

**European Conference
on
Drug Delivery
and
Pharmaceutical Technology**

Programme

**Sevilla – Spain
May 10-12, 2004**

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Prof. Dr. E. Fattal (President of APGI)

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PROGRAMME AT A GLANCE

May 9, 2004

11:30 - 13:30 and 16:00 - 18:00: Registration Hotel Melia Lebreros Lobby
19:30: Welcome Reception Rectorado of Sevilla University

May 10, 2004

8:30 - 9:30: Registration Hotel Melia Lebreros
Lobby

Convenciones Room

9:30 - 10:00: Welcome
10:00 - 11:00: SEFIG lecture
11:00 - 12:30: Coffee Break, Poster Session I and
Exhibition
12:30 - 13:30: Aventis-APGI-Maurice Marie
Janot Lecture
13:30 - 15:30 Lunch, Poster Session I and
Exhibition

Convenciones Room

15:30 - 16:30: Solid Dosage Forms I
16:30 - 17:00: Coffee Break, Poster Session I and
Exhibition
17:00 - 18:00: Solid Dosage Forms I

Nerja-Jerez Room

15:30 - 16:30: Nanoparticles
16:30 - 17:00: Coffee Break, Poster Session I and
Exhibition
17:00 - 18:00: Nanoparticles

20:15: Visit to the Alcazar

May 11, 2004

Convenciones Room

9:00 - 10:40: Oral
10:40 - 12:00: Coffee Break, Poster Session II
and Exhibition

Nerja-Jerez Room

9:00 - 10:40: Microparticles
10:40 - 12:00: Coffee Break, Poster Session II
and Exhibition

Convenciones Room

12:00 - 12:30: Aventis-APGI Young Investigator
Award
12:30 - 13:30: ADRITELF Lecture
13:30 - 15:30 Lunch, Poster Session II and
Exhibition

Convenciones Room

15:30 - 16:30: Solid Dosage Forms II
16:30 - 17:00: Coffee Break, Poster Session II
and Exhibition
17:00 - 18:00: Cyclodextrins

Nerja-Jerez Room

15:30 - 16:30: Bioadhesion
16:30 - 17:00: Coffee Break, Poster Session II
and Exhibition
17:00 - 18:00: Drug Targeting

21:00: Gala Dinner: HOTEL ALFONSO XIII

May 12, 2004

Convenciones Room

9:20 - 10:40: Nasal and Pulmonary
10:40 - 11:00: Coffee Break
11:00 - 12:40: Dermal and Transdermal

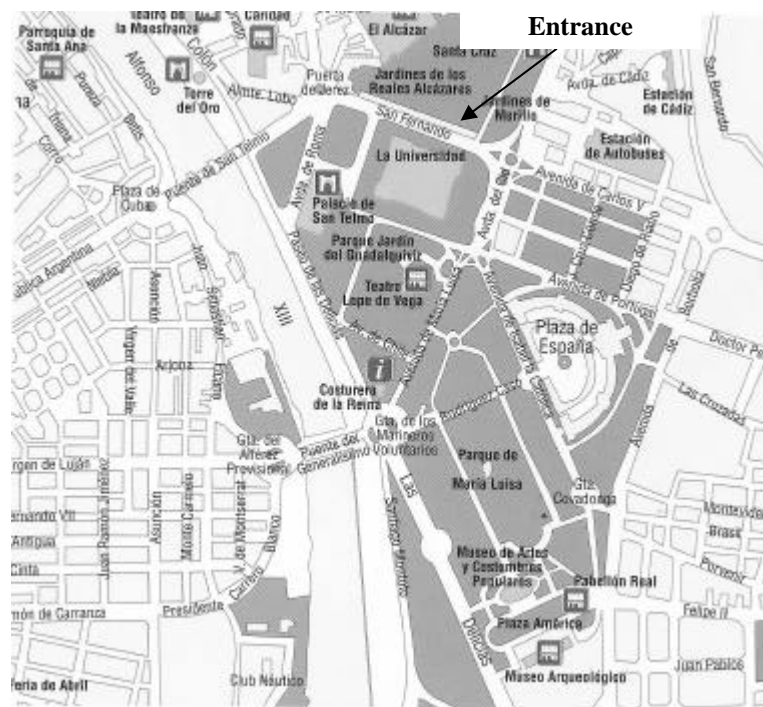
Nerja-Jerez Room

9:20 - 10:40: Protein and Vaccine Delivery
10:40 - 11:00: Coffee Break
11:00 - 12:40: Gene and Oligonucleotide
Delivery

May 9, 2004

11:30 - 13:30 and 16:00 - 18:00: Registration

19:30: Welcome Reception at “Rectorado of Sevilla University”: Calle San Fernando, 4



May 10, 2004 Morning

Convenciones Room

8:30 - 9:30: Registration

9:30 - 10:00: Welcome

10:00 - 11:00: SEFIG Lecture

Chair: A. Concheiro

Professor Kaneto Uekama, Kumamoto University, Japan

Potential use of cyclodextrins in peptide and protein Delivery

11:00 - 12:30: Coffee Break, Poster Session I and Exhibition

12:30 - 13h30: Aventis-APGI - Maurice Marie Janot Lecture

Chair: T. Jones

Prof. Paolo Colombo, University of Parma, Italy

Swelling, tableting and drug delivery control

13:30 - 15:30: Lunch, Poster Session I and Exhibition

May 10, 2004 Afternoon

Convenciones Room

Solid Dosage Forms I

Chairs: D. Chulia, M. Llabres

	Abstract Number	
15:30	O1	Drug release mechanisms in swellable matrix tablets with sterical restriction J. Siepmann, A. Streubel, N. Peppas
15:50	O2	Correlation of drug release mechanism from cellulose ethers with their surface free energy determined by inverse gas chromatography S. Baumgartner, O. Planinšek, J. Kristl
16:10	O3	Comparison of loading procedures on encapsulation of a drug in siliceous mesoporous materials C. Tourne-Peteilh, S. Begu, D.A. Lerner, D. Brunel, B. Coq, J.M. Devoisselle

16:30 - 17:00: Coffee Break, Poster Session I and Exhibition

Convenciones Room

Solid Dosage Forms I

Chairs: D. Chulia, M. Llabres

	Abstract Number	
17:00	O4	Compressional characterisation of HSMMA copolymers after storage at several relative humidities I. Bravo, C. Ferrero, M ^a J. León, M ^a R. Jiménez-Castellanos
17:20	O5	Zein-shellac-based coatings for extended drug release I. Terebesi, R. Bodmeier
17:40	O6	Poly(ethylene oxide)-g-poly(vinyl acetate) copolymers as an instant release tablet coating R. F.M. Lange, K. Kolter, K. Mathauer

May 10, 2004 Afternoon

Nerja-Jerez Room

Nanoparticles

Chairs: J.C. Leroux, C. Vauthier

	Abstract Number	
15:30	O7	Neutral polymers form spontaneously supramolecular nanoassemblies by host-guest interactions R. Gref, C. Amiel, B. Sébille, B. Gillet, J.C. Beloeil, C. Ringard, V. Rosilio, J. H. Poupaert, P. Couvreur
15:50	O8	Dipolar organization of PEG at the surface of lipid nanocapsules and complement activation A. Vonarbourg, P. Saulnier, C. Passirani, J. P. Benoît
16:10	O9	Optimisation of nanoparticulate PLGA: polyoxyethylene blends for protein delivery N. Csaba, L. González, A. Sánchez, M. J. Alonso

16:30 - 17:00: Coffee Break, Poster Session I and Exhibition

Nerja-Jerez Room

Nanoparticles

Chairs: J.C. Leroux, C. Vauthier

	Abstract Number	
17:00	O10	Characterization and <i>in vitro</i> behavior of silica nanovesicles synthesized using liposomes as templates S. Bégu, D. A. Lerner, S. Girod, C. Tourné-Péteilh, J. M. Devoisselle
17 :20	O11	Comparative uptake and cytotoxicity studies of surface-modified triglyceride nanoparticles in CACO-2 cell monolayers M. Garcia-Fuentes, M.J. Alonso, D. Torres
17 :40	O12	Loading of 5-fluorouracil to magnetite/poly(ethyl-2-cyanoacrylate) (core/shell) nanoparticles J. L. Arias, V. Gallardo, S. A. Gómez-Lopera, A. V. Delgado

20:15 Visit to the Alcazar

May 11, 2004 Morning

Convenciones Room

Oral

Chairs: A. Gazzaniga, P. Maincent

	Abstract Number	
9:00	O13	New floating system for Acyclovir oral controlled delivery R. Bettini, E. Losi, G. Massimo, P. Colombo
9:20	O14	Bioadhesive nanospheres for targeted delivery of Zidovudine to the infected gastro-intestinal mucosa A. Dembri, M. Soursac, H. Chacun, A. Maquin, D. Costantini, G. Ponchel
9:40	O15	Polysaccharidic microsystem for intestinal uptake G. Coppi, V Iannuccelli, N. Sala
10 :00	O16	Coating of pellets intended for colon drug delivery M. Hiorth, T. Versland, I. Tho, S. Arne Sande
10:20	O17	Reduction of resistance to β lactams by colon delivery of β -lactamases S. Bourgeois, A. Andreumont, E. Fattal

