

Curriculum Vitae et Studiorum

Dr. SERGIO RIVA

Born: June 23rd, 1958 Milano (Italy); *Nationality:* Italian

Education:

January 1983, *Laurea in Chimica* (110/110 *cum laude*), Università degli Studi di Milano

December 1989, *Diploma di Specialità in Sintesi Chimica*, Politecnico di Milano

Research Activity

April 2009 – present : Director of the *Istituto di Chimica del Riconoscimento Molecolare (ICRM), Consiglio nazionale delle Ricerche (CNR), Milano*

January 2002 – March 2009: Dirigente di Ricerca (CNR Research director), *ICRM-CNR, Milano*

May 1995 – December 2001: Primo Ricercatore (CNR Senior research scientist), *ICRM-CNR, Milano*

April 1984 – May 1995: Ricercatore C.N.R. (Research scientist), *ICRM-CNR, Milano*

January 1983 - April 1984: Post graduate voluntary fellow, Dipartimento di Chimica Organica ed Industriale, Università degli Studi di Milano, Milano

Postdoctoral stage :

October 1986 - October 1987 : Department of Applied Biological Sciences, M.I.T. , Cambridge (U.S.A.)
Tutor: Prof. Alexander M. Klibanov

Awards :

1993: Medaglia “*G. Ciamician*”, Divisione di Chimica Organica, Società Chimica Italiana

Research Interests :

- Enzymes in organic synthesis (exploitation of dehydrogenases, laccases, monooxygenases, amino transferases, glycosyltransferases, glycosidases, lipases, proteases, epoxyhydrolases, oxynitrilases, aldolases)
- Enzymatic catalysis in organic solvents
- Molecular recognition processes

Academic activity (last 10 years):

2013 National scientific abilitation, “**Professore di Prima Fascia**”
Settore concorsuale 03/C1: Chimica Organica
Web-address (MIUR, 11/12/2013) : <https://abilitazione.cineca.it/ministero.php/public/elencodomande/settore/03%252FC1/fascia/1>

2012 – present: Professore a Contratto, Università di Modena e Reggio Emilia.
Teaching “Industrial biotransformations”
Laurea Magistrale in Industrial Biotechnology.

2008 – 2017: Professore a Contratto: Università degli Studi di Milano
“Use of enzymes in organic synthesis”, course “Bioorganic chemistry”
Corso di Laurea Triennale in Chemistry

2007 – 2012: Professore a Contratto, Università di Modena e Reggio Emilia.
Teaching “Biocatalysis”, Corso di Laurea Triennale in Biotechnology

Lectures at:

2003 – present: Master in “Progettazione e sviluppo di farmaci”, Università di Pavia
2011 – 2017: Master Degree Course of “Industrial Pharmaceutical Chemistry”, Faculdade de Farmacia, Universidade de Coimbra, Coimbra (Portogallo)
2013, 2017: Doctorate in “Scienze Chimiche”, Università di Milano

Scientific Activity

International coordination appointments (last 10 years)

2005 – present: Italian representative in the Scientific Committee of the European Section on Applied Biocatalysis (ESAB) of the European Federation of Biotechnology (EFB).
2013 – 2017: Italian representative in the Management Committee of the COST Action **CM1303**: “Systems Biocatalysis”, European Community
2008 – 2012: Chairman of the Management Committee of the COST Action **CM0701**: “*Cascade chemoenzymatic processes – new synergies between chemistry and biochemistry*”, European Community

Project coordinator in Bilateral programs sponsored by various Italian or International Institutions (last 10 years)

2016–present “*Biomimetic enzymatic synthesis of polyphenolic bio-active molecules*”
Progetto di Cooperazione CNR – AVCR (Repubblica Ceca), Czech coordinator: Dr. Vladimír KREN (Institute of Microbiology, Prague)
2013 – 2015: “*Enzymatic synthesis of new hybrid antioxidants based on polyphenols and vitamins*”,
Progetto di Cooperazione CNR – AVCR (Repubblica Ceca), Czech coordinator: Dr. Vladimír KREN (Institute of Microbiology, Prague)
2008 – 2010: “*Laccases: versatile & efficient biocatalysts for the synthesis of new chemical products*”,
Ministry of Foreign Affairs, Protocollo di cooperazione scientifica Italia – Sud Africa, South African coordinator: Prof. Stephanie BURTON (University of Cape Town, Cape Town)
2007 – 2009: “*Enzymatic synthesis of glutathione*”, Ministry of Foreign Affairs, Protocollo di cooperazione scientifica Italia – Quebec; Canadian coordinator: Prof. Joelle PELLETIER (University of Montreal, Montreal)

Member of Learned Societies

- * Societa' Chimica Italiana
- * American Chemical Society
- * European Federation of Biotechnology

Member of the Editorial Board of the scientific journals:

- Biocatalys
- Journal of Molecular Catalysis
- Trends in Biotechnology

Member of national Committees

- 2016 – present Membro del Consiglio Direttivo
Sezione Lombardia, Società Chimica Italiana
- 2015 – present Membro del Consiglio Direttivo
Lombardy Green Chemistry Association (cluster regionale lombardo di Chimica Verde)
- 2015 – present Membro del Consiglio Scientifico
Fondazione Lombardia per l'Ambiente
- 2015 – present Membro del Comitato di Indirizzo della Laurea Magistrale in Biotecnologie Industriali
Università di Modena e Reggio Emilia
- 2013 – present Membro del Comitato Scientifico e Tecnologico
Consorzio Italbiotec

Publications and Scientific Communications :

- 171 papers in international peer reviewed journals
16 reviews in international peer reviewed journals
2 book
13 book chapters
10 contributions to proceedings books of international Conferences
14 patents
48 lectures in international conferences (41 as invited speaker)
23 lectures in local conferences (16 as invited speaker)
37 conferences in Universities and Companies
4 dissemination lectures to high school students and cultural circles (as invited speaker),
188 poster communications in international and local conferences

• *Recent publications in peer reviewed journals (last five years: 2013-2017)*

- 171 I. Bassanini, E.E. Ferrandi, M. Vanoni, G. Ottolina, S. RIVA, M. Crotti, E. Brenna, D. Monti (2017)
"Peroxygenase-catalyzed enantioselective sulfoxidations"
Eur. J. Org. Chem., 7186-7189
- 170 I. Bassanini, J. Krejzová, W. Panzeri, D. Monti, V. Kren, S. RIVA* (2017)
"A sustainable one-pot, two-enzyme synthesis of naturally occurring arylalkyl glucosides"
ChemSusChem, **10**: 2040-2045
- 169 E.E. Ferrandi, A. Previdi, I. Bassanini, S. RIVA, Xu Peng, D. Monti (2017)
"Novel thermostable amine transferases from hot spring metagenomes"
Appl. Microbiol. Biotechnol., **101**: 4963-4979

- 168 E. Vavrikova, V. Kren, L. Jezova-Kalachova, M. Biler, B. Chantemargue, M. Pyszkova, **S. RIVA**, M. Kuzma, K. Valentova, J. Ulrichova, J. Vrba, P. Trouillas, J. Vacek (2017)
“Novel Flavonolignan hybrid antioxidants: From enzymatic preparation to molecular rationalization”
Eur. J. Med. Chem., **127**: 263-274
- 167 G. Fumagalli, M.S. Christodoulou, B. Riva, I. Revuelta, C. Marucci, V. Collico, D. Prospero, **S. RIVA**, D. Perdicchia, I. Bassanini, A. Garcia-Argaez, L. Dalla Via, D. Passarella(2017)
“Self-assembled 4-(1,2-diphenylbut-1-en-1-yl) aniline based nanoparticles: podophyllotoxin and aloin as building blocks”
Org. Biomol. Chem. , **15**: 1106-1109
- 166 I. Bassanini, P. Gavezzotti, D. Monti, J. Kreizova, V. Kren, **S. RIVA*** (2016)
“Laccase-catalyzed dimerization of glycosylated lignols”
J. Mol. Catal. B-Enzymatic, **134**, 295-301
- 165 C. Palumbo, E.E. Ferrandi, C. Marchesi, D. Monti, **S. RIVA**, R. Psaro, M. Guidotti (2016)
“One-pot selective dihydroxylation of limonene combining metal and enzyme catalysis”
Chemistry Select, **1**: 1795-1798
- 164 S. Savino, E.E. Ferrandi, F. Forneris, S. Rovida, **S. RIVA**, D. Monti, A. Mattevi (2016)
“Structural and biochemical insights into 7b-hydroxysteroid dehydrogenase stereoselectivity”
Proteins, **84**: 859-865
- 163 S. Ficarra, E. Tellone, D. Pirolli, A. Russo, D. Barreca, A. Galtieri, B. Giardina, P. Gavezzotti, **S. RIVA**, M.C. De Rosa (2016)
“Insights into the properties of the two enantiomers of trans-d-viniferin, a resveratrol derivative: antioxidant activity, biochemical and molecular modeling studies of its interactions with hemoglobin”
Mol. BioSyst., **12**: 1276-1286
- 162 V.V. Kollerov, T.G. Lobastova, D. Monti, N.O. Deshcherevskaya, E.E. Ferrandi, G. Fronza, **S. RIVA**, M.V. Donova (2016)
“Deoxycholic acid transformations catalyzed by selected filamentous fungi”
Steroids, **107**: 20-29
- 161 E.E. Ferrandi, C. Marchesi, C. Annovazzi, **S. RIVA**, D. Monti, R. Wohlgemuth (2015)
“Efficient epoxide hydrolase catalyzed resolutions of (+)-and (-)-cis/trans-limonene oxides”
ChemCatChem, **7**: 3171-3178
- 160 D. Monti, M.C. Forchin, M. Crotti, F. Parmeggiani, F.G. Gatti, E. Brenna, **S. RIVA*** (2015)
“Cascade coupling of ene-reductases and omega-transaminases for the stereoselective synthesis of diastereomerically enriched amines”
ChemCatChem, **7**: 3106-3109
- 159 S. Gandolfi, L. Pistone, G. Ottolina, P. Xu, **S. RIVA** (2015)
“Hemp hurds biorefining: A path to green L-(+)-lactic acid production”
Bioresource Technol., **191**: 56-65
- 158 P. Gavezzotti, F. Bertacchi, G. Fronza, V. Křen, D. Monti, **S. RIVA*** (2015)
“Laccase-catalyzed dimerization of piceid, a resveratrol glucoside, and its further enzymatic elaboration”
Adv. Synth. Catal., **357**: 1831-1839
- 157 E. Vavřicová, P. Gavezzotti, K. Purchartová, K. Fuksová, D. Biedermann, M. Kuzma, **S. RIVA**, V. Křen (2015)
“Regioselective alcoholysis of silychristin acetates catalyzed by lipases”
Int. J. Mol. Sci., **16**: 11983-11995

