolya Cross-regulation of signaling pathways controlling hepatocyte polarity
11:25-11:40	O-22 Máté Varga Zebrafish models of defective pseudouridylation provide insights into the ethiology of ribosomopathies	O-28 Csaba Matta Identifying novel biomarkers on chondrogenic cells
11:40-11:55	O-23 Imola Wilhelm MiR-146a-5p and TGF- β collectively regulate brain endothelial Paqr5 and angiogenesis in response to tumour-derived extracellular vesicles	O-29 Róbert Király Transglutaminase 2 binds RNA. A novel transglutaminase feature recognised in human endothelial cells
11:55-12:10	O-24 Roland Tengölics Metabolome changes behind blood-brain barrier formation and (dis)function	O-30 Sarolta Tóth PMCA4b regulates cell polarization in luminal type breast cancer cells
12:10-12:25	O-25 Piercarlo Del Console Circulating extracellular vesicles derived from obese women enhance the tumor-stimulatory activities of stromal fibroblast in breast cancer	O-31 Adrián Orosz Characterization the effect of drugs in a complex human system in colorectal cancer



12:25-12:40	O-26 Gergő Kalló Salivary signatures of oral squamous cell carcinoma: Proteomics and metabolomics perspectives	O-32 Maïssa Ben Mahmoud Multifactorial approach is needed to unravel the maturation phases of human neurons derived from induced pluripotent stem cells
12:40-14:10	Lunch Restaurant of Hotel Park	
14:10-15:30	Plenary session Congress Hall Chair: József Mihály	
14:10-14:50	PL-4 Bernard Perbal The CCN family of proteins: a multifunctional biosignaling network FEBS National Lecture	
14:50-15:30	PL-5 Lumír Krejčí Homologous recombination - From repair of DSBs to processing stalled replication forks and human diseases	
15:30-15:40	Technical Break	
15:40-16:45	Archeogenetics Congress Hall Chair: Tibor Török	Bioinformatics Room Liget I. Chair: Attila Csikász-Nagy
15:40-16:00	O-33 Oszkár Schütz Archaeogenetic investigation of the Gepid period population of the Carpathian Basin	O-37 Balázs Ligeti ProkBERT-Phage: Pretrained genomic language model-based solution for rapid phage detection and lifestyle prediction in fragmented metagenomic data
16:00-16:15	O-34 Zoltán Maróti aHISplex: An imputation based method for eye, hair and skin colour prediction from low coverage ancient DNA	O-38 László Dobson Insights into pathogen sorting systems with the combination of structural modeling and deep learning

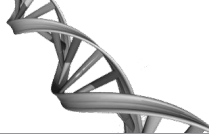


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| 16:15-16:30 | O-35 Dániel Gerber
Novel bioinformatic approaches reveal population transformations during the second half of the first millennium CE in the Carpathian Basin | O-39 János Juhász
Computational modelling of yeast colony cross sections |
| 16:30-16:45 | O-36 Gergely Varga
Out of the kings' shadows: population genetic investigation of the remains from the royal basilica of Székesfehérvár | O-40 Erda Qorri
AlphaFold2 derived structural features enhance the predictive power of missense variant classification algorithms |
| 16:45-19:00 | Poster discussion with coffee break, EVEN number posters | |
| 20:00- | Banquet Congress Hall | |