Nerja-Jerez Room

Microparticles

M.J. Blanco, J. Siepmann

	Abstract Number	
9:00	O18	Solid lipid microparticle versus inclusion complex of Piribedil Y. Yazan, M. Demirel, G. Büyükköroglu, B. Selen Kalava
9:20	O19	Development of biodegradable PLGA microspheres releasing GDNF A. Aubert-Pouëssel, C. Jollivet, M.-C. Venier-Julienne, A. Clavreul, C. N. Montero-Menei, P. Menei, J.-P. Benoit
9:40	O20	Microspheres for spinal drug delivery: formulation and <i>in vivo</i> release over 3 months F. Lagarce, N. Faisant, J.C. Desfontis, J. Richard, J.P. Benoit
10:00	O21	Eudragit-Ethylcellulose microcapsules containing Ibuprofen prepared by the solvent-evaporation method P. Valot, N. Zydowicz
10:20	O22	Preparation, characterization and <i>in vitro</i> release of Gentamicin from Poly(d,l-lactic-co-glycolic acid) microspheres M. R. Virto, B. Elorza, S. Torrado, G. Frutos, M. Elorza

10:40 - 12:00: Coffee Break, Poster Session II and Exhibition

Convenciones Room

12:00 - 12:30: Aventis-APGI Young Investigator Award

Chair: E. Fattal

12:30 - 13:30: ADRITELF Lecture

Chairs: U. Conte, C. Rossi

Prof. Francesco Veronese, University of Padova, Italy

How polymer conjugation can improve the therapeutic values of biotechnological drugs?

13:30 - 15:30: Lunch, Poster Session II and Exhibition

May 11, 2004 Afternoon

Convenciones Room

Solid Dosage Forms II

Chairs: R. Bettini, A.M. Rabsaco

	Abstract Number	
15:30	O23	Polymorph control of drug in supercritical CO ₂ C. Fargeot, E. Badens, N. Bosc, S. Veessler, E. Teillaud, G.Charbit
15:50	O24	Correlation of wet-granulation behaviour and surface energy results obtained by vapour sorption techniques F. Thielmann, M. Naderi, D. Burnett, F. Stepanek
16:10	O25	Flow particle image analysis: new possibilities in particle characterisation. P. Sontum, E. Martinsen

16:30 - 17:00: Coffee Break, Poster Session II and Exhibition

Convenciones Room

Cyclodextrins

Chairs: A. Bochot, J.J. Torres

	Abstract Number	
17:00	O26	Neuroprotection of Idebenone-cyclodextrin complex against oxidative stress-induced neuronal degeneration M. Fresta, M. Iannone, C. A. Ventura, D. Paolino, G. Puglisi, D. Rotiroti
17:20	O27	Cyclodextrin glycodendrimers as site-specific drug delivery systems J. M. Benito, M. Gómez-García, C. Ortiz Mellet, I. Baussanne, J. Defaye, J. M. García Fernández
17:40	O28	Saccharide-branched cyclodextrins as targeting drug carriers K. Hattori

May 11, 2004 Afternoon

Nerja-Jerez Room

Bioadhesion

Chairs: F. Alhaique, M.R. Jimenez-Castellanos

	Abstract Number	
15:30	O29	Salmonan: salmonella like bioadhesive nanoparticles H. H. Salman, C. Gamazo , J. M. Irache
15:50	O30	Bioadhesive properties of pegylated nanoparticles K. Yoncheva, M. A. Campanero, J. M. Irache
16:10	O31	Mucoadhesive polymers: a dual-purpose water pump involved in the mucoadhesion and transport of hydrophilic drugs? Y. Jacques and R. Guy

16:30 - 17:00: Coffee Break, Poster Session II and Exhibition

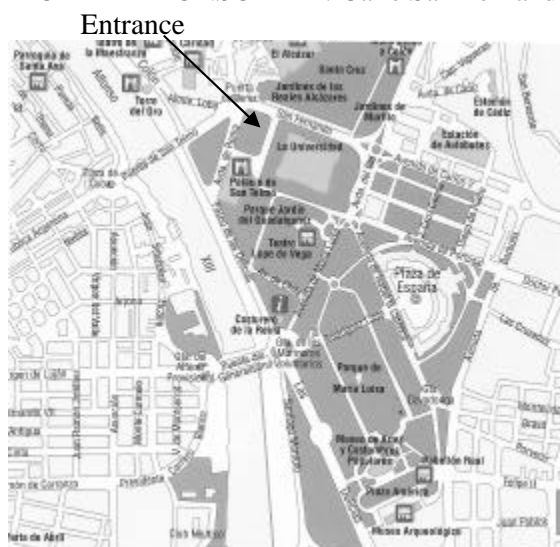
Nerja-Jerez Room

Drug Targeting

Chairs: M.J. Alonso, J.P. Benoit

	Abstract Number	
17:00	O32	Uptake of APOE/ATP-containing liposomes by hepatocytes in isolated perfused guinea-pig livers S. Chaïb, C. Charrueau, R. Lai-Kuen, A. Letourneau, J.C. Chaumeil, L. Cynober, J.P. De Bandt
17:20	O33	A new generation of anticancer drug loaded colloidal vectors reverts multidrug resistance in glioma and reduce tumor progression in rat E. Garcion, B. Heurtault, A. Lamprecht, A. Aubert-Pouessel, B. Denizot, P. Menei, J.P. Benoit
17:40	O34	In-vitro evaluation of antitumoral activity of Gemcitabine-loaded liposomes in human thyroid carcinoma cells M. G. Calvagno, D. Paolino, M. Celano, D. Russo, M. Fresta

21:00 Gala Dinner at the “HOTEL ALFONSO XIII”: Calle San Fernando 2.



May 12, 2004 Morning

Convenciones Room

Nasal and Pulmonary

Chairs: P. Arnaud, P. Colombo

	Abstract Number	
9:20	O35	Chimeral agglomerates of micronized powder for nasal administration of analgesic drug P. Russo, P. Colombo, F. Buttini
9:40	O36	Screening of inhalation formulations: measuring interactions by atomic force microscopy C.E. Madden , S.J. Ebbens, S.Y.Luk, N. Patel, C.J. Roberts, M.C. Davies
10:00	O37	Alveolar macrophages are a primary barrier to pulmonary absorption of macromolecules C. Lombry, D. A. Edwards, V. Pr�at, R. Vanbever
10:20	O38	Solid lipid microparticles for administration by inhalation: optimisation of manufacturing parameters S. Jaspert, C. Bodson, P. Bertholet, P. Chiap, L. Delattre, B. Evrard

10:40 - 11:00: Coffee Break

Convenciones Room

Dermal and Transdermal

Chairs: M. Fresta, V. Pr at

	Abstract Number	
11:00	O39	Transdermal delivery of small peptides by iontophoresis: influence of physicochemical properties N. Abla, A. Naik, R. H. Guy, Y. N. Kalia
11:20	O40	Study of the Fluconazole skin penetration after topical application by cutaneous microdialysis in rats F.-. Mathy, R.K.Verbeeck, V. Preat
11:40	O41	An in-vivo evaluation of Ethosomes for dermal administration of a natural antiinflammatory agent as ammonium glycyrrizinate D. Paolino, D. Mardente, M. G. Calcagno, M. Iannone, M. Fresta
12:00	O42	Characterization of a novel topical nanoemulsion vehicle with spreading properties I. Roland, P. Gillard, L. Delattre, B. Evrard, M. de la Brassinne
12:20	O43	Addition of silicone emulsifier in liquid crystals o/w systems: rheological properties and <i>in vitro</i> percutaneous absorption A. Semenzato, L. Montenegro, R. Drago, F. Dall'Acqua, P. Caliceti G. Puglisi.

May 12, 2004 Morning

Nerja-Jerez Room

Protein Delivery

Chairs : J.M. Irache, F. Veronese

	Abstract Number	
9:20	O44	Polymer films – a topical protein delivery system for moist wound healing R. Schmidt, U. Gosslar, G. Winter
9:40	O45	Avidin PEGylation by active site protection S. Salmaso, M. Roldo, A. Brossa, G. Paganelli, M. Chinol, P. Caliceti
10:00	O46	Starch microparticles as oral vaccine adjuvant in mice and man I. Sjöholm, N. Rydell, L. Stertman, L. Strindelius
10:20	O47	Stabilization of Octreotide against acylation for preparation of a microsphere dosage form P. P. DeLuca, D. Hee Na, S. B. Murty

10:40 - 11:00: Coffee Break

Nerja-Jerez Room

Gene and Oligonucleotide Delivery

Chairs: P. Couvreur, A. Zimmer

11:00	O48	New lipids for the liposomal transport of antisense oligonucleotides B. Deutschmann, E. Jauk, B. Schnetz, A. Huefner, A. Zimmer
11:20	O49	PH-sensitive methacrylic acid copolymers do improve the intracellular bioavailability of antisense oligonucleotides M. A. Yessine, H.U. Petereit, C. Meierb, J. C. Leroux
11:40	O50	Inhibition of iNOS protein expression by decoy ODN against NF-kB released from PLGA microspheres and naked ODN in activated macrophages G. De Rosa, M.C. Maiuri, D. De Stefano, F. Ungaro, F. Quaglia, M.I. La Rotonda, R. Carnuccio
12:00	O51	Tumor targeted gene delivery by liposomes carrying epidermal growth factor (EGF) M. Buñuales, E. Jiménez, N. Düzgünes, C. Qian, MJ. Renedo, J. Prieto, C. Tros de Ilarduya
12:20	O52	Development of a biodegradable gene carrier based on oligomerized polyamines J. Klöckner, G. Walker, M. Ogris, E. Wagner

May 10, 2004

Poster session I

Posters are exhibited continuously from 9:00 to 18:00 with special sessions from 11:00 to 12:30 - 13:30 to 15:30 and 16:30 to 17:00. The number indicates the number displayed on each panel.

