PRINCIPE FELIPE
CENTRO DE INVESTIGACION

11th International Symposium on Polymers Therapeutics From Laboratory to Clinical Practice

23rd - 25th May 2016

Centro de Investigación Principe Felipe
Valencia, Spain

More information: ISPT2016@cipf.es

11th International Symposium on Polymer Therapeutics:

From Laboratory to Clinical Practice

Monday 23rd May – Wednesday 25th May 2016

Valencia, Spain

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Background & Objectives

Polymer Therapeutics include biologically active polymeric drugs and polymeric sequestrants, polymer-protein and polymer-drug conjugates, block copolymer micelles, and the supramolecular assemblies that form multi-component polyplexes designed to promote cytosolic delivery of genes, siRNAs and proteins. These constructs are amongst the most successful examples of first generation "Nanomedicines" with a growing number of products approved by Regulatory Authorities for routine clinical use and many others progressing through clinical trials as single agents or as components of combination therapy regimes. Recently, ***the first follow-on ("generic") Polymer Therapeutics*** *have begun to emerge and* ***the first polymer-drug conjugate, Movantik®, just came to market.***

Developments in sophisticated synthetic chemistry are leading to the production of complex three-dimensional polymeric architectures, including dendrimers, dendronized polymers and self-assembling nano-sized particles, and many include new mechanisms for externally triggered degradation. Many polymeric compounds are also being developed to be used as imaging agents and theranostics. Furthermore, as clinical applications broaden to include treatments for infectious and inflammatory diseases, tissue repair and regeneration, and diseases of the ageing population, interest has grown around the application of biodegradable polymers for chronic treatments.

Objectives: Unlike other drug delivery symposia that have a broader remit, this unique conference series was specifically established to provide a forum for interdisciplinary exchange of state-of-the-art techniques and advances in knowledge relating to the design, clinical development and commercialization of **Polymer Therapeutics**. The key topics discussed are:

- **POLYMERS** - synthesis, safety, development to clinical use
- **LINKERS** - design, mechanisms for triggered degradation
- **OPPORTUNITIES FOR TARGETING**
- **PROPOSED CLINICAL USE** - models for determining *in vitro* and *in vivo* pharmacokinetics, pharmacodynamics, safety
- **CURRENT CLINICAL STATUS**
- **INDUSTRIAL DEVELOPMENT AND REGULATION**

The **11th International Symposium on Polymer Therapeutics** will provide:

- A chance for world-renowned scientists to share their recent research and vision for the future of **Polymer Therapeutics** to attendees in the context of interdisciplinary research at the interface of biology, chemistry, pharmaceutical sciences, and medicine.
- The latest and most exciting developments in polymer technology and the biological and clinical disciplines relating to **Polymer Therapeutics.**
- News on industrial and medical progress in the transfer of **Polymer Therapeutics** from the laboratory to the clinic.
- Great opportunities for the active participation of young scientists from around the world through a number of Travel Grants to support attendance.

Who Should Attend?

- Academics active in, or who have recently joined, the field of **Polymer Therapeutics** and **Nanopharmaceuticals.**
- Industrialists, either active in the field or those requiring an update/introduction of the current status of **Polymer Therapeutics** and **Polymeric Nanopharmaceuticals** and issues relating to the successful translation from the Laboratory to the Clinic.
- Post-Doctoral Scientists and Postgraduate Students working in this interdisciplinary field.

PROVISIONAL LIST OF SPEAKERS

(Further names to be added relating to ongoing clinical studies and from submitted abstracts)

Plenary Lectures

Kazunori Kataoka (University of Tokyo, Japan)

Polymeric Micelles from a rational design to the clinics

Justin Hanes (Johns Hopkins University, Baltimore, USA)

Understanding Penetration through Mucosal Barriers: A Tool for Improved Design of Drug Delivery Systems

Antony Godwin (Polytherics, UK) ***TBC***

The importance of linking chemistry: From Antibody-Drug Conjugates to Polymer Conjugates

Invited Lectures

Andreas Heise (Royal College of Surgeons, Ireland)

Well defined polypeptides for therapeutic delivery

David Owen (StarPharma, Australia)

DEP™ Docetaxel: preclinical evaluation and early clinical translation

Cristianne Rijcken (Cristal Therapeutics, Netherlands)

CriPec® Nanomedicines: Principles, preparation, preclinical evaluation and early clinical translation

