



Temi di ricerca:

a. Sviluppo di agenti neuroprotettivi

- Disegno e sintesi di modulatori dei recettori metabotropici del glutammato
- Disegno e sintesi di nuovi inibitori della PARP
- Disegno e sintesi di nuovi inibitori degli enzimi TNKS (tanchirasi)
- Disegno e sintesi di nuovi inibitori di enzimi coinvolti nel catabolismo del triptofano

b. Caratterizzazione della vie di trasduzione genomiche e non genomiche di acidi biliari

- Disegno e sintesi di modulatori del recettore nucleare FXR e DAF-12
- Disegno e sintesi di modulatori del recettore di membrana TGR5
- Sintesi, caratterizzazione ed analisi di composti a struttura steroidea

c. Nuove reazioni sintetiche per mezzo di composti diazocarbonilici

d. Sviluppo di metodi cromatografici di analisi

- Nuovi selettori chirali nella cromatografia a scambio di ligandi
- Sviluppo di nuove fasi stazionarie chirali
- Indici cromatografici derivati nella valutazione del bilancio idrofilico/idrofobico degli acidi biliari

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Publicazioni (2009-2013)

1. B. Natalini, R. Sardella, E. Camaioni, A. Macchiarulo, A. Gioiello, G. Carbone, R. Pellicciari, "Derived chromatographic indices as effective tools to study the self-aggregation process of bile acids" *J. Pharm. Biomed. Anal.* **2009**, *50*, 613-621.
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9. B. Natalini, N. Giacchè, R. Sardella, F. Ianni, A. Macchiarulo, R. Pellicciari, "Computational studies for the elucidation of the enantiomer elution order of amino acids in Chiral Ligand-Exchange Chromatography" *J. Chromatogr. A* **2010**, 1217, 7523-7527.
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12. B. Natalini, R. Sardella, A. Gioiello, E. Rosatelli, F. Ianni, E. Camaioni, R. Pellicciari, "Fast chromatographic determination of the bile salt critical micellar concentration" *Anal. Bioanal. Chem.* **2011**, 401, 267-274.
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30. P. Sabbatini, P. Filipponi, R. Sardella, B. Natalini, R. Nuti, A. Macchiarulo, R. Pellicciari, A. Gioiello, "Synthesis and Quantitative Structure-Property Relationships of Hyodeoxycholic Acid Derivatives", *Molecules* **2013**, *18*, 10497-10513.

Comunicazioni (2009-2013)

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3. N. Giacchè, R. Sardella, A. Macchiarulo, M. Dawgul, B. Natalini, R. Pellicciari, "A new computational model to predict the elution order in the Chiral Ligand-Exchange Chromatography (CLEC) of amino acids", XXIII Congresso Nazionale della SCI, Sorrento (NA), 177 (2009).
4. B. Natalini, R. Sardella, A. Macchiarulo, M. Marinozzi, N. Giacchè, R. Pellicciari, "Molecular Modelling Studies in the Chiral Ligand-Exchange Chromatography of Amino Acids". XIII Int. Meeting on Recent Developments in Pharmaceutical Analysis, Milan, Italy, 60 (2009).
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11. B. Natalini, R. Sardella, N. Giacchè, F. Ianni, A. Macchiarulo, R. Pellicciari, "Computational studies on ligand-exchange systems operating with chiral additives". XXIX Convegno Interregionale Toscana-Umbria-Marche-Abruzzo, Ancona, OR10 (2010).
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14. B. Natalini, F. Ianni, R. Sardella, F. Venturoni, A. Gioiello, R. Pellicciari, "HPLC/ELSD analysis of conjugated bile acids: a way to assist flow chemistry processes". XXIV Congresso Nazionale della SCI, Lecce, 450 (2011).
15. F. Venturoni, A. Gioiello, R. Sardella, B. Natalini, R. Pellicciari, "Development of an Efficient Continuous Flow Synthesis of Glyco- and Tauro-Conjugated Natural and Semi-Synthetic Bile Acids". XXIV Congresso Nazionale della SCI, Lecce, 464 (2011).
16. B. Natalini, R. Sardella, A. Gioiello, E. Rosatelli, F. Ianni, E. Camaioni, R. Pellicciari, "Fast chromatographic determination of the unconjugated bile salt critical micellar concentration". 14th Int. Meeting RDPA 2011, Pavia, OC20 (2011).
17. B. Natalini, R. Sardella, F. Ianni, M. E. García-Rubiño, A. Conejo-García, M. C. Núñez, J. M. Campos, "Chromatographic enantioresolution of six 2- and 6-substituted (*R,S*)-9-(2,3-dihydro-1,4-benzoxathiin-2- or -3-ylmethyl)-9*H*-purines endowed with anti-human breast cancer activity". 14th Int. Meeting RDPA 2011, Pavia, P084 (2011).
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20. R. Sardella, F. Ianni, A. Lisanti, B. Natalini, "Ruolo della fase mobile nell'enantioseparazione con fasi stazionarie chirali a base polisaccaridica". XXXI TUMA 2012, Francavilla a Mare (CH) (2012).

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22. A. Gioiello, R. Sardella, E. Rosatelli, B. Natalini, R. Pellicciari, "Novel stereoselective synthesis and chromatographic evaluation of guggulsterones, the bioactive constituents of the hypolipidemic guggulipid". 21st National Meeting on Medicinal Chemistry, Palermo, 131 (2012).
23. A. Gioiello, P. Sabbatini, A. Ogawa, R. Sardella, D. Passeri, B. Natalini, G. Robertson, A. Macchiarulo, R. Sommer, R. Pellicciari, "Unraveling the molecular basis for DAF-12 activation: diastereoselective synthesis and SAR studies of dafachronic acid derivatives". ISMC 2012, Berlino (Germany), 89 (2012).
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26. P. Sabbatini, P. Filippini, R. Sardella, B. Natalini, R. Nuti, A. Macchiarulo, R. Pellicciari, A. Gioiello, "Side chain modified HDCA derivatives: synthesis, CMC determination and molecular modelling studies". XXII National Meeting on Medicinal Chemistry, Roma, 111 (2013).
27. G. Marcelli, A. Carotti, B. Natalini, M. Marinozzi, "Environmentally friendly, sequential, one-pot synthesis of N-aryl-5-aminopyrazoles from anilines" 13° SAYCS, Riccione (RM), 51 (2013)

Attività Didattica (2013-2014)

Chimica Farmaceutica e Toss. I per la Laurea Magistrale in Farmacia