Analytical and Quality Control

1. Thermal characterisation of Venlafaxine HCL polymorphic forms
W. Liebenberg, M. Brits, T. Dekker, E. van Tonder
2. Investigation of the polymorphism of Ambroxol
A. Foppoli, L. Zema, C. Gervasutti, A. Gazzaniga, M.R. Caira, F. Giordano
3. Thermal behaviour of Ibuprofen, Benzoic acid and their sodium salts after equilibration with pure solvents
A. Peña, P. Bustamante, A. Reñillo, B. Escalera
4. Calorimetry studies of the influence of the lipophilic moiety in Tranylcypramine conjugates upon the interaction with a model biomembrane
R. Pignatello, M. Lombardo, A. Puleo, G. Puglisi.
5. Optimization of Lysozyme solutions using DSC
O. Munguía, M. Cueto, M. J. Dorta, M. Llabrés
6. Thermal properties of Konjac glucomannan by DSC and MTDSC
F. A. Manceñido, M. Landin, R. Martínez-Pacheco
7. Physico-chemical characterisation of Venlafaxine HCL generic raw materials used in South Africa
E. van Tonder, M. Brits, T. Dekker, W. Liebenberg
8. IR study of Doxycycline-silicate interaction
C. Viseras, C. Aguzzi, P. Cerezo, J. Cruz, A. Garces, M. Zafra, S. Rossi, F. Ferrari, C. Caramella
9. Interactions of poly(vinylpyrrolidone) with Ibuprofen and Naproxen: comparative study
S. Bogdanova, I. Pajeva, P. Nikolova, B. Müller
10. The influence of carbopol on the mechanical and thermal properties and drug permeability of free shellac films
B. Qussi, W. Süß
11. A simple method for determining the H-bonded state of liquid water using FTIR spectroscopy
K. Radau, T. Richter and W. Süß
12. A study on hydration dynamic equilibrium within dispersions of polymethacrylates and hydroxypropylmethylcellulose
J. García, C. Claro, C. Ferrero, M.J. Lucero
13. Development of phosphated crosslinked Chondroitin sulfate: potential ingredient for specific drug delivery
C. Correia da Silva; A. Adelina Winkler Hechenleitner, E. Alfonso Gómez Pineda; O. Albuquerque Cavalcanti
14. Degradation assays of starch graft copolymers
Alfás, Javier; Gurruchaga, M.; Goñi, I.
15. Influence of NaCl on the Crystallization of Mannitol in the System Mannitol-HSA-NaCl during Lyophilization
A. Hawe, W. Friess
16. Comparison of traditional and new modified forms of colloidal silicon dioxide
Gray, M. Drechsler, S. Jonat, P.C. Schmidt, S. Hasenzahl

17. Evaluation of a biogenic agent: bioglea™ from saturnia spa
C. Anselmi, N. Biondi, M. Centini, M. Andreassi, A. Buonocore, N. Angelo Fortunati, M.R. Tredici
18. Moisture sorption effects of several drug-exciipient mixtures
V. Kmetec, R. Roškar
19. Frontal Analysis Continous Capillary Electrophoresis (FACCE) in determining the pH-dependence of 5-ASA/Alginate interaction
K. Mladenovska, Z. Kavrakovski, K. Goracinova
20. Characterisation of the vegetable oils used as a vehicle in pharmaceutical dosage forms
R. Cuciureanu, D. Bulea, I. Matei, M. Pascu
21. Assessment of the oxidative protection of raw cosmetic oils with gamma-Oryzanol
C. Juliano, M.C. Alamanni, M. Cossu, L. Piu
22. Chemical and mineralogical characterisation of pharmaceutical grade silicates
C. Aguzzi, C. Viseras, P. Cerezo, J. Cruz, Á. Garces, M. Zafra, C. Caramella, A. López-Galindo
23. Nitrates and nitrites contamination of certain paediatric preparations
B. Figura, J. Pluta
24. Development of an *in vitro* release test for the quality control of a zinc oxide topical formulation
C. Toscano, R. C. Campos, M. Barreto, A. Bica, A. Farinha
25. Accelerated kinetics studies of glucose in aqueous parenteral infusion
M. Antunovic, V. Putic
26. Determination of Lidocaine hydrochloride and dexametazone acetate in medical skin ointment applying RP-HPLC method
L. Zivanovic, S. Markovic, S. Petrovic, I. Ivanovic
27. Reverse phase HPLC and UV spectrophotometry as novel validated methods for Capreomycin determination in liposomes
G. Fardella, L. Perioli, C. Vescovi, M. Ricci, S. Giovagnoli, S. Scuota, C. Rossi
28. Simultaneous determination in binary mixtures of Dipyridamole and colorants (tartazine or sunset yellow) by ratio spectra derivative and multivariate calibration methods
G. Georgi, K. Margarita, T. Stefan, S. Vasil
29. Effect of spray baking conditions on the chemical and physical properties of Nifedipine
F. Pattarino, L. Giovannelli, B. Albertini
30. Mineral waters bottled in romania and western europe – a comparative study
A. Stefanache, I. Popovici, M. Mares
31. Viability conditions of *Saccharomyces boulardii*
S. Graff, A.C. Patry, J.C. Chaumeil, C. Charrueau
32. Analysis of packing procedures in a functional management unit belonging to a hospital pharmacy service
L. Recio Blázquez

Biopharmaceutics

33. Analysis of variation in dissolution rate with position in the USP paddle apparatus using computational fluid dynamics
D.M. D'Arcy, O.I. Corrigan, A.M. Healy
34. An investigation into the influence of Carbamazepine particle size on drug dissolution from immediate release tablets
I. Homšek, N. Cvetkovic, J. Parojcic
35. The influence of natural anionic polymers on the release rate and local concentration of Metronidazole at gastric pH
W.S. Musial, A. A. Kubis

36. Comparison of bidirectional Salbutamol transport across intestinal (CACO-2 TC7 Clone) and renal (MDCK) epithelial cell lines
B. Valenzuela, T. M. Garrigues, A. Martín-Villodre, A. Nácher
37. Assessment of human intestinal permeability by using the frog intestinal sac
G. Trapani, M. Franco, A. Latrofa, A. Lopodota, G. Liso
38. The distribution of water soluble low molecular antioxidants in pig urinary bladder
T. Vovk, M. Bogataj, A. Mrhar
39. Enhanced bioavailability of Simvastatin in a self-microemulsifying drug delivery system (SMEDDS®)
D. Marchaud, V. Jannin
40. Impact of formulation on bioavailability of water insoluble drug in injectable long acting concentrated solution
S. Lacoste, J. Guyonnet, E. Boivin, V. Kaltsatos
41. Pharmacokinetic and biodistribution profile of IL-10 following IV administration in rats with liver fibrosis vs normal rats
H. Rachmawati, L. Beljaars, C. Reker-Smit, A.M. Van Loenen-Weemaes, W.I. Hagens, D.K.F. Meijer, K. Poelstra
42. Determination of Ketoprofen in human serum by HPLC analysis and its application to a pharmacokinetic study
T. Comoglu, N. Gonul, A. Savaser, Y. Ozkan, T. Baykara
43. Kinetic interpretation of the similarity factor f₂
M. Llabrés, D. Alcaide, J. Fariña
44. Active mediated secretion of Salbutamol: inhibition by ATP depletion in presence of sodium azide
B. Valenzuela, A. Martín-Villodre, V.G. Casabó, A. Nácher
45. Drug level calculation in the plasma and tissues with controlled release dosage forms
J.M. Vergnaud
46. Paediatric administration of meprazol granulated
J.F Sierra, M^aA. Ruiz, V. Gallardo

Solubility

47. Solubilization study of Kavalactones by micellar carrier systems
L. Scalise, A. R. Bilia, M. C. Bergonzi, F. F. Vincieri
48. Solubility behavior of Flufenamic acid in solvent mixtures
S. Romero, P. Bustamante, B. Escalera
49. Solubility prediction of Metronidazole in solvent mixtures with a common cosolvent
S. Muela, B. Escalera, P. Bustamante, M.A. Peña

Stability

50. Stability of Amoxicillin/Clavulanic acid mixture in solid state. Influence of syloid al-1 on this behavior
C. Montejo, A. Fernandez-Carballido, L. Gordo, I.T. Molina-Martinez
51. Possibilities for predicting drug stability using generalized regression neural network
S. Ibric, M. Jovanovic, Z. Đuric, J. Parojcic
52. The structure elucidation of an unknown Papaverine degradation product
U. Girreser, T. W. Hermann, K. Piotrowska
53. Determination of pH-rate profile of CCK-4 using a nonisothermal method
A. Oliva, M. Hidalgo, C. Álvarez, M. Llabrés, J.B. Fariña

