



SCIENTIFIC PROGRAM

2nd International Congress
European Venom Network

23th -25th September 2024

Darwin-Dohrn Museum of Stazione Zoologica Anton Dohrn
Villa Comunale - Napoli, Italy

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-

Monday, September 23th

09:00 - 09:30 Registration

09:30 - 09:40 Conference Opening: Greetings from the Organizers

09:40 - 11:30 Management Session

WG Meetings

CHAIR: *Maria Vittoria Modica*

09:40-09:55 WG1 - results and wrap-up: *Sebastien Dutertre, Blerina Vrenoz*

09:55-10:10 WG2 - results and wrap-up: *Bjoern Marcus von Reumont, Benjamin-Florian Hempel*

10:10-10:25 WG3 - results and wrap-up: *Jan Prochazka*

10:25-11:00 COFFEE BREAK

11:00-11:15 WG4 - results and wrap-up: *Agostinho Antunes, Giulia Zancolli*

11:15-11:30 WG5 - results and wrap-up: *Ronald Jenner, Ayse Nalbantsoy*

11:30-12:25 Management Session

Committees

CHAIR: *Gregor Anderluh*

11:30-11:40 Stakeholder engagement: *Maria P. Ikonomopoulou*

11:40-11:50 Policy advisor: *Figen Caliskan*

11:50-12:00 STSM: *Stano Pekár, Dimitris Beis*

12:00-12:10 Conference grants: *Mauro Dalla Serra, Yiannis Sarigiannis*

12:10-12:25 Communication: *Maria Vittoria Modica*

12:25-14:00 LUNCH BREAK (SELF-ORGANIZED)

CHAIR: *Gregor Anderluh*

14:00-14:45

Keynote Speaker: *Cesare Montecucco*
Degeneration and Regeneration of the Neuromuscular Junction
following snakebite Injecting Neurotoxic PLA2s

14:45-17:35

Scientific Session

Venom Diversity in Marine and Terrestrial Environments

CHAIR: *Yiannis Sarigiannis, Giulia Zancolli, Blerina Vrenozi*

14:45-15:10

Exaptation of an evolutionary constraint enables behavioural control over venom composition in giant centipedes
[*Eivind Undheim*](#)

15:10-15:25

Macro-conotoxins of the MLSML and MKAVA superfamilies display structures not previously observed in cone snail venom
Saad Khilji, Celeste Hackney, Thomas Koch, Nicklas Ryding, Arik Hone, Aymeric Rogalski, Maren Watkins, Baldomero Olivera, Michael McIntosh, Helena Safavi-Hemami, Kaare Teilum and [Lars Ellgaard](#)

15:25-15:40

A fresh look into the venomics of genus *Profundiconus*
[*Juan Carlos García Galindo*](#), *Nicolas Puillandre, Manuel Jiménez Tenorio, Javier Sellanes and Rafael Zardoya*

15:40-16:00

COFFEE BREAK

16:00-16:25

Venom studies on West African cone snails of the genus *Kalloconus* (Gastropoda, Conidae)
[*Manuel J. Tenorio*](#), *Juan Carlos G. Galindo, Ana Herraiz-Perez, Anicet Ebou, Dominique Koua, Rafael Zardoya and Sebastien Dutertre*

16:25-16:40

Genome of the green-head ant, *Rhytidoponera metallica*, reveals mechanisms of toxin evolution in a genetically hyperdiverse eusocial species
[*Anders Isaksen*](#), *Pedro G. Nachtigall, Robin A. Araya, Samuel D. Robinson, Thomas F. Hansen and Eivind A. B. Undheim*

16:40-16:55

Bee venom genes evolved before the stinger - Illuminating the origin of hymenopteran venom in a holistic approach including genomics & deep learning
[*Björn v Reumont*](#) and *Ivan Koludarov*

- 16:55-17:10 How did EUVEN contribute to expanding our knowledge of venom variation in the Nose-horned viper?
[Margareta Lakušić](#), [Maik Damm](#), [Roderich Süssmuth](#), [Juan Calvete](#) and [Fernando Martínez-Freiría](#)
- 17:10-17:35 Investigating the genetic basis of venom variation using Australian brown snakes (*Pseudonaja* spp.) as a model
[Cassandra Modahl](#), [Jory van Thiel](#), [Taline Kazandjian](#), [Cara Smith](#), [Rohit Patel](#), [Mark Wilkinson](#) and [Timothy Jackson](#)

