

Curriculum vitae

Francesco De Angelis-

Last position: Full Professor of Organic Chemistry University of L'Aquila – Italy (2001-2019)

Member of:

Società Chimica Italiana
Royal Society of Chemistry (Fellow)
American Chemical Society
American Society for Mass Spectrometry
Professional Order of Chemists (Italy)

Education and career

- Doctor of Chemistry *magna cum laude*, University of Roma “la Sapienza” - supervisor: Prof. Rosario Nicoletti: July 1974
- Post-Doctoral Donegani Foundation Fellowship of the Accademia Nazionale dei Lincei (Italy), at the University of Roma “la Sapienza” with Prof. Rosario Nicoletti: 1975
- Research Fellowship of the Italian Ministry of University and Research, University of Roma “La Sapienza”: January 1976 – June 1981
- Assistant Professor, University of Roma “la Sapienza”: July 1981 – October 1987
- Associate Professor of Organic Chemistry, University of L'Aquila: November 1987 – September 2001
- Full Professor of Organic Chemistry, University of L'Aquila: October 2001 to present
- Visiting Scientist for ca. one year at the University of Cambridge (U.K.), by Prof. Dudley H. Williams: 1981
- Visiting Professor at the University of Zurich: three months 1991
- Visiting Professor at the University of Warsaw: May 2009
- Founder and Director of the School of Mass Spectrometry of the SCI, at the University of Siena (1997-2011)
- Consultant at the chemistry department of the pharmaceutical industry Sigma-Tau (Italy): from 1991 to 2007
- Expert for the Italian Ministry of Education and Research and Ministry of Economic Development (Italy) for the evaluation of industrial and university projects: from 1990

Research

- Research interests in the fields of organic synthesis, natural organic compounds, mass spectrometry
- Author of 129 publications and 13 extended patents
- Invited lecturer at international congresses and universities
- Invited lecturer at national and international schools of Organic Chemistry and Mass Spectrometry
- Referee for many international journals, among them *Angewandte Chemie – Int. Ed.*
- Responsible of a number of research projects on public (CNR, MIUR, research consortia) and private (ENI, pharma industries) funds
- Supervisor of 15 PhD students

- FDA was the founder of the Mass Spectrometry discipline at the University of l'Aquila (nineties of last century)

Focus on recent research interests

- Following his continuing interest in (bio)organic mass spectrometry and in the chemistry of natural organic compounds, based on his past achievements in lignin chemistry, the focus of prof. De Angelis' research is currently on the biosynthesis and structural arrangement of eumelanins and allomelanins, and on the structure of poly(ionicliquid)s. Recent studies are in the field of the structural characterisation by mass spectrometry of bio-oils obtained from organic wastes by hydrothermal liquefaction. He has recently also explored the reaction mechanisms of complex organic reactions by Electrospray Mass Spectrometry (ESI-MS) and related techniques, looking for elusive reaction intermediates.

Honors

- Award for activity and education in Mass Spectrometry, by the MS Division of the Italian Chemical Society (2008)
- Award for research from the "Anassilaos Association" – Reggio di Calabria – Italy (2005)
- Gold Medal "Domenico Marotta" of the Italian Chemical Society – Italy (2011)
- Member of the "Accademia delle Scienze" di Bologna (from 2013)
- Fellow of the Royal Society of Chemistry (from 2010)
- Honorary Fellow of ChemPubSoc Europe (2015)
- "Constantin Istrati" medal of the Romanian Chemical Society (2016)
- Among top 5% of reviewers for *Angewandte Chemie* in 2016 and 2017
- EuChemS Service Award 2018

Editorial Activity

- Member of the Editorial Board of *ChemSusChem* (2008 - 2015)
- Editor-in-Chief of *Annali di Chimica* (2006 – 2007)
- Member of the Editorial Board of the *Journal of Mass Spectrometry* (until 2006)
- Member of the scientific committee of La Chimica e l'Industria (2005 - 2008)
- Member of the Advisory Board of the EuChemS Newsletter (2015 - 2016)
- Member of ChemRxiv (open preprint server for the global chemistry community – ACS; RSC; GDCh) Scientific Advisory Board (from 2018)