54. Stability of the spf66 antimalarial peptide: influence of pH and temperature
A. Santoveña, M^a Jesús Dorta, A. Oliva, M. Llabrés, J. B. Fariña
55. The effects of pH and temperature on physical stability and tumoricidal activity of recombinant mouse and human tumor necrosis factor (TNF α) in aqueous and lyophilized formulations
T. Brousalı-Tsiftoglou, A. Economou, V. Kefala, T. Chronis, A. S. Tsiftoglou
56. Morphine, Haloperidol and Hyoscine combined in solution for S.C. administration
R. Reyes, S. Negro, M^a Luz Azuara, Y. Sánchez, E. Barcia
57. Short term stability study of UK38485 or 3-(1H-imidazole-1 yl-methyl)-2-methyl-1 H-indol-1 propionic acid.
L. Recio Blázquez
58. β -cyclodextrin, glycerol and PEG-400 preserve tumoricidal activity (biological stability) of human recombinant tumor necrosis factor (rhtnf α) at high temperatures
T. Chronis, T. Brousalı-Tsiftoglou, V. Kefala, A. S. Tsiftoglou

Bioadhesion

59. Evaluation of the interaction between a polyaminoacidic hydrogel and mucin by ATR-FTIR spectroscopy
G. Pitarresi, F. Saiano, G. Cavallaro, G. Giammona
60. Characterization of Piroxicam mucoadhesive microspheres
F. Cilurzo, F. Selmin, P. Minghetti, A. Casiraghi, L. Montanari
61. A spectrophotometric study on the swelling state of bioadhesive tablets
E. Baloglu, S. Y. Hizarcioglu, H.A. Karavana
62. Bioadhesive buccal tablets as peptide carriers
D. Haznar, J. Pluta
63. Bioadhesive buccal patches for Carvedilol delivery: effect of the addition of cyclodextrins as release modulator
A. Miro, F. Quaglia, L. Giannini, B. Cappello, M.I. La Rotonda
64. Mucoadhesive patches for buccal administration of antiinflammatory drugs
L. Perioli, V. Ambrogi, F. Angelici, M. Ricci, S. Giovagnoli, C. Rossi

Buccal

65. Monolithic compositions for an intrabuccally drug absorption
G. Leutgöb, A. Zimmer
66. Lipid composition and permeability of pig buccal and esophageal epithelium
I.D. del Consuelo, Y. Jacques, F. Falson, R.H. Guy
67. Powder formulations for buccal application
D. Sticha, R. Bodmeier
68. *In vitro* release studies of Benzydamine HCL from buccal HPMC gels
S. Y. Hizarcioglu , G. Ertan
69. The influence of storage conditions on drug permeability through porcine buccal mucosa
S. Amores, J. Lauroba, C. Peraire, J. Domenech
70. Buccal penetration enhancement properties of trimethyl-chitosan
G. Sandri, S. Rossi, F. Ferrari, M.C. Bonferoni, C. Caramella

Colon

71. An *in vitro* evaluation of Theophylline-guar gum matrix tablets for colonic drug delivery
A. Celkan, F. Acarturk
72. Development of controlled delivery systems with Budesonide targeted to the lower gastrointestinal tract
S. Sánchez, B. Menéndez, M.R. Aberturas, J. Molpeceres, M. Guzmán
73. "*In vitro*" and "*in vivo*" evaluation of controlled delivery systems with Budesonide targeted to the lower gastrointestinal tract
S. Sánchez, B. Menéndez, M.R. Aberturas, J. Molpeceres, J.M. Pozuelo, M. Guzmán
74. Derivatized microparticles for colonic delivery of 5-Aminosalicylic acid
R. Cassano, F. Iemma, R. Muzzalupo, N. Picci, F. Puoci, U.G. Spizzirri, S. Trombino
75. Microspheres in pellets for colonic delivery of 5-ASA
M. Gerychová, L. Hrubá, M.R. Aberturas, M. Guzmán, J. Molpeceres
76. Matrices for the colon-specific controlled delivery of 5-Fluorouracil
A. Baggiani, Y. Zambito, V. Carelli, M.F. Serafini, G. Di Colo
77. Pharmacoscintigraphic study on an oral formulation for colon delivery of 5-ASA
A. Maroni, L. Zema, L. Ostinelli, M.E. Sangalli, F. Giordano, A. Gazzaniga

Rectal

78. *In vitro* and *in vivo* evaluation of Paracetamol suppositories prepared using suppository bases
K. K. Singh, R. Shegokar
79. Influence of surfactants on the physicochemical and release properties of suppositories of Ethosuximide
M^a Victoria Margarit, J. David Caballero
80. HPLC determination of Diazepam and preservatives in HPMC hydrogel for rectal administration
J. Tonik Ribarska, S. Trajkovik Jolevska, K. Milenkova, M. Glavas Dodov, A. Dimitrovska

Nasal and Pulmonary

81. Aerosolization properties, surface composition and physical state of spray-dried protein particles made of dipalmitoyl phosphatidylcholine
C. Bosquillon, P. Rouxhet, F. Ahimou, D. Simon, C. Culot, V. Prétat, R. Vanbever
82. Spray-dried powders containing chitosan nanoparticles for lung protein delivery
A. Grenha, B. Seijo, D. Carrión-Recio, C. Remuñán-López
83. *In vitro* and *in vivo* evaluation of Ciprofloxacin HCL loaded chitosan microspheres for nasal administration
D. Gurcan, A. Okyar, B. Karakoc, G. Baktir, A. Gerceker, Y. Ozsoy
84. Methylpyrrolidinone chitosan microspheres for nasal administration of metoclopramide
E. Gavini, C. Muzzarelli, L. Piu, C. Juliano, P. Giunchedi
85. Potent anti-inflammatory activity of intranasal indomethacin emulsion in rats
H.Y. Karasulu, Z.E. Sanal, S. Sozer
86. The influence of carrier roughness on adhesion content uniformity and the *in vitro* deposition of Terbutaline sulfate from dry powder inhalers
M.P. Flament, P. Leterme, A. Gayot
87. A novel vesicle formulation for improved glucocorticoid pulmonary delivery
M. Carafa, C. Terzano, C. Marianecchi, L. Allegra, F. Alhaique
88. Experimental model to study the influence of tissue oedema on pulmonary drug disposition
M^a José de Jesús Valle, A. Sánchez Navarro

89. Intranasal diffusion of Indomethacin-*in vitro* and ex vivo characterization
H.Y. Karasulu, Z.E. Sanal, G. Ertan, T. Guneri
90. Metoclopramide solutions for intranasal application
M. Kassarova, E. Dimitrova, S. Bogdanova

Ocular

91. Biodegradable microspheres of Aciclovir for intraocular administration: influence of vitamin A, as an additive
C. Martínez-Sancho, R. Herrero-Vanrell, S. Negro
92. Self-assembled microparticles of the thermo-responsive poly(VPAVG) for intraocular administration
A.C. Rincón, I.T. Molina Martínez, B. de las Heras, V. Rebotó, M. Alonso, J.C. Rodríguez Cabello, R. Herrero-Vanrell
93. Biodegradable implants containing Dexamethasone for intraocular application
S. Fialho, A. Silva-Cunha
94. Development of microemulsions for topical ocular administration of Dexamethasone
S. Fialho, A. Silva-Cunha
95. Evaluation of stability and cellular toxicity of chitosan nanoparticle-phospholipid complexes for ocular delivery system
B. Seijo, E.L.S. Carvalho, M. Jarrin, Y. Diebold, M.J. Alonso
96. Development of an ophthalmic formulation of an antifungal drug with cyclodextrins. preliminary studies
A. I. Rodríguez-Pérez, C. Rodríguez-Tenreiro, F. Rosa dos Santos, J.J Torres-Labandeira
97. Novel liquid ophthalmic vehicle containing Nimesulide: characterization and *in vivo* evaluation
P. Chetoni, S. Burgalassi, D. Monti, C. Sommani, E. Boldrini, M.F. Saettone
98. Effect of different N-trimethyl chitosans on Ofloxacin permeability through reconstituted rabbit corneal epithelium
G. Di Colo, Y. Zambito, S. Burgalassi, P. Chetoni, M. F. Saettone

Dermal and Transdermal

99. Study of the cutaneous delivery of Tretinoin loaded vesicles
M. Manconi, C. Sinico, M. Peppi, M. Sassoé-Pognetto, A.M. Fadda
100. DPPC vesicles containing Minoxidil I: characterization and *in vitro* permeation studies through rat skin
J.M. López-Pinto, J. Palma, M.L. González-Rodríguez, A. Fini, A.M. Rabasco
101. DPPC vesicles containing minoxidil II: application of experimental and Taguchi design to improve formulations
J.M. López-Pinto, J. Palma, M.L. González-Rodríguez, A. Fini, A.M. Rabasco
102. Liposomes encapsulating Ketoprofen-cyclodextrin complexes I: formulation and characterization
P. Mura, F. Maestrelli, E. Runggaldier, M.L. González-Rodríguez, A.M. Rabasco
103. Liposomes encapsulating Ketoprofen-cyclodextrin complexes II: permeation studies across rat skin and artificial membranes
P. Mura, F. Maestrelli, E. Runggaldier, M.L. González-Rodríguez, A.M. Rabasco
104. The effects of EGF containing liposome formulations on burn wound healing: a histological study
N. Çelebi, C. I. Alemdaroglu, Z. Degim, D. Erdogan, A. Nacar, C. Özogul