Tuesday, September 24th

09:00-11:55

Scientific Session

Emerging Methodological Tools in Venom Research

CHAIR: *Benjamin-Florian Hempel, Maria P. Ikonomopoulou*

09:00-09:25

Analytical profiling of toxins in snake venoms for evoking zebrafish paralysis with parallel assessment of ion channel modulation

[Jeroen Kool](#)

09:25-09:40

Genetic manipulation of the sea anemone *Nematostella vectensis* unravels the role of venom in interspecific interactions and evolutionary trade-off

[Yehu Moran](#)

09:40-09:55

DeTox: A novel pipeline for Detection of Toxins in venomous animal transcriptomes

Allan Ringeval, [Sarah Farhat](#), [Alexander Fedosov](#), [Marco Gerdol](#), [Samuele Greco](#), [Lou Mary](#), [Maria Vittoria Modica](#) and [Nicolas Puillandre](#)

09:55-10:10

The potential of vibrational spectroscopy as an emerging tool for the biomolecular characterization and discrimination of crude venoms: A case study on the classification and individual variation of snake venoms as studied by FTIR spectroscopy

[Nasit Igci](#)

10:10-10:25

Antivenom downstream processing strategy as a platform for a high-quality human immunoglobulin G preparation as an urgent treatment option during emerging virus outbreaks

[Tihana Kurtović](#), [Sanda Ravlić](#), [Adela Štimac](#), [Sanja Mateljak Lukačević](#), [Ana Hećimović](#), [Saša Kazazić](#) and [Beata Halassy](#)

10:25-11:00

COFFEE BREAK

11:00-11:25

Casting an AI-powered net: Integrating AlphaFold with molecular dynamics to identify the natural target of a cone snail toxin

[Izhar Karbat](#), [Sapir Nutkewitz](#), [Daria Adam Steinberg](#), [Maytal Katz](#) and [Eitan Reuveny](#)

11:25-11:40

Spider venom gland organogenesis

[Giulia Zancolli](#)

11:40-11:55 Revealing Venom Secrets: Advances in Mass Spectrometry Imaging
[Benjamin-Florian Hempel](#)

CHAIR: *Maria Vittoria Modica*

11:55-12:40 Keynote Speaker: *Mandë Holford*
A venom trail from snails to cephalopods

12:40-14:00 LUNCH BREAK (SELF-ORGANIZED)

14:00-15:35 Scientific Session
Translational Strategies for Venom Exploitation

CHAIR: *Gregor Anderluh, Jan Prochazka*

14:00-14:25 The senolytic properties of animal venoms
Javier Moral-Sanz, Isabel Fernandez-Carrasco and [Maria Ikonomopoulou](#)

14:25-14:40 Paraspecific neutralization capacity of polyvalent snake antivenom
against *Montivipera raddei* venom
[Yasemin Numanoğlu Çevik](#) and [Mehmet Ali Kanat](#)

14:40-14:55 Identification of Novel Bioactive Compounds, Using *in vivo* Zebrafish
Phenotypic Assays
[Dimitris Beis](#)

14:55-15:10 Pore-forming toxins for advanced sensing technologies
*Marija Srnko, Gašper Šolinc, Matija Ruparčič, Ana Crnković, Marjetka
Podobnik and [Gregor Anderluh](#)*

15:25-16:00 COFFEE BREAK

16:00- 16:25 Design of nature-inspired stabilized peptides for GPCR drug discovery
[Christian W. Gruber](#)

16:25- 16:40 Development of *Galleria mellonella* (wax moth) larvae as a model for
snakebite envenoming
[Rachel Clare](#) and [Stefanie Menzies](#)

16:40-18:00

Poster Session

Comparative Proteomic Analysis of Venom from Three Snake Species:
Evaluating Software-Specific Protein and Peptide Profiles

Bruno Malheiro, Mert Karış, Bayram Göçmen, Ayse Nalbantsoy, Rui Vitorino

What we have discovered about Naja ashei venom so far...