Contribution to national/international bodies

Società Chimica Italiana (SCI)

- President of the Italian Chemical Society: 2005 – 2007
- Vice-President of the Italian Chemical Society: 2002 – 2004
- President elect of the Italian Chemical Society: 2004
- President of the Division of Mass Spectrometry of the Italian Chemical Society: 1999 – 2001
- Chair of the XXII Congress of the SCI – Firenze, September 2006
- SCI delegate at ChemPubSoc Europe and ABC (Analytical and Bioanalytical Chemistry) journal

Consiglio Nazionale delle Ricerche

- Member of the Scientific Council of the Institute of Nuclear Chemistry: 1994 - 2002

International Mass Spectrometry Society

- Member of the Governing Committee: 2002 - 2004

European Chemistry Thematic Network (ECTN) Association

- President: 2013 - 2015
- Vice President: 2011 – 2013
- Member of the Administrative Council: 2009 - 2017
- Member of the Label Committee (for Eurolabels in Chemistry): 2008 - 2009
- Representative of the (SCI) Società Chimica Italiana (2005 – 2008) and member of the pool of experts for University visits (from 2005)
- Representative of ECTN at the European Alliance for Subject-Specific and Professional Accreditation on Quality Assurance (EASPA), and member of the Executive Board: from 2017

European Chemical Society (EuChemS) – formerly European Association for Chemical and Molecular Sciences (EuCheMS)

- Treasurer of EuCheMS from 2010 to 2016, and member of the Executive Board from 2010 until 2017
- Member of the EuCheMS Strategy and Finance Committee: 2005 to its end in 2009
- Member of the EurChem Registration Board (organism of EuCheMS): from 2009
- Co-chair of the Organizing Committee of the 2nd European Chemistry Congress (ECC - Torino 2008)
- Member of the Scientific Committee of the 3rd ECC (Nuremberg 2010)
- Member of the Scientific Committee of the 4th ECC (Prague 2012)
- Member of the Organising Committee of the 6th ECC (Sevilla 2016)

ChemPubSoc Europe (Publishing Association of 16 Chemical Societies in Europe – publishing 16 Int. Journals in Chemistry and a web-portal)

- Member of the ChemPubSoc Europe society partnership (from 2006)
- President of the journals ChemMedChem (from 2006) and ChemSusChem (from 2008) partnerships
- Member of the ChemPubSoc Europe Governing Council (five members): from 2005

International Union of Pure and Applied Chemistry (IUPAC)

- Co-chair of the International Advisory Board and of the Scientific Program Committee of the 41st IUPAC Congress (Torino, 2007)
- Representative of the Italian CNR at the 44th (Torino), 45th (Glasgow), 46th (Porto Rico), 47th (Istanbul) IUPAC General Assembly

List of publications:

1. Francesco De Angelis, Augusto Gambacorta, Rosario Nicoletti*
An improved route for ring expansion of five-membered heterocyclic compounds by use of phase transfer catalysts
Synthesis **1976**, 798
2. Francesco De Angelis, Maria L. Forcellese, Augusto Gambacorta, Rosario Nicoletti
The substituent effect in the fragmentation of phenylcyclohexanols
Org. Mass Spectrom. **1977**, 12, 313
3. Francesco De Angelis, Massimo Grasso, Rosario Nicoletti*
N-Alkylation of indole with secondary alcohols
Synthesis **1977**, 335
4. Maurizio Botta, Francesco De Angelis, Rosario Nicoletti*
A new, facile *N*-alkylation of amines with alcohols
Synthesis **1977**, 722
5. Maurizio Botta, Francesco De Angelis, Rosario Nicoletti
Synthesis of 2-amino-3-methoxypyrazine
J. Heterocyclic Chem. **1979**, 16, 193
6. Francesco De Angelis, Ingeborg Grgurina, Rosario Nicoletti*
A convenient synthesis of secondary amines
Synthesis **1979**, 70
7. Maurizio Botta, Francesco De Angelis, Rosario Nicoletti
Alcohols and aluminium alkoxides in the presence of raney nickel as alkylating agents. I. Alkylation of indoles and pyrroles
J. Heterocyclic Chem. **1979**, 16, 501
8. Maurizio Botta, Francesco De Angelis, Rosario Nicoletti, Maria Tricarico
The role of acid catalysis in the genesis of amber
Phytochemistry **1982**, 21, 381
9. Maurizio Botta, Francesco De Angelis, Augusto Gambacorta*
The reaction between 2,3-dialkylindoles and dichlorocarbene
Tetrahedron **1982**, 38, 2315
10. Francesco De Angelis,* Gabriella Ferretti, Maurizio Botta, Ingeborg Grgurina, Rosario Nicoletti*
Alcohols and aluminium alkoxides in the presence of raney-nickel as alkylating agents. II. A kinetic study of alkylation of aromatic amines

Gazz. Chim. Ital. **1982**, *112*, 267

11. Francesco De Angelis,* Gabriella Ferretti, Maurizio Botta, Rosario Nicoletti*
Rearrangements of monoterpenes in fused organic acids
Gazz. Chim. Ital. **1982**, *112*, 499

12. Dudley H. Williams, Sittivet Santikarn, Peter B. Oelrichs, Francesco De Angelis, John MacLeod, Richard J. Smith
The structure of a toxic octapeptide, containing 4 D-amino-acids, from the larvae of a sawfly, *Lophyrotoma interrupta*
J. Chem. Soc., Chem. Commun. 1982, 1394

13. Dudley H. Williams,* Gustav Bojesen, Sittivet Santikarn, Francesco De Angelis, Peter B. Oelrichs, John MacLeod
Study of a toxic octapeptide from the larvae of sawfly by fast atom bombardment mass spectrometry
Int. J. Mass Spectrom. and Ion Phys. **1983**, *46*, 427

14. Maurizio Botta, Francesco De Angelis, Augusto Gambacorta*
The reaction between 2,3-dialkylindoles and dichlorocarbenes. Additional evidence for the interconversion of the reaction intermediates
Gazz. Chim. Ital. **1983**, *113*, 129

15. Dudley H. Williams, Sittivet Santikarn, Francesco De Angelis, Richard J. Smith, David G. Reid, Peter B. Oelrichs, John MacLeod
The structure of a toxic octapeptide from the larvae of sawfly
J. Chem. Soc., Perkin Trans. 1 **1983**, 1869

16. Fabio Animati, Maurizio Botta, Francesco De Angelis, Andrea Dorigo, Ingeborg Grgurina, Rosario Nicoletti*
Studies related to cephalosporins. Part 1. Solvolytic reactions of 3-bromomethylcephems with alcohols and phenols
J. Chem. Soc., Perkin Trans. 1 **1983**, 2281

17. Maurizio Botta,* Massimo Cavalieri, Dario Ceci, Francesco De Angelis, Gabriella Finizia, Rosario Nicoletti*
6-Alkyl and 5,6-dialkyl-2-methoxy-4(3h)-pyrimidinones in the transformations of pyrimidines. 1. Synthesis and conversion into alkyluracils and 2-alkoxy-4(3h)-pyrimidinones
Tetrahedron **1984**, *40*, 3313

18. Paolo Alessandri, Francesco De Angelis, Augusto Gambacorta
Dehydration of tertiary bicyclo[3.3.1]nonan-9-ol-2-ones. A rearrangement to *cis*-fused hexahydroinden-1-ones
Tetrahedron **1985**, *41*, 2831

19. **Review** - Francesco De Angelis
Fast atom bombardment mass spectrometry: a powerful technique for structural studies on peptides