105. Liposome formulation for the topical delivery of enzymes
P. Perugini, F. Pavanetto, K. Hassan, P. Iadarola, C. Zanone, L. Annovazzi, S. Viglio, T. Modena, I. Genta, B. Conti
106. Liposome-encapsulated Triamcinolone acetonide: *in vitro/in vivo* evaluation
D. Monti, P. Chetoni, S. Burgalassi, F. Tognetti, M. Najarro, E. Boldrini, M.F. Saettone
107. *In vitro* characterization of solid lipid nanoparticles as a carrier system for photoprotective agents
C. Toscano, M. Videira, A. Farinha, L.M. Rodrigues, A.J. Almeida
108. Studies of the percutaneous permeation of a new polymeric nanocapsules through the pig skin
K. Bouchemal, S Briançon, H. Fessi, E. Perrier, I. Bonnet
109. *In vitro* percutaneous absorption and *in vivo* topical anti-inflammatory activity of Indomethacin loaded solid lipid nanoparticles
M. Ricci, C. Puglia, F. Bonina, C. Di Giovanni, S. Giovagnoli, C. Rossi
110. Temperature - and pH-sensitive hydrogels based on n-acryloyl-l-histidine and n-acryloyl-l-phenylalanine
A. Fini, M. Casolaro
111. Intercalation of sunscreen in hydrotalcite-like compounds
L. Perioli, V. Ambrogi, B. Bertini, L. Latterini, M. Ricci, S. Giovagnoli, C. Rossi
112. The comparative structure and stability study of o/w creams based on polymeric emulsifiers
D. Krajisnik, J. Milic, G. Vuleta, M. Stupar, J. Djonlagic
113. Preparation, physicochemical and cosmetic comparison of topical o/w micro- and macroemulsions containing Vitamin E
E. Akyil, Y. Yazan
114. *Ex vivo* investigations on trypsin bioadhesive gels for wound healing
N.O. Sahin, B. Teke, I. Uca, A. Yuksel, A. Unyayar
115. A preformulation study of carbopol 971-P hydrogels for acyclovir topical application
TM. Garrigues, O. Díez-Sales, JV. Herráez, R. Belda, A. Martín-Villodre, M. Herráez
116. Preliminary assessment of some acrylic acid polymers as factors buffering triethanolamine interacting with artificial skin sebum
W. S. Musial, A. A. Kubis
117. *In vitro / in vivo* percutaneous absorption of Etofenamate
C. Toscano, R. C. Campos, M. Barreto, A. Bica, A. Farinha
118. Percutaneous absorption of Amethocaine from two formulations. A comparative study
A. C. Calpena, M. Obach, E. Escribano, J. Queralt, J. Doménech
119. The effects of terpene enhancers on the percutaneous permeation of hydrophilic drugs: Acyclovir, 5-Fluorouracil and Methotrexate
M. Myburgh, M.H. Pretorius, W. Steenekamp, J. Hadgraft, J. du Plessis
120. Meloxicam release study in Franz-type diffusion cells
M. Muñoz, M^a A. Ruíz, V. Gallardo
121. Evaluation of *in vitro* release of Clonazepam from different vehicles and the effect of enhancers on drug release
M. Hashemi, M.N. Sarbolouki, T. Toliyat, A. Kebriaeezadeh
122. The effect of vehicles on the penetration of Cinnamic acid through different membranes
Ö. Özer, S. Tömek
123. Optimization by artificial neural networks (ANNs) of local action transdermal Flurbiprofen formulation
I. Agabeyoglu, E. Tuncel, F. Tirnaksiz, J. Meray, M. Beyazova, A. Tosun
124. Investigation of transdermal matrix delivery system of Acetylsalicylic acid *in vitro*
A.A. Tihobaeva, L.A.Salomatina, V.I. Sevastianov

125. Permeability through biomembrane of erythromycine from dermal formulations
I. Popovici, I. Cojocaru, S. Braha, M. Vasilescu
126. HPLC determination of sumatriptan after ex-vivo transdermal diffusion studies
A. López-Castellano, A. Femenía-Font, V. Merino, V. Rodilla
127. Transdermal drug delivery: What's new?
Elka Touitou
128. Passive and iontophoretic delivery of Sildenafil through rabbit skin
S. Ilbasmis-Tamer, T. Degim
129. Iontophoretic structure - permeation relationships for tripeptides
Y. B. Schuetz, A. Naik, R.H. Guy, Y.N. Kalia
130. Effect of iontophoresis on the ex-vivo transdermal diffusion of Sumatriptan
A. Femenía-Font, V. Merino, V. Rodilla, A. López-Castellano
131. Skin tolerance and cell renewal induced by lipospheres loaded with glycolic acid
V. Iannuccelli, N. Sala, G. Coppi
132. Development of wound-dressings based on chitosan, chitosan derivatives and hyaluronic acid for the treatment of cutaneous ulcers
S. Rossi, G. Sandri, F. Ferrari, M. C. Bonferoni, C. Dacarro, P. Grisoli, C. Caramella
133. Treatment of venous leg ulcers with topical phenytoin gel
M. Pavlovic, M. Toskic-Radojicic
134. Development of a hydrogel containing GM-CSF to improve the dendritic cells colonization of HPV+ epithelium
B. Evrard, P. Hubert, P. Delvenne, J. Boniver, L. Delattre
135. Studies of some lotions for treatment of scalp seborrheic dermatitis
S. Braha, E. Braha, A. Zbranca
136. Formulation, physico-chemical characterization and *in vivo* investigation of anti-irritant effect of dermal creams
E. Braha, S. Braha, A. Ionescu, I. Popovici, L. Moisiuc
137. Gelatinous films with cicatrizing action
M. Mares, A. Stefanache, I. Popovici
138. Protective effect of topically applied mediterranean fish oil extracts against UVB induced skin erythema
C. Puglia, N.A. Santagati

Conjugates

139. Prodrugs for the site-specific delivery into the CNS at the same time of two drugs
M. Giannuzzo, M. A. Casadei, G. Terzino, J. Sperandio Murato
140. Polymeric conjugates of Dexamethasone
G. Cavallaro, L. Maniscalco, M. G. Mazzone, C. Civiale, G. Giammona
141. Lipophilic conjugates of taxanes with lipoamino acids: synthesis and *in vitro* biological evaluation
R. Pignatello, A. Puleo, M. Fresta, G. Puglisi.
142. Preparation and biological studies of pegylated Epirubicin
O. Schiavon, G. Pasut, L. Dalla Via, L. Vitello, F.M. Veronese
143. Synthesis and pharmacokinetic studies of dendritic PEG-Epirubicin
G. Pasut, S. Scaramuzza, O. Schiavon, F.M. Veronese
144. Macromolecular conjugates of antiviral drugs for liver targeted therapy
G. Cavallaro, L. Maniscalco, P. Caliceti, S. Salmaso, G. Giammona.

145. A new Didanosine lipophilic prodrug
J. Phelouzat, K. Andrieux, D. Desmaële, J. d'Angelo, P. Couvreur

Cyclodextrins

146. Improving solubility of fragrance materials by cyclodextrin complexation I : linalool
U. Numanoglu, M. Kartal, T. Sen, N. Tarimci, H. Önyüksel
147. Solubilization of St. John's wort constituents by semisynthetic cyclodextrins
M. C. Bergonzi, A. R. Bilia, G. Mazzi, F. F. Vincieri
148. Evaluation of new Propofol aqueous preparations for intravenous anesthesia
A. Trapani, V. Laquintana, M. Franco, G. Trapani, G. Liso
149. β -cyclodextrin derivatives and Methotrexate inclusion complexes: preliminary study on the effect of glucopyranose substituents
F. Pattarino, L. Giovannelli, S. Bellomi
150. Complexation behaviour of Psoralens with cyclodextrins
A. Rossi, S. Frascari, I. Zucchelli, A. Gazzaniga, M. R. Caira, F. Giordano
151. Vancomycin - triacetyl cyclodextrin interaction products: influence of the manufacturing process
F. Ferrari, S. Rossi, M. Sorrenti, L. Catenacci, B. Bassi, G. Bettinetti
152. Enhancement of antiinflammatory properties of Naproxen by cyclodextrin-modified polysaccharides
H. L. Ramírez, A. Valdivia, A. Domínguez, R. Cao, A. Frago, J. J. Torres-Labandeira, R. Villalonga
153. Rheological and microbiological studies with Ketoconazole-hydroxypropyl- β -cyclodextrin complexes
F. Taneri, T. Güneri, Z. Aigner, E. Dósa, M. Kata
154. New amide conjugates of β -cyclodextrin-spacer-Metronidazole
G. Loy, L. Bonsignore, L. Casu, F. Cottiglia, D. Garau, C. Sinico, D. Valenti, A. M. Fadda
155. Drug/cyclodextrin complexes by microwave drying
R. Bettini, E. Redenti, R. Musa, A. Rosssi, F. Giordano
156. Dynamic release studies of Naproxen from cyclodextrin polymers
I. Vélaz, M. Sánchez, A. Zornoza, C. Martín, I.X. García-Zubiri, J.R. Isasi
157. Original self-assembling hydrogels containing cyclodextrins: Rheological characterization and drug release.
S. Daoud-Mahammed, P. Couvreur, J. L. Grossiord, C. Amiel, R. Gref
158. Preparation and study of novel cyclodextrin, derivatives as protein folding aids
D. K. Mohanty, A. Sharma, C. McDermid, A. Desai