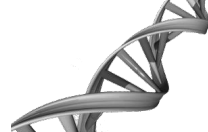


Day 3 – Sunday, 30 March 2025

09:30-10:50	Genome biology and DNA repair Congress Hall Chair: Mihály Kovács	Protein structure Room Liget I. Chair: Ferenc Erdődi
09:30-09:50	O-41 Zoltán Ivics Mitigation of genotoxic risks in Sleeping Beauty transposon-engineered cells	O-46 Anna Sánta Disease associated missense mutants of the Shank1 PDZ domain
09:50-10:05	O-42 Tibor Pankotai Ubiquitylation driven transcriptional repression response to DNA double-strand breaks	O-47 Soma Varga Comprehensive analysis of NMR and SAXS data aided with MD simulations to reveal dynamic structural features in the single alpha-helix of Drebrin
10:05-10:20	O-43 Bence György Gombás Assemblysomes: phase-separated ribonucleoprotein complexes involved in eukaryotic genotoxic stress-response	O-48 Bálint Sólyom Bótor Identification of structural environment characteristics of D-Aspartic-acids in heterochiral proteins
10:20-10:35	O-44 Nargis Karatayeva The effect of prolonged G-quadruplex stabilization on the functions of the human cell	O-49 János Pálinkás A methionine switch and an intrinsically disordered segment mediate redox-dependent condensation by the stress response factor human single stranded DNA-binding protein 1
10:35-10:50	O-45 Zsuzsanna Izsvák Target site selection and genomic context dependence of Sleeping Beauty transposition: Insights into safe genome engineering applications	O-50 Tamás Szaniszló Unexpected role of LC8 in the oligomerization of centrosomal proteins
10:50-11:30	Coffee break	

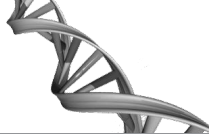


11:30-13:05	Development Congress Hall Chair: Miklós Erdélyi	Tumor biology Room Liget I. Chair: László Homolya
11:30-11:50	O-51 Nándor Nagy Characterization and ontogeny of colon mucosal SOX10+ glial cells using embryomanipulation and transgenic methods	O-57 Dávid Szűts The mutagenicity of long-term exposure to the ethanol-derived metabolite acetaldehyde
11:50-12:05	O-52 Péter Lőrincz Identification and characterization of a plasma membrane associated non-centrosomal MTOC in fruit flies	O-58 Lajos Mátés Detecting a new class of carcinogens by testing their ability to activate endogenous L1 elements
12:05-12:20	O-53 Erika Gábor Blood cell diversity of leukemic flies	O-59 Dorottya Károlyi Fatty acid synthesis supports tumor progression through keeping TORC1 responsive for insulin signaling
12:20-12:35	O-54 László Bodai Disturbed miRNA transcriptome in Huntington's and Alzheimer's disease models	O-60 Roberta Fajka-Boja The loss of DNA polymerase epsilon accessory subunits POLE3-POLE4 leads to BRCA1-independent PARP inhibitor sensitivity
12:35-12:50	O-55 Zsolt Sarang CD47 promotes, while exposure to apoptotic cells destroys the fusion program of differentiating myoblasts	O-61 Beáta Lontay Magnesium-dependent-Protein Phosphatase 1B is a tumor suppressor of cervical carcinoma
12:50-13:05	O-56 Lilla Kókity Mouse gastruloids fail to elongate axially in the lack of polycomb protein RYBP	O-62 Ádám Sánta Investigation of the synthetic lethality between BRCA1 and RAD18 with inducible gene-inactivation systems
13:15-13:25	Closing and award ceremony Congress Hall	
13:25-	Lunch Restaurant of Hotel Park	