20. Maurizio Botta, Francesco De Angelis,* Fabio Giannessi, Mauro Marzi, Rosario Nicoletti
Substitution reactions on 3-bromomethyl-3-cephems and their sulphone analogues with acyloxy residues
Recent Advances in the Chemistry of β -Lactam Antibiotics, S.M. Roberts and A.G. Brown Ed.s, Royal Society of Chemistry Special Publication n° 52, London, **1985**, p. 331
21. Maurizio Botta,* Francesco De Angelis, Gabriella Finizia, Augusto Gambacorta, Rosario Nicoletti*
6-Alkyl and 5,6-dialkyl-2-methoxy-4(3h)-pyrimidinones in the transformation of pyrimidines. conversion into 2-substituted amino- and 4-chloro-pyrimidine derivatives
Synth. Commun. **1985**, *15*, 27
22. Maurizio Botta, Francesco De Angelis,* Augusto Gambacorta, Lucia Labbiento, Rosario Nicoletti*
Reduction of Schiff bases with isopropyl alcohol and aluminium isopropoxide in the presence of Raney nickel
J. Org. Chem. **1985**, *50*, 1916
23. Maurizio Botta, Francesco De Angelis,* Augusto Gambacorta, Fabio Giannessi, Rosario Nicoletti*
Studies related to cephalosporins. Part 3. Synthesis of 3'-functionalised ceph-3-em 1,1-dioxides by photoinitiated bromination
Gazz. Chim. Ital. **1985**, *115*, 169
24. Maurizio Botta, Francesco De Angelis, Ingeborg Grgurina, Mauro Marzi, Rosario Nicoletti*
Studies related to cephalosporins. Part 2. Displacement reactions on 3-bromomethylcephems with salts of carboxylic acids
J. Heterocycl. Chem. **1985**, *22*, 1001
25. Maurizio Botta,* Francesco De Angelis, Gabriella Finizia, Rosario Nicoletti,* Maurizio Delfini
6-Alkyl and 5,6-dialkyl-2-methoxy-4(3H)-pyrimidinones in the transformations of pyrimidines. Regiospecific 1-N-acylation of pyrimidines
Tetrahedron Lett. **1985**, *26*, 3345
26. Francesco De Angelis,* Maurizio Botta, Stefano Ceccarelli, Rosario Nicoletti*
Peptide sequencing by using a combination of partial acid hydrolysis and fast-atom bombardment mass spectrometry
Biochem. J. **1986**, *236*, 609
27. Massimo Castagnola,* Raffaele Landolfi, Diana V. Rossetti, Francesco De Angelis,* Stefano Ceccarelli
Determination of abnormal haemoglobin variants by the combined use of reversed-phase high performance liquid chromatography and fast atom bombardment mass spectrometry
Analytical Letters **1986**, *19*, 1793
28. Francesco De Angelis,* Giancarlo Doddi,* Gianfranco Ercolani*
Fast atom bombardment mass spectrometry: a useful technique for structural characterization of pyrylium, thiopyrylium, and pyridinium cations