Gels

159. Novel organogel-based in situ forming implants
A. Motulsky, A.C. Couffin, P. Delmas, J.C. Leroux
160. Shear-induced solvent release from natural and synthetic micro-gels
S. Vervoort, E. Tarabukina, A. Zanina, T. Budtova
161. Novel injectable gels for the treatment of periodontitis
G. Andrews, D. Jones, D. Woolfson
162. Hydrogels based on dextran and polyaspartamide methacrylic derivatives
G. Pitarresi, D. Mandracchia, G. Giammona, F. Benvenuti, M. Giannuzzo, M.A. Casadei
163. Synthesis and characterization of new pH-sensitive hydrogels of dextran
F. Benvenuti, M. Giannuzzo, M. A. Casadei

164. Hydrogels of dextran containing nonsteroidal antiinflammatory drugs as pendant agents
M. A. Casadei, E. Covini, P. Paolicelli, V. Pistola
165. The synthesis of EDTMP loaded PEG-acrylamide hydrogels in presence SnCl₂: role in radiolabelling & drug delivery
R. Dengre, G.P. Bandopadhyaya
166. Lecithin organogels: effect of drug physico-chemical characteristics on matrix release
D. Paolino, G. Puglisi, C.A. Ventura, M. Fresta
167. Influence of propylene glycol on viscoelastic properties of carbopol 971-P NF
O. Díez, M. Dolz, M.J. Hernández, M. Herráez
168. Rheological, mechanical and dilute solution properties of hydroxyethylcellulose (HEC)
G. Andrews, D. Jones, D. Woolfson
169. Rheological study of a natural *Aloe vera* gel: optimization of the stabilization thermal process
B. Hernández, A. Santoveña, J.B. Fariña, M. Llabrés
170. Stabilization of silica xerogels intended for the sustained release of drugs by means of catalysts
M. Morpurgo, D. Teoli, B. Palazzo, N. Realdon, M. Guglielmi
171. Preparation of TNX gels: *in vitro* & *ex vivo* investigations
N.O. Sahin, T. Cuez, B. Erbas, A. Yuksel
172. Release of a model hydrophilic drug from two oleogels
I.F. Almeida, P. Costa, M. Fernanda Bahia
173. Influence of penetration enhancers on the release of Diclofenac sodium from gels: *in vitro* & *ex vivo* studies
N.O. Sahin, F. Bozkurt, N. Bozdogan, A. Yuksel

Herbal Medicinal Products

174. Quantitative evaluation of phytochemical markers from alimentary plants with possible pharmaceutical applications
F. Conforti, G. Statti, R. Tundis, M. Loizzo, M. Bonesi, Puoci Francesco, F. Menichini
175. Data regarding the essential oils from *artemisia annua*, *artemisia vulgaris* and *artemisia absinthium* harvested from the romanian spontaneous flora
B. Ivanescu, D. Lazar, M. I. Lazar, A. Ionescu
176. Contributions at the study of the alkaloids in *glaucium corniculatum*
M. Vatui, A. Ionescu, L. Moisuc, I. Ichim
177. Research on the influence of *hypericum perforatum* extract on consumption food and on locomotor activity, in mice
A. Ionescu, V. Nastase, F. Gherase, A. Hriscu, M. Vatui, D. Lazar, E. Hriscu
178. Quaternary protoberberines from *berberis*, *mahonia*, *thalictrum* and *hydrastis*
A. Ionescu, M. Vatui, L. Moisuc, C. Basu
179. Analysis and optimization of *Gordonia jacobaea* M-26 semi-industrial production. Evaluation of the organic extract as photoprotective agent
J. F. Rosa dos Santos, C. Rodríguez-Tenreiro y Sanchez, A. I. Rodríguez Pérez, M. Poza, T. G. Villa, J.J. Torres-Labandeira
180. Production of a recombinant β -1,6-endoglucanase and effect against *candida albicans* cultures
C. Rodríguez-Tenreiro, A.I. Rodríguez-Pérez, F. Rosa dos Santos, S. Zamuz, T. González Villa, J.J. Torres Labandeira
181. Technological study of a new phyto- therapeutic toothpaste with antibacterial and antiinflammatory action. Part III
M. Pires, A. García, M^a R. Jiménez-Castellanos

182. Persistent compounds in some plants used in herbal medicinal products
D. Diaconu, O. Paduraru, O. Voroniuc, T. Navrotescu, M. Gheorghes, F. Poenaru

Miscellaneous

183. Preparation and characterisation of PHEA-based thiomers
D. Ballian, M. Zovko, J. Filipovic-Grcic, A. Martinac, B. Zorc
184. Polymeric solubilizers for poorly water-soluble actives
N. Bouillo, K. Kolter, R.F.M. Lange, K. Mathauer, M. Pierobon
185. Researches concerning the synthesis and pharmacological properties of some new 4-hydroxybenzoic acid derivatives
M. Ungureanu, A. Poata, C. Tuchilus
186. The testation of the antioxidant activity of some conversion enzyme inhibitors through the chemiluminescence method
O. Paduraru, B. Stoica, I. Paduraru, A. Saramet
187. Comparative study of hemolytic and surface activities of the biosurfactant produced by *B. subtilis* ATCC 6633 with some synthetic surfactants
G. D. Noudeh, B.S.F. Bazzaz, M. Housaindokht
188. Effect of some pharmaceutical additives on the survival of lactic acid bacteria during freeze - drying
S. Klayraung, J. Sirithunyalug, H. Viernstein, S. Okonogi
189. Effect of Fitomix-40 on parkinsonism manifestation in mice
V. Kucheryanu, O. Bocharova, G. Kryzhanovsky, E. Bocharov, R. Karpova
190. Biological control for phytoadaptogens
O. Bocharova, M. Lyzhenkova, R. Karpova, O. Kurennaya
191. Toxic effects of Digoxin and Gitoxin acting on the Na^+/K^+ -ATPase receptor
V. Vasic, Gordana Joksic, D. Krstic, Katarina Krinulovic,
192. Spray-dried Indomethacin complexes coated with fatty acids by ultrasonic spray-congealing technique
B. Luppi, C. Cavallari, T. Cerchiara, F. Bigucci, L. Rodriguez, V. Zecchi
193. Diethyl methyl chitosan as an antimicrobial agent
M.R. Avadi, A. M.M. Sadeghi, S. Asadi, M. Latifoltojar, S. Bidarvatan, N. Nateghian, M. Rafiee-Tehrani

May 11, 2004

Poster session II

Posters are exhibited continuously from 9:00 to 18:00 with special sessions from and . The number indicates the number displayed on each panel

Emulsion and Microemulsions

194. Analysis of critical variables in the production of lipid emulsion for intravenous infusion (LEI) by sonication
D. Marin, M.A. Salvadó, A. Del Pozo
195. Formulation of topical emulsions of olive oil and pemulen TR-1® using mixtures design
E. Quintana, M^a D. Contreras, M^a D. Mingorance
196. Rheology and physical stability of the w/o/w multiple emulsions with different concentrations of the primary emulsifier
D. Vasiljevic, G. Vuleta, M. Primorac, M. Stupar
197. *In vitro* release of Diclofenac diethylamine from caprylocaproyl macrogolglycerides based microemulsions
L. Djordjevic, M. Primorac, M. Stupar
198. Structural studies of o/w emulsions stabilized with a lyotropic glucolipid emulsifier
S. Savic, N. Cekic, J. Milic, G. Vuleta, R. Daniels
199. Evaluation of a new process to obtain a solid self-emulsifying formulation
O. Chambin, V. Jannin, D. Champion, Y. Pourcelot
200. New method for the determination of the surface coverage on emulsion globules
D. Kalnin, M. Ouattara, F. Artzner, M. Ollivon

Micelles and Vesicles

201. Characterisation and *in vitro* evaluation of biological activity of Retinoic acid complexes with some bile salts
G. Caviglioli, B. Parodi, S. Cafaggi, G. Bignardi, D. Caviglia, S. Palmero, L. Scarabelli, M. Maddalena Carnasciali
202. Solubilization and stabilization of Camptothecin by amphiphilic block copolymers
R. Barreiro-Iglesias, L. Bromberg, T.A. Hatton, A. Concheiro, C. Alvarez-Lorenzo
203. Characterization of FITC-Dextran used in vesicle permeability studies
K. Andrieux, P. Lesieur, S. Lesieur, M. Ollivon, C. Grabielle-Madelmont
204. Characterization of loaded liposomes by high performance size-exclusion chromatography
C. Grabielle-Madelmont, S. Lesieur, M. Ollivon, M. Seras, S. Beugin-Deroo, B. Carion-Taravella, K. Andrieux
205. A new application of confocal scanning microscopy to characterize liposomes lamellarity
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A. Fini, G. Zuccari, I. Orienti
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G. Cavallaro, L. Maniscalco, M. Licciardi, G. Giammona
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G. Cavallaro, M. L. Turco Liveri, G. Pitarresi, G. Giammona
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C. Messina, S. Caruso, M.G. Sarpietro, F. Castelli