Aleksandra Bocian, Hus Konrad Kamil, Buczkowicz Justyna, Petrilla Vladimir and Legath Jaroslav

SF-mi2 conotoxins: Diving into the world of EGF-like toxins

Enriko Robin Raidjoe, Thomas L. Koch, Celeste M. Hackney, Helena Safavi-Hemami and Lars Ellgaard

In silico synthesis of melittin determined by proteomic sequencing from
Apis mellifera anatoliaca venom, which has lipotoxic potential in skin
cancer cells

Oznur Su Yentur, Javier Moral, Yiannis Sarigiannis, Ekin Varol, H. Mehmet Kayili, Bekir Salih, Figen Çalışkan, Banu Yücel, Maria P. Ikonopoulou and Ayşe Nalbantsoy

Genomic and proteomic analysis of melittin structure of different
honeybee species from Türkiye and Cyprus; Venom and venom gland
samples

H. Mehmet Kayili, Ekin Varol, Kemal S. Korkmaz, Bekir Salih, Banu Yücel and Ayşe Nalbantsoy

Bioinformatic Analysis and Experimental Characterization of Novel Pore-
Forming Proteins from Mollusca with Potential for Nanopore Sensing

Matija Ruparčič and Gregor Anderluh

Characterization and design of actinoporin pores for the detection of small proteins

[Gašper Šolinc](#), [Marija Srnko](#), [Ana Crnković](#), [Franci Merzel](#), [Marjetka Podobnik](#) and [Gregor Anderluh](#)

Human stem cell-derived hepatocyte-like cells in a microfluidic device: an improved platform for assessing venom toxicology

[Joana S Rodrigues](#), [Sofia Relvas](#), [Pedro G M Condelpes](#), [Barbara Silva](#), [Raquel Bozzo](#), [Paula G Pinho](#), [Virginia Chu](#), [Fernando Remião](#), [João P Conde](#) and [Joana P Miranda](#)

Venom Proteins in Robber Flies: Determination of Electrophoretic Profile of *Machimus setibarbus* Loew, 1849 (Diptera: *Asilidae*) Venom and Its Enzymatic Activity

[Hakan Caliskan](#), [Hatice Kübra Yalçın](#), [İrem Atal](#) and [Figen Caliskan](#)

Combatting Multidrug Resistance of *Pseudomonas aeruginosa* with a *Naja ashei* Venom-Derived Antimicrobial Peptide

[Ewa Ciszkowicz](#), [Anna Miłoś](#), [Anna Nieczaj](#) and [Aleksandra Bocian](#)

Development of a custom-made bioinformatics tool for the automatic analysis of cone snails' transcriptomes

[Antonio Caballero Foncubierta](#), [Sergio Chulián Mantel](#), [Manuel Jiménez Tenorio](#), [Rafael Zardoya San Sebastián](#) and [Juan Carlos García Galindo](#)

Macrovipera lebetina lebetina's venom: Exploring its cytotoxic and antibacterial effects

[Noémie Brial](#), [Tolis Panayi](#), [Vicky Nicolaidou](#) and [Yiannis Sarigiannis](#)

Is there a difference in the clinical aspects of scorpionism between regions? A systematic literature review and meta-analysis

[Isabella Hubbard](#), [Kevin Healy](#), [Stuart Ainsworth](#), [Michel Dugon](#) and [Nicholas Casewell](#)

Investigating Animal Venom Peptides for Therapeutic Potential using Xenograft Melanoma Zebrafish Embryos

Sabela Fernández Vila, Pablo Cabezas-Sainz, Alvaro Jesús Arana Díaz, Javier Moral-Sanz, Isabel Fernández Carrasco, Maria P. Ikonopoulou and Laura E. Sanchez

Yeast surface display technology for the discovery of monoclonal antibodies against snake venom toxins

Stefanie Menzies, Camille Abada, Mark Wilkinson, Rohit Patel, Nicholas Casewell and Stuart Ainsworth

