

PROGRAMME

MONDAY, 5 FEBRUARY

- 09.00-11.00h Registration
- 10.00-10.30h Welcome coffee
- 10.30-10.45h **OPENING**
Ignacio Alfonso, IQAC-CSIC, Barcelona
David Andreu, Pompeu Fabra University, Barcelona
- 10.45-13.00h **SESSION I**
Co-chairs: Maria José Camarasa and Ernest Giralt
- 10.45-11.30h
PLENARY LECTURE
Mechanistic and cellular insight into medically-relevant glycosidases: conformations, itineraries and destinations
Gideon J. Davies, Department of Chemistry, University of York, UK
- 11.30-12.00h
INVITED LECTURE
The total synthesis of proteins by solid phase ligation
Oleg Melnyk, CNRS & Pasteur Institute, University of Lille, France
- 12.00-12.30h
ORAL COMMUNICATIONS
GEQB PhD Thesis Award
OC1- Jessica Rodríguez: Specific recognition and modification of DNA using synthetic systems
OC2- Jimena Fernández-Carneado: Quality by design in industrial manufacturing of long peptides (20- 50 AA) by SPPS
- 12.30-13.00h
INVITED LECTURE
Glycochemistry and molecular recognition: rational and combinatorial approaches
Juan Luis Asensio, IQOG-CSIC, Madrid, Spain
- 13.00-14.30h Lunch break

- 14.30-16.00h **SESSION II**
Co-chairs: Miriam Royo and Òscar Millet

FLASH COMMUNICATIONS

- FC1- Alexandra Bertrán**: Design and synthesis of selective MMP-9 inhibitors for the treatment of epilepsy.
- FC2- David Bouzada**: Synthesis and study of the viral gp23.1 hexamer as a scaffold for nanotechnological applications
- FC3- Antonio Di Maio**: Novel multivalent structures to functionalize proteins and surfaces for lectin interaction studies
- FC4- Jacobo Gómez González**: Peptide-directed self-assembly of DNA-binding helicates
- FC5- Salvador Guardiola**: Toward new inhibitors of the EGF-EGFR interaction: design of metabolically stable bicyclic peptides
- FC6- Carles Mas-Moruno**: Peptidic-based platforms and peptidomimetics as biomolecular tools to harness cell behavior on biomaterials
- FC7- João Medeiros-Silva**: Insight to the nisin-lipid II pore in native membranes with atomic resolution – a Solid-state NMR study
- FC8- Manuel Montalbán-López**: The enterocin AS-48, prototype of head-to-tail cyclized bacterial antimicrobial peptides
- FC9- Filipa D. Oliveira**: Exosomes as drug delivery systems in metastatic breast cancer
- FC10- Valle Palomo**: *In situ*-click chemistry: an ideal target based approach for the generation of multitarget drugs
- FC11- Clara Pérez-Peinado**: Mechanisms of bacterial membrane permeabilization of snake venom-derived peptides crotalictidin (Ctn) and Ctn[15-34]
- FC12- José J. Reina**: Glycosyl aldehydes as new scaffolds in the synthesis of glycoconjugates for protein selective recognition and cell targeting
- FC13- Fernanda Rodríguez-Otormin**: Design of polymer therapeutics as combination therapy for the treatment of triple negative breast cancer
- FC14- Pablo Tovillas**: β 2-Glycosyl amino acids from chiral isoserine sulfamidates
- FC15- Mónica Varese**: Beyond homochirality in peptide sequences
- FC16- Philippe Vassault**: A flexible SPE/LC/MS/MS platform for simultaneous quantification of multiple amyloid peptides in cerebrospinal fluid

16.00-16.30h Coffee-break

16.30-18.30h **SESSION III**

Co-chairs: Meritxell Teixidó and José Luis Mascareñas

16.30-17.00h

INVITED LECTURE

Labelling peptides with activatable fluorophores for enhanced live cell imaging

Marc Vendrell, University of Edinburgh, UK

17.00-17.45h

ORAL COMMUNICATIONS

OC3- Albert Escobedo: A stabilizing role of side-chain to main-chain hydrogen bonds in polyQ Helices

OC4- Roberto Quesada: Anion transport and supramolecular medicinal chemistry

OC5- Xavier Vila-Farrés: Human microbiome inspired new antimicrobial peptides

17.45-18.30h

PLENARY LECTURE

Synthesis, biological activity and therapeutic potential of azapeptide allosteric CD36 modulators of macrophage-driven Inflammation

William Lubell, University of Montreal, Canada

Speaker sponsored by  Janssen

18.30-19.15h EPI & GEQB business (Marie Curie and Charles Darwin rooms)

TUESDAY, 6 FEBRUARY

08.30-10.15h **SESSION IV**

Chair: Paula Gomes

08.30-09.15h

PLENARY LECTURE

Synthetic proteins: DNA and carbohydrate mediated assembly of artificial proteins and nanoassemblies

Knud J. Jensen, Department of Chemistry, University of Copenhagen, Denmark

09.15-09.45h

INVITED LECTURE

Stem cell-niche interactions in the adult mouse brain

Isabel Fariñas, Departamento de Biología Celular and CIBERNED, Universidad de Valencia, Spain

09.45-10.15h

INVITED LECTURE

Peptide-conjugated nanomaterials for biomedical applications

Lino Silva Ferreira, University of Coimbra, Portugal

10.15-10.45h Coffee-break

10.45-13.00h **SESSION V**

Co-chairs: Sonsoles Martín-Santamaría and Nuno Santos

10.45-11.15h

INVITED LECTURE

Disabling unexplored key enzymes in bacteria to unlock resistance to antibiotics

Concepción González-Bello, Centro Singular de Investigación en Química Biolóxica e Materiais Moleculares (CIQUS) and Departamento de Química Orgánica, University of Santiago de Compostela, Spain