Jean-Chistophe Leroux (ETH Zurich, Switzerland)

Macromolecular drugs in Celiac disease

Ruth Duncan (Cardiff, UK)

Polymer Therapeutics: Current Status and Quality by Design (QbD)

Maria Kavallaris (University of New South Wales, Australia)

Designing Polymer Therapeutics for the Treatment of Childhood Cancer

Robert Luxenhofer (Julius-Maximilians-University, Würzburg, Germany)

Reproducibility in Polymer Science and Polymer Therapeutics: Consequences for Research, Translation, and Society

Alex Adronov (McMaster University, Ontario, Canada)

Dendrimer-based imaging agents for biomedical applications

Speaker TBC (AstraZeneca, UK)

Movantik (Naloxegol): the first polymer-drug conjugate to reach the market

Tacey Viegas (Serina Therapeutics, USA)

SER-214 (polyoxazoline-rotigotine conjugate) in the treatment of Parkinson's disease

Alexander N. Zelikin (Aarhus University, Denmark)

Macromolecular (pro)drugs as antiviral agents

Atsushi Maruyama (Tokyo Institute of Technology, Japan)

Design of polymer materials to activate functional DNA and peptides

Discussion Leaders will include (many will also present their latest research)

M. Ashford	(AstraZeneca, UK)
M. Barz	(Univ. Mainz, Germany)
M. Bradbury	(Memorial Sloan Kettering Cancer Center, USA)
P. Dhal	(Genzyme, USA)
F. Greco	(Univ. Reading, UK)
C. Li	(M.D. Anderson Cancer Center, USA)
H. Maeda	(Sojo Univ., Japan)
M. Malkoch	(Polymer Factory & KTH Royal Institute of Technology, Sweden)
L. Mayer	(Celator Pharma, USA)
S. Muro	(Univ. Maryland, USA)
Y. Nagasaki	(Univ. Tsukuba, Japan)
G. Pasut	(Univ. Padua, Italy)
R. Gaspar	(Univ. Lisbon, Portugal)
J. San Roman	(CSIC, Spain)
S. Salmaso	(Univ. Padua, Italy)
D. Thomas	(Cardiff Univ., UK)

Abstracts

Deadline: 29th February 2016
(Abstracts received after the above deadline cannot be guaranteed to be accepted)

- **ALL SPEAKERS** must provide a single A4 page abstract following the format/sample provided below.
- All **DELEGATES** are encouraged to submit abstracts describing their latest work (format/sample below).
- **Any applications for a Travel Grant must also be accompanied by an abstract.**
- **POSTERS** will be displayed throughout the meeting (Portrait size 90 x 120 cm)**.**
- **All Abstracts** must be accompanied by registration **with payment**.

Instructions for Abstract Preparation (See sample abstract below)

Abstracts are an important part of this interdisciplinary meeting and the text should be understandable to the inter-disciplinary readership. Thus, the **"Introduction"** and **"References"** sections of the abstract are particularly important.

All Abstracts will be reproduced camera-ready in the Symposium Proceedings, and the Proceedings will be published as of the Conference date.

Single page of A4 text only. Font: minimum size 11 (Calibri), single spacing
Authors, Presenting Author first**,** Addresses **(Centered)**
INTRODUCTION (Headings Bold Caps)
RESULTS AND DISCUSSION
REFERENCES Font size 10 - up to 5 key references

Please save your abstract as '**Abstract_Presenter last name_ispt2016'** and submit as both word and pdf files to **ispt2016@cipf.es**.

SAMPLE ABSTRACT FORMAT

TARGETING A RARE AMYLOIDOTIC DISEASE WITH RATIONALLY DESIGNED POLYMER CONJUGATES

Inmaculada Conejos-Sánchez[1], Isabel Cardoso[2], Maria Joao Saraiva[2], María J. Vicent [1]

[1] Centro de Investigación Príncipe Felipe. Polymer Therapeutics Laboratory. Av. Eduardo primo Yúfera 3, 46012 Valencia, Spain. [2] Instituto de Biologia Celular e Molecular (IBMC), 4150-180 Porto, Portugal

INTRODUCTION

Polymer therapeutics encompass, among others, polymer-drug conjugates. These nanosystems have been coined as innovative chemical entities capable to improve bioactive compound properties and decrease their inherent limitations[1]. After achieve clinical arena, a second generation of conjugates is now focused on improved polymer structures, polymer-based combination therapy and novel molecular targets which will further progress this platform technology.[2] Following stated strategies, novel specific nanoconjugates for the treatment of neuropathological disorders are proposed in this study.

