

**European IP – Galenos Course**

**5 – 14 September 2005**

# **Cyclodextrins and their use in life sciences**

**University of Lisbon**

Preliminary Programme (18/8/2005)

### Monday 5/9/2005

- 8:00 Registration
- 9:00 Welcome presentation and programme presentation, Rector of the Lisbon University, Dean of the Lisbon University, H. Marques, Univ. Lisbon, Portugal
- 9:30 General Introduction about cyclodextrins – H. Marques, Univ. Lisbon, Portugal
- 10:30 Cyclodextrins' properties. Complex formation. Examples. – H. Marques, Univ. Lisbon, Portugal
- 11:30 Solubilising poorly soluble drugs using various techniques including cyclodextrins – Teresa Carvajal, Univ. Purdue, USA
- 12:30 Molecular Modelling as prediction for complex formation – Rita Guedes, Univ. Lisbon, Portugal
- 13:15 Lunch
- 14:30 Cyclodextrins and its application in Pharmaceutical Technology – J. Torres Labandeira, Univ. Santiago Compostela, Spain
- 15:30 The effects of cyclodextrins on drug bioavailability and permeability through biological membranes – T. Loftsson, Univ. Reykjavik, Iceland
- 16:30 Cyclodextrins and biopharmaceutic classification of drugs – G. Valsami, Univ. Athens, Greece
- 20:00 Welcome Reception

### Tuesday 6/9/2005

- 9:30 Preparation of new polymers that form hydrogels and can be incorporated in different pharmaceutical dosage forms – J. Torres Labandeira, Univ. Santiago Compostela, Spain
- 10:30 Self-association and non-inclusion complexes – T. Loftsson, Univ. Reykjavik, Iceland
- 11:00 Captisol® (sulfobutyl ether beta cyclodextrin): from concept to regulatory approval. – G. Mosher, CyDex, Inc., USA
- 12:30 Lunch
- 14:00 Solid/powder characterisation typical thermal methods: DSC, TGA. Spectroscopic methods: Fluorescence, NIR and Raman. SEMs, microscopy. Powder processing: spray-drying, freeze drying – Teresa Carvajal, Univ. Purdue, USA
- 15:00 General Introduction about Preparation and Characterisation Methods – H. Marques, Univ. Lisbon, Portugal
- 16:00 Supercritical fluids – T. Casimiro, Univ. Nova Lisbon, Portugal
- 16:30 Supercritical CO<sub>2</sub> as a method for complex formation – S. Junco, Univ. Lisbon, Portugal
- 17:00 Workshops on past sessions – H. Marques, Univ. Lisbon, Portugal

### Wednesday 7/9/2005

- 9:30 Analytical applications of cyclodextrins – L. Gouveia, Univ. Lisbon, Portugal

- 10:30 Racemic separation by cyclodextrins – I. Coelho, Univ. Nova Lisbon, Portugal
- 11:30 Cyclodextrins as modelling agents for drug controlled release – C. Fernandes, Univ. Lusofona, Lisbon, Portugal
- 12:30 Lunch
- 14:30 The different fields of application of betacyclodextrin and its derivatives; opportunities and challenges in industrial applications – X. Parissaux, Roquette, France
- 17:00 Drugs innovation and social implications – J. Morais, Univ. Lisbon, Portugal

#### Thursday 8/9/2005

- 9:00 Cyclodextrins and particulate systems – A. Bochot, Univ. Paris Sud, France
- 11:00 Drug solubilization and stabilization – T. Jarvinen, Univ. Kuopio, Finland
- 12:00 Cyclodextrins in Oral and Buccal Drug Delivery. Case-studies – T. Jarvinen, Univ. Kuopio, Finland
- 13:00 Lunch
- 14:30 Skin / permeation enhancement – H. Ribeiro / E. Faustino, Univ. Lisbon, Portugal
- 15:00 Cyclodextrins in Topical Drug delivery. Case-studies – T. Jarvinen, Univ. Kuopio, Finland
- 15:30 Lung delivery and DPIs – H. Marques, N. Ramalhete, R. Almeida, Univ. Lisbon, Portugal
- 16:00 New Device for lung delivery – A. Gonçalves, Hovione, Portugal
- 16:30 Sterile dosage forms: Injections / ophthalmics – H. Marques / A. Brandão, Univ. Lisbon, Portugal
- 17:00 Injections with cyclodextrins in the market – development and production – Speaker to be announced, Pfizer, UK
- 18:00 Workshops on past sessions – H. Marques, Univ. Lisbon, Portugal

#### Friday 9/9/2005

- 9:30 Delivery of vaccines and other macromolecules using minimally invasive technologies – P. Green, Becton Dickinson and Co, USA
- 10:30 Laboratory course 1: Phase solubility studies (preparation and incubation)
- 12:30 Lunch
- 14:00 Liposomes – Eugenia Cruz, INETI, Lisbon, Portugal
- 15:00 Cyclodextrins in Liposomes for Drug Delivery – Sophia Antimisiaris, Univ. Patras, Greece
- 16:00 Laboratory course 2: Cyclodextrins-drugs complex characterisation (several techniques)

#### Saturday 10/9/2005

- 9:30 Students day: Posters presentation
- Short communications related to the posters from European Galenos students
- 13:00 Lunch

Afternoon: Discovering Lisbon

Sunday 11/9/2005

Social event: Day trip (historical visit to be confirmed and details to be announced)

Monday 12/9/2005

- 9:00 Potential of nanotechnology for Advanced Drug Delivery – C. Lehr, Univ. Sarbrücken, Germany
- 10:00 Laboratory course 3. Phase solubility studies (sampling, results interpretation and conclusion)
- 13:00 Lunch
- 14:30 Cyclodextrins in pellets – J. Pinto, Univ. Lisbon, Portugal
- 15:30 Laboratory course 4: In-vitro tests for topical formulations.

Tuesday 13/9/2005

- 9:30 Vaccines and cyclodextrins – A. Almeida, Univ. Lisbon, Portugal
- 10:00 Laboratory course 5: In-vitro tests for pulmonary formulations
- 13:00 Lunch
- 14:30 Laboratory course 6: Molecular modelling by computation.
- 16:00 Pharmaceutical research in the dawn of the 21<sup>st</sup> century: nanomedicines and biotechnology – R. Gaspar, Univ. Coimbra, Portugal
- 17:00 Overview of all Lectures and clarification of final questions – H. Marques, Univ. Lisbon, Portugal

Wednesday 14/9/2005

- 9:30 Final examination for Galenos students and filling of a questionnaire course evaluation form
- 11:00 Concluding remarks and participation certificates
- 12:30 Lunch
- 14:00 Departure