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L. Boulmedarat, A. Bochot, S. Lesieur, E. Fattal
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M.C. Annesini, A. Memoli, S. Petralito, W. Ramadan, F. Alhaique
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O. Rogut, E. Gafitanu, I. Coman, V. Rogut
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I. Quesada, P. J. Hernández, A. Cerezo
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M. Glavas-Dodov, E. Fredro-Kumbaradzi, K. Goracinova, M. Simonoska, S. Calis, A A. Hincal
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S. Espuelas, A. Roth, C. Thumann, B. Frisch, F. Schuber
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E. J. Staes, V. Pr eat
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Y. Zhu, M. Reinman, S. Kaukinen, H. Valtanen, O. Penate Medina
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C. Guti errez Mill an, A. Zarzuelo Casta neda, M.L. Sayalero Marinero, J.M. Lanao

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I. Rajot, D. Labarre, C. Vauthier
224. Physicochemical characterization of poly(dl-lactide) and poly(ethyl-2-cyanoacrylate) degradation
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F. Bounoure, M. Skiba, M. Skiba, R. Medeiros, P. Dechelotte, P. Arnaud
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D. Attivi, N. Ubrich, C. Damge, M. Hoffman, P. Maincent, P. Wehr e
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S. Bozdag, K. Dillen, J. Vandervoort, A. Ludwig

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E. Cengiz, S. Wissing, R.H. Müller, Y. Yazan
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S. Cafaggi, G. Caviglioli, B. Parodi, E. Russo, G. Bignardi
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E.F. Craparo, M.L. Bondi, G. Cavallaro, G. Giammona
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S. Khenniche, K. Bouchemal, S. Briançon, H. Fessi
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S. Segura, S. Espuelas, C. Gamazo, J.M. Irache
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B. Luppi, T. Cerchiara, F. Bigucci, D. Caponio, V. Zecchi
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M. Luangtana-anan, P. Opanasopit, T. Ngawhirunpat, J. Nunthanid, S. Limmattavapirat
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B. Rabinow, J. Wong, P. Papadopoulos, M. Doty, M. Chaubal, J. Konkel, C. Rebbeck, P. Gupta
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F. Sonvico, S. Mornet, C. Dubernet, M. Appel, H. Chacun, P. Colombo, E. Duguet, P. Couvreur
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G. Saint-Lorant, M. Skiba, M. Skiba, P. Arnaud

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244. Microparticles able to interfere on specific molecular targets involved in vascular proliferative diseases
C. Anchisi, G. Demuro, M.C. Meloni, A.M. Maccioni, C. Mulas.
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A.I. Torres-Suárez, M.E. Gil-Alegre, I. Quiguallo-Cáceres, L. Gutiérrez-Pauns, I. González-Álvarez

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C. Tuba Sengel, C. Hasçıçek, N. Gönül
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C. A. Ventura, S. Tommasini, E. Crupi, D. Paolino, V. Cardile, G. Puglisi
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M. Estevan, C. Gamazo, G. García del Barrio, J.M. Irache, M.J. Renedo
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D. Cunillera, J. Garces, R. Mis, U. Herranz, M. Corrado
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S. Girod, L. Arnault, A.M. Sautereau, J.L. Lacout, F. Rodriguez
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G. Dupuis, O. Chambin, Y. Pourcelot
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C. Silva, A.J. Ribeiro, D. Ferreira, F. Veiga
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K. Maculotti, I. Genta, P. Perugini, B. Conti, B. Bartolini, M. Sonaggere, T. Modena, F. Pavanetto
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G. Orive, A.M. Carcaboso, A.R. Gascón, R. M^a Hernández, J.L. Pedraz
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A. Esquisabel, G. Orive, R. Hernández, J.L. Pedraz
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M. De Castro, G. Orive, R. M^a Hernández, A. Rodriguez, M. Igartua, J.L. Pedraz
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N. Acosta, I. Pañosa, C. Penicheb, I. Aranaza, G. Galeda, A. Herasa
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C. Juliano, L. Piu, E. Gavini, P. Giunchedi
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L.M. Viel, I. Fliss, M. Subirade
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N. Passerini, B. Perissutti, D. Voinovich, B. Albertini, E. Franceschinis, L. Rodriguez
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F. Pattarino, L. Giovannelli, S. Bellomi
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K. K. Singh, M. Dahiwal

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C. Curbach, R. Bodmeier
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C. Figueredo, P.J. Hernandez, A. Valero
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C. Anselmi, M. Centini, A. Buonocore, R. Maffei Facino, M. Ricci, F. Tsuno
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R. P. Aquino, U. Conte, L. Maggi, F. De Simone, M. R. Lauro
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C. Anchisi, M. Bulla, A. M. Maccioni M.C. Meloni, C. Satta
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M^a Encarnación Morales, V. Gallardo, M^a Adolfin Ruiz
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P. Puebla, A. Fernández-Carballido, P. Pastoriza
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L. Genç, M. Demirel, B. Sevin, Y. Yazan
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G.P. Bandopadhyaya, Jaya Shukla
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A. Fernández-Carballido, R. Herrero, C. Montejo, P. Pastoriza

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275. A blue-light photo-polymerizable semi-interpenetrating network of poly(ethylene glycol)dimethacrylate and poly(D,L-lactide-co-glycolide). Physico-chemical and applicative characterizations
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G. Ertan, A. Yurdasiper
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E. Sánchez, C. Castro, I. Soriano, M. Baro, C. Évora
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279. Influence of γ -irradiation on PLA/calcium phosphates blend implants containing getamicin sulfate and Ciprofloxacin
I. Soriano, C. Castro, C. Évora, E. Sánchez

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Ma. E. Martinez Barbosa, S. Cammas-Marion, C. Vauthier, V. Montembault, L. Fontaine, G. Ponchel
281. Degradation of poly(malic acid) esters *in vitro* and their related cytotoxicities on J774 macrophages
Ma. E. Martinez Barbosa, S. Cammas-Marion, M. Appel, G. Ponchel
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C. Lemarchand, R. Gref, D. Costantini, P. Couvreur

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C. Lemarchand, R. Gref, S. Lesieur, H. Hommel, D. Costantini, P. Couvreur¹
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M.C. Lecároz, I. Sesma, C. Gamazo, M.J. Renedo, M.J. Blanco-Prieto
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M. De Oliveira, F. Pires, T. Mesquita, T. Cruz, G. Ramaldes, V. De Mello, M. Lopes
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A. Di Stefano, P. Sozio, M. Carafa, C. Marianecci, E. Santucci
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N. Denora, G. Trapani, A. Lopedota, A. Latrofa, G. Liso
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N. Ruz, M. Zabala, M.G. Kramer, M.A. Campanero, M.C. Dios-Viéitez, M.J. Blanco-Prieto
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T. Moos, S. Gosk, C. Vermehren, G. Storm

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291. Characterization of PEGylated glucagon
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B. Perez-Ramirez
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G. Ramaldes, A. Alves, F. de Oliveira, C. Gontijo, M. de Oliveira, S. Diniz, V. Cardoso
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N. Larionova, N. Balabushevich
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K. K. Singh, V. Nikam
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N. Faisant, E. Garcion, Pa. Kanaujia, P. Menei, J.P. Benoit
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A. L G Santos, A. Bochot, Y. de Kozak, F. Behar-Cohen, J.C. Jeanny, E. Fattal
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B. Ruozi, R. Battini, F. Forni, M.A. Vandelli
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H. Teixeira, E. Martini, C. Silva, C. Dubernet
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E. Jauk, D. Lochmann, J. Weyermann, A. Zimmer

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J. M. Irache, M. Esteban, M. Murillo, G. García del Barrio, M.J. Grilló, C.M. Marín, M.Barberán, M.M. Goñi, J.M. Blasco, C. Gamazo
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304. Formation of stable solid lipid nano- and microparticles containing cationic lipid/DNA complexes for gene transfer
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305. Ternary Solid Dispersion Pellets with Prednisolone
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306. Temperature-sensitive poly(N-isopropylacryl amide) as excipient for sustained-release pellets
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307. Evaluation of chitosan pellets as controlled release system of Triamcinolone acetonide
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308. The influence of drug properties on pellet formulation in rotoprocessor
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309. Characteristics of theophylline pellets prepared using different pelletization techniques
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310. Development of immediate release pellets of poorly soluble compounds using Gelucire® 44/14 using melt pelletization
P. Blachez, D. Roulot
311. Using starches and dextrans to produce pellets with different release profiles by extrusion-spheronization
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312. Floating pellets developed by the melt pelletization process
J. Hamdani, A. Moës, K. Amighi
313. ¹³C-Octanoic acid pellets formulation to evaluate gastric emptying rate: *in vitro* and *in vivo* characterization
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314. Influence of camera equipment and image digital resolution on the morphological characterization of pellets using image analysis techniques
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315. Drug particle size tailoring by supercritical assisted atomization technique
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316. Early functional characterization for particle design : Application to the development of a new compressible sugar
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317. Solvent change crystallization and agglomeration techniques for designing ciprofloxacin HCl spherical particles
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318. Study on the rule of flowing agents on pharmaceutical granules by means of a texture analyser
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P. Di Martino, E. Joiris
320. Pharmaceutical materials processing by supercritical fluids
E. Badens, O. Boutin, G. Charbit
321. Characterizing the amorphous state in pharmaceutical powders using dynamic gravimetric vapor sorption methods
D. Burnett, F. Thielmann
322. Physical characterization of syloid AL-1 and avicel PH-112 as excipients used in solid pharmaceutical dosage forms
C. Montejo, A. Fernández-Carballido, I. T. Molina-Martínez
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S. Jonat, A. Gray, S. Hasenzahl, P. Albers, P.C. Schmidt
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T. Boneva, K. Kafedjiisky, S. Titeva
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A. Iruín, J. Álvarez-Fuentes, M.A. Holgado, M. Fernández-Arévalo
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P. S. Hiremath, R N. Saha
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A. Fini, C. Cavallari, B. Albertini, N. Passerini, L. Rodriguez
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R. M. Baños, M. Millán, I. Caraballo
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W. Weyenberg, A. Vermeire, J. Vandervoort, J. P. Remon, A. Ludwig
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J. Nunthanid, M. Luangtana-anan, P. Sriamornsak, S. Limmattavapirat, S. Puttipatkhachorn
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P. Di Martino, P. Wehrlé
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C. Andrès, V. Jannin, V. Bérard, Y Pourcelot
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C. Hasçıçek, N. Gönül, M. Barlas, Ö. Denli
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A. Iruín, J. Álvarez-Fuentes, M.A. Holgado, M. Fernández-Arévalo
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349. Preparation and compatibility of gelucire 50/13/ compritol 888 ATO and ranitidine hydrochloride in matrix systems
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P. Colombo, E. Losi, G. Massimo, R. Bettini
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I. Silva, I. Etxeberria, M. Gurruchaga, I. Goñi
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A. Ruiz, J. Escudero, C. Ferrero, Ma A. García, Ma. R. Jiménez-Castellanos.
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357. Swelling studies of three cellulose ether polymers
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358. Formulation and *in vitro* evaluation of matrix tablets with Aminophylline
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S. Nagata, S. Matsushita, S. Tochio, S. Sakuma
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361. Influence of HPMC and ethylcellulose on the release of Ibuprofen
C. Lopes, J. M. Sousa Lobo, P. Costa