- 156 E. Beneventi, S. Conte, M.R. Cramarossa, **S. RIVA**, L. Forti (2015)
“Chemo-enzymatic synthesis of new resveratrol-related dimers containing the benzo[b] furan framework and evaluation of their radical scavenger activities”
Tetrahedron, 71: 3052-3058
- 155 P. Gavezzotti, E. Vavrikova, K. Pelantova, G. Fronza, T. Kudanga, M. Kuzma, **S. RIVA**, D. Biedermann, V. Kren (2014)
“Enzymatic oxidative dimerization of sylimarin flavolignans”
J. Mol. Catal. B-Enzymatic, **109**, 24-30
- 154 S. Gandolfi, G. Ottolina, R. Consonni, **S. RIVA**, I. Patel (2014)
“Fractionation of hemp hurds by organosolv pretreatment and its effect on production of lignin and sugars”
ChemSusChem, 7, 1991-1999
- 153 S. Caufin, C. Navarra, **S. RIVA*** B. Danieli (2014)
“Enzymatic acylation as an efficient tool for an easy access to specific acyl derivatives of the natural antioxidants verbascoside, teupolioside and echinacoside”
J. Mol. Catal. B-Enzymatic, **104**, 42-47
- 152 **S. RIVA*** (2013)
“1983-2013: the long wave of biocatalysis”
Trends Biotechnol., **31**, 120-121
- 151 S. Gandolfi, G. Ottolina, **S. RIVA**, G. Pedrocchi-Fantoni, I. Patel (2013)
“Complete chemical analysis of Carmagnola hemp hurds and structural features of its components”
Bioresources, **8**, 2641-2656
- 150 V.V. Kollerov, D. Monti, N.O. Deshcherevskaya, T.G. Lobastova, E.E. Ferrandi, A. Larovere, S.A. Gulevskaya, **S. RIVA**, M.V. Donova (2013)
“Hydroxylation of lithocholic acid by selected actinobacteria and filamentous fungi”
Steroids **78**, 370-378
- 149 J. Krejzova, P. Simon, E. Vavrikova, K. Slamova, H. Pelantova, **S. RIVA**, V. Spiwok, V. Kren (2013)
“Enzymatic synthesis of new C-6-acylated derivatives of NAG-thiazoline and evaluation of their inhibitor activities towards fungal beta-N-acetylhexosaminidase”
J. Mol. Catal. B-Enzymatic, **87**, 128-134
- **Recent reviews (last five years: 2013-2017)**
- 16 I. Bassanini, K. Hult, **S. RIVA*** (2015)
Dicarboxylic esters: useful tools for the biocatalyzed synthesis of hybrid compounds and polymers
Beilstein J. Org. Chem., **11**, 1583-1595.
- **Recent books (last five years: 2013-2017)**
- 2 **S. RIVA**, W.-D. Fessner Eds. (2014).
Cascade Biocatalysis
Wiley-VCH Verlag GmbH, Weinheim, Germany
- **Recent books chapters (last five years: 2013-2017)**
- 13 E.E. Ferrandi, D. Monti, **S. RIVA** (2014)
“New trends in the *in situ* enzymatic recycling of NAD(P)(H) cofactors”
in *Cascade Biocatalysis*, pages 23-42
S. Riva, W.-D- Fessner Eds. Wiley – VCH Verlag & Co, Germany, ISBN 978-3-527-32522-0