11.15-12.00h

ORAL COMMUNICATIONS

OC6- Mariana Barbosa: Development of novel peptide-based coatings with antibacterial properties

OC7- Sira Defaus: Expanding the potential and multivalency of the B₂T synthetic peptide vaccine against foot-and-mouth disease virus

OC8- Gonzalo Jiménez-Osés: Accelerating discovery in chemical biology by computation

12.00-12.30h

INVITED LECTURE

mRNA fate is controlled by highly regulated RNA-binding proteins

Irene Díaz-Moreno, Instituto de Investigaciones Químicas (IIQ), cicCartuja, Universidad de Sevilla – CSIC, Sevilla, Spain

12.30-13.00h

ORAL COMMUNICATIONS

OC9- Vera Neves: Novel peptide delivery systems for blood brain barrier translocation with a focus on Alzheimer's disease

OC10-Stefano Tomassi: Drifting in the N-terminal Region of CXCL12: from where we started to where we arrived

13.00-14.30h Lunch break

14.30-16.00h **SESSION VI**

Co-chairs: Maria Jesús Vicent and Miguel Castanho

14.30-15.00h

INVITED LECTURE

Antimicrobial, anticancer and internalization properties of cyclic gomesin: a membrane link

Sónia Henriques, Institute of Molecular Bioscience, University of Queensland, Australia

15.00-15.30h

INVITED LECTURE

Challenging diagnostic multiplexation threats through nanobiotechnological approaches

Pilar Marco, IQAC-CSIC, Barcelona, Spain

15.30-16.00h

ORAL COMMUNICATIONS

OC11- Ignacio Delso: New inhibitors of human O-GlcNAc transferase: spectroscopic, computational and biological studies

OC12-Susana Dias: Novel membrane-targeting antibacterial peptides derived from viral capsid proteins

16.00-16.30h Coffee-break

16.30-18.15h **SESSION VII**

Co-chairs: May Morris and Francisco Corzana

16.30-17.15h

ORAL COMMUNICATIONS

OC13- Ruth Pérez-Fernández: Protein-directed dynamic libraries: insights into real-time chemical processes

OC14-Gemma Triola: Quantitative profiling of protein S-acylation

OC15-Daniel Pulido: Design of a true bivalent ligand with picomolar binding affinity for a G protein-coupled receptor (GPCR) homodimer

17.15-17.45h

INVITED LECTURE

The use of cell-penetrating peptides to study the structure and function of G protein-coupled receptor oligomers

Leonardo Pardo, Autonomous University of Barcelona, Spain

17.45-18.15h

INVITED LECTURE

Artificial mimetic systems for molecular recognition in bioengineering

Cecília Roque, New University of Lisbon, Portugal

20.00-22.00h Gala dinner
Restaurant Marítim
Moll d'Espanya, 4 - Barcelona

All ticket holders welcome.

Extra dinner tickets can be bought from the Meeting secretariat at the venue on Monday, 5 February.

A transportation service will be provided to attend the Gala dinner.

WEDNESDAY, 7 FEBRUARY

- 08.30-10.15h **SESSION VIII**
Co-chairs: Anna Grandas and Amadeu Llebaria
- 08.30-09.00h
INVITED LECTURE
GEQB Young Researcher Award
Understanding the role of glycoconjugates as key molecules for cell survival and communication in prokaryotes and eukaryotes
Alba Silipo, Department of Chemical Sciences, University of Naples Federico II, Italy
- 09.00-09.30h
INVITED LECTURE
Inhibition of host-pathogen protein interaction networks: a promising avenue for new antibiotics
Marc Torrent, Autonomous University of Barcelona, Spain
- 09.30-10.15h
ORAL COMMUNICATIONS
- OC16- Emilio Lence**: Novel pathway of protein haptentation by β -lactams, a key step in antibiotic photoallergy
- OC17-Marisa Juanes**: Supramolecular recognition and selective lectin uptake by cell penetrating glycopeptides
- OC18-Jean-Marc Billod**: Applying computational methods to understand Toll-like Receptor 4 activation mechanisms
- 10.15-10.45h Coffee-break
- 10.45-13.30h **SESSION IX**
Co-chairs: Gemma Fabriás and Jesús Jiménez-Barbero
- 10.45-11.15h
INVITED LECTURE
Unravelling the antibiofilm activity and mechanism of action of pepR
Ana Salomé Veiga, Institute of Molecular Medicine, University of Lisbon, Portugal

- 11.15-11.45h
ORAL COMMUNICATIONS
- OC19- Macarena Sánchez-Navarro**: Towards a protein replacement therapy for Friedreich ataxia: modifying frataxin with blood-brain barrier peptide shuttles
- OC20-Mantas Liutkus**: Towards artificial light harvesting systems
- 11.45-12.15
INVITED LECTURE
Dendrimeric structures as a tool in biomedicine
Ezequiel Pérez-Inestrosa, Department of Organic Chemistry, University of Málaga, IBIMA, Spain
- 12.15-12.45
INVITED LECTURE
Catalysis by natural and engineered glycosidases
Carme Rovira, Department of Chemistry, University of Barcelona, Spain
- 12.45-13.30h
PLENARY LECTURE
Phenotypic and chemotactic targeting
Giuseppe Battaglia, Department of Chemistry and Department of Chemical Engineering, University College London, UK
- 13.30-13.45h **FLASH & POSTER AWARDS**
CLOSING
Ignacio Alfonso, IQAC-CSIC, Barcelona
David Andreu, Pompeu Fabra University, Barcelona

13.45-15.00h Lunch