29. Francesco De Angelis,* Maurizio Botta, Rosario Nicoletti
Peptide sequencing by fast atom bombardment mass spectrometry: acid hydrolysis or tandem mass spectrometry ?
Biochem. J. **1987**, 245, 621
30. Maurizio Botta,* Francesco De Angelis, Augusto Gambacorta, Lorenzo De Ferra, Giampiero Montesperelli, Rosario Nicoletti*
Studies related to cephalosporins. IV. Electrophilic addition to 3-exomethylene-1-cephams: the addition of phenylselenenyl chloride
Tetrahedron Lett. **1987**, 28, 5539
31. Massimo Castagnola,* M. Debosz, Raffaele Landolfi, V. L. Pascali, Francesco De Angelis,* L. Vettore, G. Perona
Determination of neutral haemoglobin variants by immobilized pH gradient, reversed-phase high-performance liquid chromatography and fast-atom bombardment mass spectrometry: the case of Hb Torino α_{43} (CE1) Phe \rightarrow Val
Biol. Chem. Hoppe-Seyler **1988**, 369, 241
32. Maurizio Botta,* Francesco De Angelis, Rosario Nicoletti, A. Pani, M. E. Marongiu, Paolo La Colla
6-Alkyl-2-methoxy-4-(3H)-pyrimidinones in the transformation of pyrimidines: regiospecific preparation, antitumor and antimicrobial activity of 4-o-acylated pyrimidine derivatives. New agents for selective acylation of amines
Tetrahedron Lett. **1988**, 29, 2741
33. Francesco De Angelis,* Rosario Nicoletti,* Adalberto Santi
Thiodiethyleneglycol: a very efficient matrix compound for fast atom bombardment mass spectrometry (FAB-MS)
Org. Mass Spectrom. **1988**, 23, 800
34. L. W. Bieber,* A. A. Da Silva Filho, E. C. Silva, J. F. De Mello, F. D. A. Lyra, M. S. Do Nascimento, Bruno Botta, Francesco De Angelis,*
The anthracyclinic complex retamycin, 1. Structure determination of the major constituents
J. Nat. Prod. **1989**, 52, 385
35. Francesco De Angelis,* Maurizio Botta, Roberto Antonelli, Andrea Dorigo, Rosario Nicoletti,*
Studies related to cephalosporins. V. Epimerisation and rearrangement reactions of phthalimidocephalosporin sulphones by base treatment
Gazz. Chim. Ital. **1989**, 119, 375
36. Maurizio Botta,* Francesco De Angelis, Lorenzo De Ferra, Augusto Gambacorta, Rosario Nicoletti,* A. Palleschi, C. Marciante, G. Pochetti
Studies related to cephalosporins. 6. Bromination of 3-exomethylene in cepham derivatives
Tetrahedron **1989**, 45, 2811

37. Francesco De Angelis,* Rosario Nicoletti, L. W. Bieber, Bruno Botta
The antibiotic complex of retamycins: a fast atom bombardment mass spectrometric study
Biomed. Environ. Mass Spectrom. **1989**, *18*, 553
38. Francesco De Angelis,* Stefano Ceccarelli, G. C. Viscomi, M. Pinori, A. S. Verdini
Fast atom bombardment mass spectrometry and selective acid hydrolysis for the analysis of partially modified retro-inverso peptide analogues
Biomed. Environ. Mass Spectrom. **1989**, *18*, 867
39. Maurizio Botta,* Francesco De Angelis, Federico Corelli, Maria Menichincheri, Rosario Nicoletti,* M. E. Marongiu, A. Pani, P. La Colla
Antiviral agents: synthesis of furylpyrimidinones and evaluation of their cytostatic and antiviral activity
Arch. Pharm. **1991**, *324*, 203
40. Giovanni Giovannozzi-Sermanni, C. Perani, A. Porri, Francesco De Angelis, Maria V. Barbarulo, Daniele Mendola, Rosario Nicoletti
Plant cell wall degradation by means of *Lentinus edodes* and chemical characterization of produced soluble lignocellulose
Agrochimica **1991**, *35*, 174
41. **Review** - Francesco De Angelis
The mass spectrometric determination of retro-inverso linear peptides
Mass spectrometry in the biological sciences: a tutorial, M. Gross Ed., **1992**, Kluwer Academic Publishers, the Netherlands, p. 357-369
42. Francesco De Angelis,* Maria V. Barbarulo, Milena Bruno, L. Volterra, Rosario Nicoletti
Chemical composition and biological origin of 'dirty sea' mucilages
Phytochemistry, **1993**, *34*, 393
43. Francesco De Angelis, Marta Feroci, Achille Inesi,*
Reactivity of 2-chloro- and 2-(tosyloxy)cyclohexanones towards anions electrogenerated at carbonium and nitrogen atoms. electrochemically induced Favorskii rearrangement
Bull. Soc. Chim. Fr. **1993**, *130*, 712
44. Francesco De Angelis,* Andrea Scalonì, Vittorio Caciagli, Antonio S. Verdini,*
Synthesis of a toxic octapeptide from the larvae of sawfly
J. Chem. Soc., Chem. Commun. **1994**, 445
45. Francesco De Angelis,* Rosario Nicoletti, Thomas Kuster, Claus W. Heizmann, Massimo Pinori, Antonio S. Verdini
Analysis of a bioactive synthetic analogue of tuftsin by tandem mass spectrometry: anomalous fast atom bombardment activated process
Biol. Mass Spectrom. **1994**, *23*, 262