Amongst the different types of amyloidosis were Alzheimer's and Parkinson's diseases are renowned examples, Familial amyloid polyneuropathies (FAP) constitute a group of inherited amyloidoses. One of the most common FAP is caused by a mutated protein called transthyretin (TTR), which forms amyloid deposits mainly in the peripheral nervous system. TTR has been proposed to trigger neurodegeneration through engagement with the RAGE receptor. Prof. M.J. Saraiva *et al.* have discovered a specific peptidic sequence (named RAGE peptide) able to suppress TTR aggregate-induced cytotoxicity in cell culture[3], as well as that Doxycycline (Doxy) acts as a TTR fibril disrupter *in vitro* and *in vivo*[4]. Based on both statements, avoidance of TTR aggregates cytotoxicity and breaking up TTR fibrils are promising targets for therapeutic proposes, and even more their combination.

RESULTS AND DISCUSSION

Because of the well-known limitation of specific peptide delivery *in vivo* (i.e. low stability and possible immunogenicity), we performed RAGE peptide PEGylation exploiting biodegradable and non-biodegradable linkages. Conjugates were biophysically characterized, also looking at conformation in solution, and its activity as TTR cytotoxicity inhibitors was studied. TTR binding affinity was determined by surface plasmon resonance. Concerning Doxy, polyglutamic acid (PGA) was the selected vehicle due to its multivalence, biodegradability, and biocompatibility. Drug loading was tailored yielding conjugates ranging from 4 to 30 % wt total Doxy content. Conjugates characterization included HPLC, UV, and NMR-spectroscopy analysis. Activity test was performed through fibril disruption assays *in vitro*. Techniques as TEM and DLS were exploited to evaluate structure and sizes of the generated species.

After the appropriate rational design, obtained results confirmed that polymer conjugation of both drugs retained and/or improved drug activity *in vitro*. *In vivo* studies in FAP animal model are being carried out with the best candidates and their combinations. Final results of this report would offer the opportunity to develop, for the first time, efficient macromolecular FAP inhibitors for clinical applications. Moreover, it is expected that the combination approach will constitute an alternative that synergistically enhance the therapeutic value of these prodrugs.

REFERENCES

1. Duncan, R. *Nat Rev. Cancer* **2006**, 6, 688-701
2. Vicent, M.J.; Ringsdorf, H.; Duncan, R. *Adv Drug Del Rev* **2009**, 61, 1117-1120
3. Monteiro, F.A.; Cardoso, I.; Mendes, M.; Saraiva, M.J. *FEBS Letters* **2006**, 580, 3451-3256.
4. Cardoso I., M.J. Saraiva, *The Faseb J.* **2006**, 20, 234-

REGISTRATION

- **PLEASE NOTE** that participation will be limited to around 200 delegates, and as previous conferences have been oversubscribed, we highly recommended early registration in order to secure a place.

- **Registration** should be made using the online registration form (see **ispt.cipf.es**) and **must** be accompanied by the full payment made by **bank transfer** (See below).

- **Abstract** submission **must** be accompanied by registration and payment
    - Please save your abstract as '**Abstract_Presenter last name_ispt2016'** and submit your abstract as both word and pdf files to **ispt2016@cipf.es**).

- All recipients of **Travel Grants** (see below) will be notified by March 2016 and the award will be paid by cheque at the Symposium

- The **Registration Fee** includes a copy of the Symposium Proceedings, tea/coffee, the Welcoming Dinner on Monday evening and lunches on Monday and Tuesday

Registration Fee (VAT excluded)	Before 11th March 2016	After 11th March 2016
Industry	600 €	750 €
Academic	450 €	550 €
Postgraduate Student	250 €	350 €

- Postgraduate student applications **must** be supported by a letter from their supervisor confirming student status (Please send to **ispt2016@cipf.es**).

- **Cancellation Policy:** A refund of 80% will be made in case of cancellation before the end March 2016 (a handling fee is charged). After this date, no refunds will be made.

Form of Payment

Please send proof of bank transfer to **ispt2016@cipf.es**, saved as "Payment_Presenter last name_ispt2016".