List of posters - 28-29 March 2025

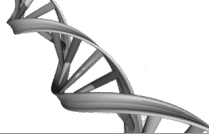
- P-001 Khloud Abdeldaeam**
Unraveling the molecular basis of the interaction between microglia and human stem cell derived neural progenitor cells
- P-002 Sara Afzali Jaktajdinani**
The function of WRNIP1 overexpression in human cells
- P-003 Habib Al Ashkar**
Association of HDL subfraction profile with heart rate
- P-005 Yousif Qais Al-Khafaji**
Upregulation of Inhibitor of DNA binding 1 and 3 is important for efficient thermogenic response in human adipocytes
- P-006 Attila Ambrus**
Molecular dynamics study of selected disease-relevant mutations of the lipoamide acyltransferase component in the branched-chain alpha-keto acid dehydrogenase complex
- P-007 Md Asaduzzaman**
Gut microbiome development in Hungarian Pumi puppies: insights from full-length 16S rRNA Sequencing
- P-008 Hédi Maczelka**
Stem cell-based tissue engineering strategies for studying lamin a/c-related dilated cardiomyopathy
- P-009 Dóra Balogh**
Investigating the role of the PDGF pathway in the hematopoiesis of *Drosophila melanogaster*
- P-010 Lili Fruzsina Balogh**
Copine expression profiles in human epidermal melanocytes and melanoma cells
- P-011 Alexandra Benő**
Unraveling tumor microenvironment heterogeneity in SCLC and NSCLC through single-cell RNA Sequencing
- P-012 Ágnes Berecz**
Metallothionein as a potential marker of melanoma metastasis
- P-013 Blanka Berta**
Interactions between the SARS-CoV-2 E protein and the SERCA regulatory system
- P-014 Noémi Borbély**
Genetic identification of the skeletal remains of Béla, Duke of Macsó (after 1243 - 1272)



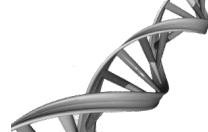
- P-015** | **Péter Borkúti**
A novel experimental system to directly investigate nuclear actin in immune cell proliferation and differentiation
- P-016** | **Tímea Burján**
Neuronspecific comparative analysis of two autophagy enhancer small molecules (AUTEN-67, -99) in Drosophila SCA1 models
- P-017** | **Arpan Chowdhury**
Effect of competition of nuclear receptors in phosphate mediated ectopic calcification in calcific aortic valve disease
- P-018** | **András Czajlik**
Refined solution structure of the lipoyl domain in the dihydrolipoamide succinyltransferase (E2) subunit of the human alpha-ketoglutarate dehydrogenase complex
- P-019** | **Bianka Csaholczi**
The interactome of human transglutaminase 2 and its conformation dependency in HUVEC cells
- P-020** | **Gábor Csordás**
The interaction of Drosophila macrophages with healthy and damaged basement membranes
- P-021** | **Anna Renáta Csuth**
Study of RNA-binding ability in the transglutaminase enzyme family
- P-022** | **László Dobson**
Prediction of Short Linear Motifs in the human proteome
- P-023** | **Tamás Dudás**
Capillary pericytes regulate vascular tone and local blood flow in inflammation
- P-024** | **Fanni Dzubák**
Exploring DNA Repair Dysfunction in Melanoma
- P-025** | **Péter Ecsédi**
Stress-induced in vivo decondensation of bacterial single-stranded DNA-binding (SSB) protein markedly contributes to stress tolerance
- P-026** | **Botond Engel**
The role of polymerase iota in chemotherapy-induced secondary mutagenesis
- P-027** | **Barbara Erdélyi-Furka**
Stress response in radiation-induced cardiac cell injury: a focus on endoplasmic reticulum stress and unfolded protein response