46. Ida Bernabei, Roberto Castagnani, Francesco De Angelis, Paolo De Witt, Fabio Giannessi,* Domenico Misiti, Sandra Muck, Nazareno Scafetta, Maria O. Tinti
Totally enantioselective inversion of configuration of S-(+)-carnitine derivatives
Angewandte Chemie, Int. Ed. **1994**, 33, 2076
47. Francesco De Angelis,* Achille Inesi, Marta Feroci, Rosario Nicoletti
Reaction of electrogenerated dichlorocarbene with methylindoles
J. Org. Chem. **1995**, 60, 445
48. Roberto Castagnani, Francesco De Angelis, E. De Fusco, Fabio Giannessi,* Domenico Misiti, D. Meloni, Maria O. Tinti
Stereospecific synthesis of (R)-aminocarnitine (emeriamine) starting from (R)-carnitine via double inversion of configuration
J. Org. Chem. **1995**, 60, 8318
49. Ida Bernabei, Roberto Castagnani, Francesco De Angelis, E. De Fusco, Fabio Giannessi,* Domenico Misiti, Sandra Muck, Nazareno Scafetta, Maria O. Tinti
The β -lactone route to a totally stereoselective synthesis of carnitine derivatives
Chem. Eur. J. **1996**, 2, 826
50. Francesco De Angelis,* Patrizia Fregonese, Franca Veri
Structural investigation of synthetic lignins by matrix-assisted laser desorption/ionization time-of-flight mass spectrometry
Rapid Commun. Mass Spectrom. **1996**, 10, 1304
51. Francesco Bonadies, Francesco De Angelis, Ludovica Locati, Arrigo Scettri
A convenient acid-catalyzed oxidation of sulfides to sulfoxides by *t*-butyl hydroperoxide
Tetrahedron Lett. **1996**, 37, 7129
52. Francesco De Angelis,* Antonio Arcadi, Fabio Marinelli, Maurizio Paci, Dario Botti, Giovanni Pacioni, Michele Miranda
Partial structures of truffle melanins
Phytochemistry **1996**, 43, 1103
53. G. Calvisi, R. Catini, W. Chiarotti, Fabio Giannessi,* Sandra Muck, Maria O. Tinti, Francesco De Angelis,*
Single step conversion of chiral carnitine and derivatives into (S)- and (R)- β -substituted- γ -butyrolactones
Synlett **1997**, 1
54. Giuliano Bandoli,* A. Dolmella, S. Gatto, Francesco De Angelis
Molecular modelling studies of 2-substituted cephalosporin esters binding to human leukocyte elastase
Eur. J. Med. Chem. **1997**, 32, 219