Account holder:	FUNDACIÓN DE LA CV CENTRO DE INVESTIGACIÓN PRÍNCIPE FELIPE (Av. Eduardo Primo Yúfera 3. 46012-Valencia. Spain).
VAT:	ESG46923421
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Bank Transfer:	2038 9938 4160 0020 4038
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IBAN:	ES14 2038 9938 4160 0020 4038
SWIFT/BIC:	CAHMESMMXXX

APPLICATIONS FOR A TRAVEL GRANT

PhD students and Early Career Scientists without access to travel funds should indicate their intention to apply for a Travel Grant on the Registration Form and also send a supporting letter from their PhD supervisor (students) or Head of Department. Only those applicants also submitting an Abstract will be considered for a Travel Grant, and the number of Awards made will be dependent on the Sponsorship funds available. Successful applicants will be notified by the end March 2016.

ACCOMMODATION AND LOCAL ARRANGEMENTS

Venue: All lectures and poster sessions will take place at the 'Centro de Investigación Príncipe Felipe', Av. Eduardo Primo Yúfera 3, E-46012, Valencia, Spain.

Meeting Schedule: **The Meeting will commence at 9.00 am on Monday 23rd May 2016 (Registration from 7.45 am) and end at lunchtime on Wednesday 25th May 2016.** (This will allow delegates to arrange any additional meetings on the afternoon of Wednesday 25th if so required).

TRAVEL

The CIPF is located next to the world famous "Ciudad de las Artes y las Ciencias" in Valencia (see http://www.cipf.es/web/portada/contacto for map) and is close to the city center of Valencia.

Valencia International Airport is served by low cost airlines from most European cities. Most intercontinental flights arrive at Barcelona or Madrid.

- Taxis from the airport to Valencia city center take around 20 min (costs around 25€).
- Metro trains run between the airport and the city center, taking around 20 minutes and costing around 5€ (see map at www.metrovalencia.com).
- An Aero-Bus also departs every 20 minutes to the center and costs around 2.5€.
- Detailed information on travel to and airport can be found here - http://www.valencia-cityguide.com/tourist-information/transport/transport-from-the-airport-to-the-city.html

Alicante International Airport is also served by many flights from most European cities including low cost airlines. Regular bus links provide transport to Alicante train station with a direct link to Valencia city center (Return ticket costs around 40€ and takes between 2-3 hours - See www.renfe.es). The bus link also provides transport to the bus station which provides further transport options to Valencia.

Barcelona International Airport El Prat is also served by many flights from most European cities including low cost airlines. A direct train can be taken from El Prat Airport to Barcelona Sans Train station, from where connections with Valencia can be made (Return ticket costs around 70€ and takes between 3-4 hours See Renfe.es)

Train links between Madrid (Ave from Atocha), Barcelona (Euromed from Sans Estació), and Alicante (Estación Alicante) provide a quick an easy means of arriving into Valencia Estación del Norte or Valencia Joaquín Sorolla. We highly recommend that you book and buy your train tickets in advance, with electronic tickets available at www.renfe.es).

Weather

Valencia lies on the Mediterranean, and spring is very pleasant and generally sunny with temperatures generally around 20-25 ^{oC}.

Accommodation

There are many hotels within 10-15 minutes' walk of the conference (CIPF) to suit all price ranges, and we request that delegates book their own accommodation. To facilitate this we have included some suggestions and their locations below. We also highly recommend that you PLEASE book your accommodation early as possible as Valencia hosts many international events and room availability can be limited.

Suggested Hotels

More details can be found on the conference website (**ispt.cipf.es**), and additional hotel/hostel suggestions can be found at www.valencia-cityguide.com/accommodation/hotels-accommodation.html.

1. Holiday Inn Express (3*), Escritor Rafael Ferreres, 22
2. Hotel NH Valencia Las Artes (4*), Av Instituto Obrero, 28
3. Hotel Medium Valencia (4*), Calle General Urrutia, 48
4. ILUNION Aqua 3 and 4 (3*,4*), Calle Luis García Berlanga, 19-21
5. TRYP Valencia Oceanic Hotel (4*), Calle del Pintor Maella, 35
6. AC Hotel Valencia (4*), Avda. de Francia, 67
7. Barceló Valencia (4*), Av. de França, 11
8. Hotel Beatriz Rey Don Jaime (4*), Avenida de Baleares, 2
9. Abba Acteón Hotel (4*), Calle Vicente Beltrán Grimal, 2
10. Hotel Valencia Center (4*), Avenida Francia, 33