362. Drug release kinetics and fronts movement studies from matrix tablets combining HPMC/Eudragit polymers
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363. Tailoring Theophylline release from swellable matrices tablets
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364. Study of the swelling of hydrophilic matrices according to percolation theory
A. Miranda, M. Millán, F. Sopeña, I. Caraballo
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E. Verhoeven, C. Vervaet, J. P. Remon
366. The use of different types of carrageenan for the formulation of hydrophilic matrices for controlled release
O. Darmuzey, G. Macleod, B. Leclercq
367. Study of gel layer thickness of swelling matrix system using the texture analyser
C. Lopes, J. M. Sousa Lobo, P. Costa
368. Influence of multicomponent complexation on the release of Vinpocetine from hydrophilic swellable HPMC matrices
L. Ribeiro, D. Ferreira, F. Veiga
369. Structural-rheological and biopharmaceutical study of hydrogel matrix tablets containing Molsidomine I. mixed cellulose hydrogel matrices
V. Michailova, S. Titeva, L. Ivanov
370. Structural-rheological and biopharmaceutical study of hydrogel matrix tablets containing Molsidomine II. Thermally pregelatinized Corn starch gels
S. Titeva, V. Michailova, L. Ivanov
371. The influence of sodium lauryl sulphate on the release rate of Theophylline from hydroxyethylcellulose and polyox matrices
M. A. Mozo Casado, M.V. Margarit Bellver, M. T. Marín Boscá
372. *In vitro* release of Salicylic acid and sodium Salicylate from hydrogel matrices
F. Javier Navarro, P. Bustamante, B. Escalera
373. Effect of formulation variables on drug release from ethylcellulose sustained--release matrix tablets
M. H. Amaral, J. M. Sousa Lobo, D. C. Ferreira
374. Device to ruminal drugs release
L. Contreras, L. M. Melgoza, J. J. Martínez, F. Plata, R. Ricalde, H. Sandoval.
375. Effect of drug solubility on the release from multiparticulate pulsatile drug delivery system
A. Mohamad, A. Dashevsky, R. Bodmeier
376. Multiparticulate oral drug delivery systems based on ion-exchange resins
M. Polsinger, F. Reiter, E. Stabentheiner, A. Zimmer
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379. Chewing gum: a friendly drug delivery system
L. Maggi, L. Segale, R. Norberti, U. Conte, A. Salini
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S. Hemmerlé, C. Maridat, P. Wehrlé
381. Selection of fillers for laboratory production of capsules
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382. Stability of solids in semi-permeable containers: another alternative to the “general case” proposed by ICH?
A. I. Torres-Suárez, M. A. Camacho, M. E. Gil-Alegre

Coating

383. Optimization of the process of solution layering in precision coater by changing solution flow
M. Eškinja, A. Gojceta
384. The influence of film coatings on performance of hypromellose matrices
M. Levina, P. Wan
385. HPMC coating of tablet cores by powder layering for the attainment of oral pulsatile release
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386. The effect of filler type and pigmentation on the performance of aqueous film coatings
B. Friend, N. Turnbull, C. Avery
387. Effect of plasticizers in enteric acrylic coating applied on soft gelatin capsules by a pilot pan
A. Spadoni, A. Genovesi, C. Funaro, R. Bertolami, C. Vecchio
388. Coating of pellets with aqueous dispersions of cellulose acetate phthalate and different plasticizers
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389. Effect of quality of ethylcellulose on its film forming properties
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390. Mechanical properties of modified starch AMPRAC 01® films
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Plenary lectures

POTENTIAL USE OF CYCLODEXTRINS IN PEPTIDE AND PROTEIN DELIVERY

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Advances in biotechnology have allowed the economical and large-scale production of therapeutically important peptide and protein drugs to be used to combat poorly controlled diseases. The rapid progress in molecular biology, however, has not been matched by the progress in the formulation and development of delivery systems for such next generation drugs. Many attempts have addressed these problems by chemical modifications or by coadministration of adjuvants to eliminate undesirable properties of peptide and protein drugs such as chemical and enzymatic instability, poor absorption through biological membranes, rapid plasma clearance, immunogenicity, etc. Cyclodextrin (CyD) seems to be an attractive alternative to these approaches. The objective of this contribution is to summarize recent findings on the potential use of CyDs and their derivatives as carrier for therapeutically important peptide and protein drugs such as buserelin acetate, insulin, bFGF, rhGH, etc. CyDs enable the creation of advanced dosage forms for the next generation drugs that are difficult to formulate and deliver with the existing pharmaceutical excipients. As one of the indices relevant to bioadaptability of CyDs in pharmaceutical uses, their interaction with cellular membranes is outlined. Particular attention is also paid to the inhibitory effects of some branched β -CyDs on aggregation of rhGH during refolding from molten globule-like intermediates. Although the toxicological issues together with biological fates should be investigated in detail, the CyDs described here have many advantages as novel tools for the delivery of peptide and protein drugs and should be pursued.

SWELLING, TABLETTING AND DRUG DELIVERY CONTROL

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The research field here described continues to be a source of innovation, education and industrial results since Aldo La Manna started pioneering studies on physics of compression at the University of Pavia in the 70's. The links between compression technology and drug delivery control were investigated with the idea that the manufacturing process could help controlling and predicting the release rate of matrix and reservoir systems. Mini-matrices cross-linked on the external surface were firstly proposed as a zero order delivery rate system. The interest on swellable matrices was mainly due to the easiness of their manufacturing by compression. Since matrices are typically characterized by non-linear delivery rate, an innovative approach to modify matrix swelling was attempted, by means of partial coatings applied on the matrix surface. Swelling restricted matrices were obtained: the delivery rate and kinetics were substantially changed depending on extension and position of the applied impermeable coating. The most interesting system was a swellable partially coated cylindrical matrix with only one base available for release. This peculiar configuration led to a constant delivery area system, in which it was possible to measure the time course of gel thickness, by monitoring the movement of the relevant fronts of the matrix. The main emerging novelty was that zero order drug release was achieved when polymer swelling and erosion kinetics allowed for fronts synchronization, i.e., constant gel layer thickness. From this discovery several systems were prepared, among which the successful commercial product Geomatrix[®]. Today, the research in this field is continuing, with an extension of the concepts of swelling restriction and modular assembly. The new delivery module Dome Matrix[®] will be illustrated, showing that swelling and drug release depend not only on the surface area of delivery but also on the shape of this surface. Finally, the control on time and space can be optimized through the appropriate combination of several Dome modules.

DRUG DELIVERY BY POLYMER CONJUGATION

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The delivery of drugs, either of low and high molecular weight, and as well as the products coming from the new biotechnological methods, is facing several limitations. The rapid clearance from circulation and the degradation by metabolic enzymes are common problems for drug, moreover peptides and proteins present the additional limitation due to their potential immunogenicity.

Several strategies are used to overcome these drawbacks such as the entrapment into liposomes or microcapsules, or the use of physical devices for their administration, but a procedure that appears of great potential exploits the covalent conjugation of drugs to soluble, non-toxic, non-immunogenic polymer.

The strategy got great success in the delivery of proteins by the pioneering work of Torkilin based on the use of dextran to improve the performance of streptokinase. Later the polymer choice, at least for what peptide and protein is concerned, was the poly(ethylene glycol).

This presentation will deal mainly with the use of this last polymer and with the synthetic strategies for its conjugation to polypeptides or to non-peptide drugs.

Typical examples coming from literature or from our laboratory will be reported.