55. Roberto Anacardio,* M.G. Cantalini, Francesco De Angelis, Marco Gentile
Quantification of *S*-carboxymethyl-*(R)*-cysteine in human plasma by high-performance ion-exchange liquid chromatography/atmospheric pressure ionization mass spectrometry
J. Mass Spectrom. **1997**, 32, 388
56. Francesco De Angelis, Mauro Marzi,* Patrizia Minetti, Domenico Misiti, Sandra Muck
A new approach to the protection of 1,2-diols
J. Org. Chem. **1997**, 62, 4159
57. M. Calvani, L. Critelli, Grazia Gallo, Fabrizio Giorgi, G. Gramiccioli, Mosè Santaniello,* Nazareno Scafetta, Maria O. Tinti, Francesco De Angelis,*
L-Carnitine esters as soft, broad-spectrum antimicrobial amphiphiles
J. Med. Chem. **1998**, 41, 2227
58. Francesco De Angelis,* Cristina Mozzetti, Alessandra Di Tullio, Rosario Nicoletti
Antipodal forms of cephem derivatives *via* stereochemical manipulations of the cephalosporin nucleus
Chem. Commun. **1999**, 253
59. Francesco De Angelis,* Rosario Nicoletti, Nicoletta Spreti, Franca Veri
A new *in vitro* model of lignin biosynthesis
Angewandte Chemie, Int. Ed. **1999**, 38, 1283
60. Francesco De Angelis,* Alessandra Di Tullio, Giorgio G. Mellerio, Raimondo Quaresima, Roberto Volpe
Investigation by solid-phase micro-extraction and gas chromatography/mass spectrometry of organic films on stone monuments
Rapid Commun. Mass Spectrom. **1999**, 13, 895-900
61. Francesco De Angelis,* E. De Fusco, Paola Desiderio, Fabio Giannessi,* Fabrizio Piccirilli, Maria O. Tinti
Totally enantioselective inversion of configuration of (*S*)- β -hydroxy- γ -butirolactone
Eur. J. Org. Chem. **1999**, 2705-2707
62. Mauro Marzi,* Patrizia Minetti, Giampiero Moretti, Maria O. Tinti, Francesco De Angelis,*
Efficient enantioselective synthesis of (*R*)-(-)-carnitine from glycerol
J. Org. Chem. **1999**, 65, 6766-6769
63. Fabio Giannessi,* P. Chiodi, Mauro Marzi, Patrizia Minetti, Pompeo Pessotto, Francesco De Angelis, Emanuela Tassoni, R. Conti, Fabrizio Giorgi, Massimo Mabilia, Natalina Dell'Uomo, Sandra Muck, Maria O. Tinti, Paolo Carminati, Arduino Arduini*
Reversible carnitine palmitoyltransferase inhibitors with broad chemical diversity as potential antidiabetic agents
J. Med. Chem. **2001**, 44, 2383-2386
64. Francesco De Angelis,* Giuseppe Attorrese, Giancarlo Cavicchio, Sabatino Ciampa, Alessandra Di Tullio,

Daniela Fattori, Rosario Nicoletti, Enrico Domenici

Synthesis and preliminary biological evaluation of 3'-substituted cephem sulfones as potential β -lactamase inhibitors

Eur. J. Org. Chem., **2001**, 3075-3081

65. Francesco De Angelis,* Alessandra Di Tullio, Laura Spanò, Adele Tucci
Mass spectrometric study of different isoforms of the plant toxin saporin
J. Mass Spectrom. **2001**, 36, 1237-1239
66. Francesco De Angelis,* Alessandra Di Tullio, Roberta Ceci, Raimondo Quaresima, Mario Marsili
Application of multivariate analysis for recognition of organic patinas on stone monuments
J. Sep. Sci. **2002**, 25, 29-36
67. Salvatore Fanali, Marcello Crucianelli, Francesco De Angelis, Carla Presutti
Enantioseparation of amino acid derivatives by capillary zone electrophoresis using vancomycin as chiral selector
Electrophoresis **2002**, 23, 3035-3040
68. **General Review** - Andrea Raffaelli, Francesco De Angelis, Gloriano Moneti
Ionizzazione per elettronebulizzazione: una rivoluzione per la spettrometria di massa
La Chimica e l'Industria **2002**, 84, 10, 56, full article (pp. 1-9) on web: [http://www.sci-lombardia.org/c&I/2002/dicembre/c&I.asp\(022\)](http://www.sci-lombardia.org/c&I/2002/dicembre/c&I.asp(022))
69. Fabio Giannessi,* Pompeo Pessotto, Emanuela Tassoni, Piero Chiodi, Roberto Conti, Francesco De Angelis, Natalina Dell'Uomo, Roberto Catini, Roberto Deias, Maria O. Tinti, Paolo Carminati, Arduino Arduini
Discovery of a long-chain carbamoyl aminocarnitine derivative, a reversible carnitine palmitoyltransferase inhibitor with antiketotic and antidiabetic activity
J. Med. Chem. **2003**, 46, 303-309
70. Francesco De Angelis,* Roberta Ceci, Raimondo Quaresima, Samantha Reale, Alessandra Di Tullio
Investigation by SPME and GC/MS of secondary metabolites in lichens deposited on stone monuments
Rapid Commun. Mass Spectrom. **2003**, 17, 526-531
71. Giuseppina Calvisi, Natalina Dell'Uomo, Francesco De Angelis, Roberto Dejas, Fabio Giannessi,* Maria Ornella Tinti
A practical and stereoconservative synthesis of (R)-3-amino-4-(trimethylammonium)-butanoate ((R)-aminocarnitine), and its trimethylphosphonium and simple ammonium analogues starting from D-aspartic acid
Eur. J. Org. Chem. **2003**, 4501-4505
72. Francesco De Angelis,* Alessandra Di Tullio, Piero Del Boccio, Samantha Reale, Gianfranco Savelli, Nicoletta Spreti
ESI-MS in the study of the activity of α -chymotrypsin in aqueous surfactant media
Org. Biomol. Chem. **2003**, 1, 3125-3130