18:00-21:00

Cocktail

Wednesday, September 25th

09:00-10:25 Scientific Session
Short-Term Scientific Missions

CHAIR: *Stano Pekar and Dimitris Beis*

- 09:00-09:15 Characterizing toxin diversity across a phylum of predatory marine worms
Elena Andrés, Alfonso López-Solano, Ana Riesgo and Aida Verdes
- 09:15-09:30 The synergistic Anti-Tumoral Effect of OctPep-1 and Rapamycin in a Xenograft BRAF Melanoma Mouse Model
Isabel Fernández-Carrasco, Javier Moral-Sanz and Maria Ikonomopoulou
- 09:30-09:45 Training in phage-display antibody libraries
Stefanie Menzies
- 09:45-10:00 Widow spiders and their Venom toxicity (Araneae: *Steatoda nobilis*)
Blerina Vrenozi and Michel Dugon

10:00-12:30 Scientific Session
Novel Targets in Venom Research

CHAIR: *Sebastien Dutertre, Ayse Nalbantsoy, Agostinho Antunes*

- 10:00-10:25 Venomic adaptations of prey specialised spiders
Ondřej Michálek, Andrew A. Walker, Ondrej Šedo, Zbynek Zdrahal, Glenn King and Stano Pekár

10:25-11:00 COFFEE BREAK

- 11:00-11:15 What is animal venom? Reassessing a manipulative weapon
Ronald Jenner, Nicholas Casewell and Eivind Undheim

- 11:15-11:30 Lacewing venom: Detailed insights into the venom system of a neglected group of venomous insects
Marius F. Maurstad, Eivind Undheim, Pedro G. Nachtigall, Jan Philip Oeyen, Iris Bea Ramiro, Andy Sombke, Sebastian Büsse and Kjetill S. Jakobsen
- 11:30-11:45 Purification and partial characterization of a novel Phospholipase A2 enzyme from the Yığılca Honeybee (*Apis mellifera* L.) venom of Türkiye
Figen Caliskan, Fernando Zamudio, Timoteo Olamendi-Portugal and Gerardo Corzo
- 11:45-12:00 The repeated evolution of spider venom double-knot Neurotoxins
Robin Aasegg Araya, Marius F. Maurstad, David Wilson, Mehdi Mobli, Kjetill S. Jakobsen and Eivind A.B. Undheim
- 12:00-12:15 Toxin Repertoire of the False Black Coral *Savalia savaglia* from Mediterranean Mesophotic Zone Revealed by RNAseq Approach
Dany Dominguez Perez, Serena Leone and Maria Vittoria Modica
- 12:15-12:30 Comparison of venom efficacy of euryphagous and ant-eating spiders against different prey
Andrea Quattrococo, Ondřej Michálek and Stano Pekár

12:30-14:00 LUNCH BREAK (SELF-ORGANIZED)

- 14:00-14:25 From life-threatening poisons to life-saving cardiovascular drugs
Simona Saponara
- 14:25-14:40 Black widow spider envenomation in Albania (*Latrodectus tredecimguttatus*): Hospital Case Studies and Local Knowledge
Blerina Vrenozi, Eliana Ibrahimi and Davide Lonati
- 14:40-14:55 The Architecture of Cephalopod Venom Systems: A Histological and Developmental Approach
Kim Nadine Kirchhoff and Mande Holford

CHAIR: *Sebastien Dutertre*

- 14:55-15:40 Keynote Speaker: *Richard Lewis*
Developmental shifts in venom composition underlie the evolution of mollusc- and fish-hunting cone snails

15:40-16:10 COFFEE BREAK

16:10-17:00 Management Session
MC Meeting

CHAIR: *Maria Vittoria Modica and Gregor Anderluh*

17:00-18:00 Management Session
Future Networking Opportunities

17:00-17:10 The COST Innovators Grant
Maria Ikonomopoulou

17:10-17:20 The Erasmus + Programme
Juan Carlos Garcia Galindo

17:20-17:30 The MSCA Doctoral Networks
Gregor Anderluh

17:30-17:40 The RISE Programme
Yiannis Sarigiannis

17:40-18:00 **Open Discussion**