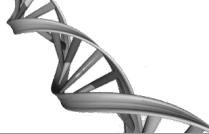
- | | |
|--------------|--|
| P-028 | Daniela Evdokimova
Heterogeneity of human lysosomes |
| P-029 | Gergő Falcsik
Enhancing autophagic degradation by silencing GTPase activating proteins in the nervous system of <i>Drosophila melanogaster</i> |
| P-030 | Fanni Farkas
The Homer1 - Shank3 interaction: NMR and SAXS studies on wild-type and mutant Homer1 EVH1 domains |
| P-031 | Ákos Avramucz (Tamás Fehér)
Applying engineered bacteriophages for expression-free luminescent detection of target bacteria |
| P-032 | Aishwarya Sanjay Chhatre
Synaptic sculpting by glial phagocytic pathways during <i>Drosophila</i> optic lobe development |
| P-033 | Bendegúz Filyó
Viral Identification with genomic language models |
| P-034 | Márton Fonódi
Investigation of the role of TIMAP in the BMP signaling pathway in SH-SY5Y cell line |
| P-035 | Bence Gaizer
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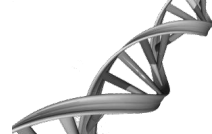
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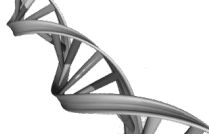
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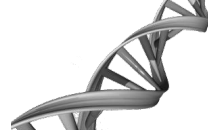
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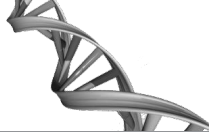
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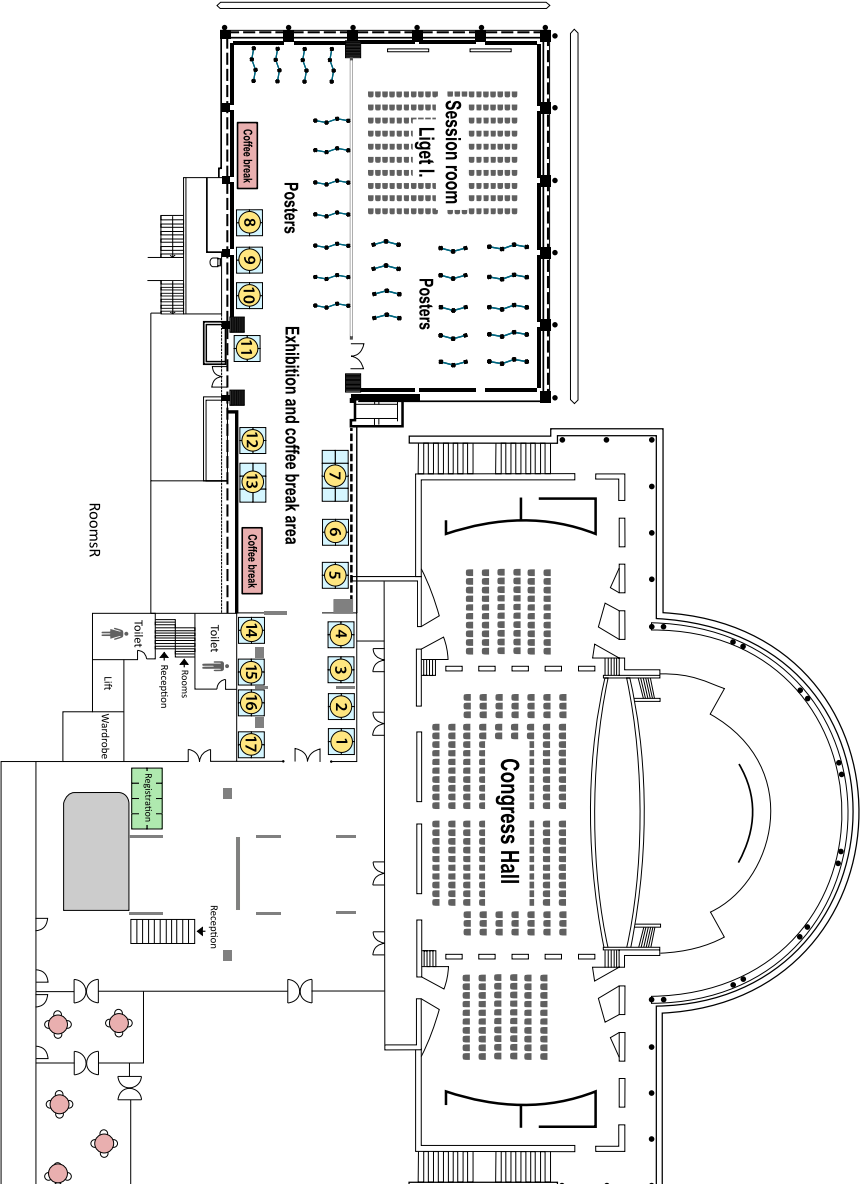


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Hungarian Molecular Life Sciences 2025

28-30 March 2025 Hotel Eger&Park

Map and exhibition floor plan



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- | | | |
|-----|-------|------------------------------|
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