73. **Review** - Alessandra Di Tullio, Samantha Reale, Francesco De Angelis*
Mass spectrometry and molecular recognition
Seminars in Organic Synthesis, Enrico Marcantoni, Gabriele Renzi Editors, Società Chimica Italiana, Roma, **2003**, p. 215-240
74. Alessandra Di Tullio, Francesco De Angelis,* Samantha Reale, Donato A. Grasso, Roberto Visicchio, Cristina Castracani, Alessandra Mori, Francesco Le Moli
Investigation by solid-phase microextraction and gas chromatography/mass spectrometry of trail pheromones in ants
Rapid Commun. Mass Spectrom. **2003**, *17*, 2071-2074
75. Cristina Castracani, Alessandra Di Tullio, Donato A. Grasso, Roberto Visicchio, Alessandra Mori, Francesco Le Moli, Samantha Reale, Francesco De Angelis*
Determination of the mandibular gland secretion of *Polyergus rufescens* queens by solid phase microextraction and gas chromatography/mass spectrometry
J. Mass Spectrom. **2003**, *38*, 1288-1289
76. Marcello Crucianelli,* Francesco De Angelis, Francesco Lazzaro, Luciana Malpezzi, Alessandro Volonterio, Matteo Zanda
Synthesis of enantiomerically pure α -ethyl, α -vinyl and α -ethynyl 3,3,3-trifluoro alaninates
J. Fluor. Chem. **2004**, *125*, 573-577
77. **Review** - Samantha Reale, Alessandra Di Tullio, Nicoletta Spreti, Francesco De Angelis*
Mass spectrometry in the biosynthetic and structural investigation of lignins
Mass Spectrometry Rev. **2004**, *23*, 87-126
78. Francesco Lazzaro, Marcello Crucianelli, Francesco De Angelis, Massimo Frigerio, Luciana Malpezzi, Alessandro Volonterio, Matteo Zanda
Stereoselective synthesis of (R)- and (S)- α -trifluoromethyl aspartic acid via titanium enolate addition to a sulfinimine of trifluoropyruvate
Tetrahedron: Asymmetry **2004**, *15*, 889-893
79. Gianluca Bianchini, Marcello Crucianelli,* Francesco De Angelis, Veronica Neri, Raffaele Saladino
A novel catalyzed C-H insertion reactions of hydrogen peroxide by poly(4-vinylpyridine)/methyltrioxorhenium systems
Tetrahedron Letters **2004**, *45*, 2351-2353
80. Giuseppe Giannini, Mauro Marzi,* Gian Piero Moretti, Sergio Penco, Maria Ornella Tinti, Silvia Pesci, Francesco Lazzaro, Francesco De Angelis
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