

PERSONAL INFORMATION **Marco Franceschin**

WORK EXPERIENCE

- June 2011- Present **Quality assessor (Dirigente Chimico)**
Agenzia Italiana del Farmaco (AIFA) (Italy)
Evaluation of quality aspects of API and finished product manufacturing, both for chemical and biological medicinal products, within national and mutual recognition procedures.
- September 2019- Present **alternate member for Italy in the Coordination Group for Mutual Recognition and Decentralised Procedures - Human (CMDh)**
Agenzia Italiana del Farmaco (AIFA) (Italy)
- September 2013- Present **Italian representative in the Variation Regulation Working Party of the CMDh**
AIFA (Italy)
- November 2014-November 2018 **Professor of Organic Chemistry**
University of Rome Sapienza (Italy)
teaching (temporary position)
- November 2004-April 2011 **Post-doc fellow**
University of Rome Sapienza Department of Chemistry (Italy)
research in the field of anticancer drugs: organic synthesis, characterization of the synthesized compounds by NMR, IR, UV-vis spectroscopy and mass spectrometry, study of DNA/ligand interactions by means of gel electrophoresis, spectroscopic techniques, molecular modeling simulations and mass spectrometry; activity of research team-leader and teaching for the courses of Organic Chemistry, Biochemistry and Medicinal Chemistry.
- January 2004-June 2004 **Visiting scientist from the University of Rome**
Cancer Research UK Biomolecular Structure Group (The School of Pharmacy, University of London) (United Kingdom)
research in the field of anticancer drugs
- January 2008-June 2008 **Teacher**
Provincia di Latina (Education) (Italy)
Teaching of the course Natural compounds of pharmaceutical interest within Master in Innovation in the chemical-pharmaceutical Industry
- October 2001-June 2002 **Higher school teacher**
Istituto Tecnico Industriale Statale Einstein - Roma (Italy)
Teaching of Chemistry and lab.

EDUCATION AND TRAINING

- April 2013-April 2013 **Training Course attendance**
BioUpdate Foundation (Sweden)
Training Course Heparins and Low Molecular Weight Heparins (Stockholm, 22/04/2013-23/04/2013)
- October 2011-October 2011 **Training Workshop attendance**
European Medicines Agency (EMA) (United Kingdom)
Junior Quality Assessors (grade 1 entry or effective level) Training Workshop (London, 03/10/2011-04/10/2011)
- September 2011-September 2011 **Training Course attendance**
Agenzia Italiana del Farmaco (AIFA) (Italy)

	Training on the EDQM & Certification procedure (Rome, 15/09/2011)
March 2010-June 2011	traineeship Agenzia Italiana del Farmaco (AIFA) (Italy) training in regulatory affairs and evaluation of quality aspects of API and finished product manufacturing
March 2010-May 2010	Course attendance University of Rome Sapienza (Italy) Attendance of the course of Medicinal Chemistry within Master in Organic Natural Compounds
October 2004-May 2006	Certification to teach Chemistry in the higher school SSIS-Lazio (Italy)
July 2002-July 2002	Training Course attendance European Science Foundation (ESF) (Italy) training course on Molecular Interactions: New Frontiers for Computational Methods (20/07/2002-25/07/2002)
November 2001-October 2004	PhD degree in Chemistry University of Rome Sapienza (Italy) Thesis title: Polycyclic aromatic compounds able to induce and stabilize G-quadruplex DNA structures as new telomerase inhibitors: synthesis, physicochemical properties and biochemical studies (24/02/2005)
2001- 2001	professional certification as a Chemist University of Rome Sapienza (Italy)
October 1996-July 2001	Degree in Chemistry University of Rome 'Sapienza' (Italy) 110/110 cum laude

ADDITIONAL INFORMATION

Expertise The university research work in the field of anticancer drugs included organic synthesis, characterization of the synthesized compounds by NMR, IR, UV-vis spectroscopy and mass spectrometry, and the study of DNA/ligand interactions by means of gel electrophoresis, spectroscopic techniques, molecular modeling simulations and mass spectrometry. Moreover, he has been qualified as associate professor of Organic Chemistry and Medicinal Chemistry.

Since June 2011, Dr. Franceschin has been a quality assessor at the Italian Medicines Agency (Medicinal Products Authorization Dept.), where he evaluates the quality aspects of API and finished product manufacturing, both for chemical and biological medicinal products, within national and mutual recognition procedures. He has been also involved in university teaching activities and in the revision of scientific guidelines. In particular, he has dealt with specific quality issues related to the so called "atypical APIs" and specific biological APIs such as heparins. Since June 2019 he has been coordinating the group of quality assessors for the Post Approval Procedure Office.

He attended the 64th Quality Working Party (QWP) at the European Medicines Agency, on behalf of the Italian member (September 2012). Currently, he is the alternate member for Italy in the Coordination Group for Mutual Recognition and Decentralised Procedures - Human (since August 2019) and the Italian representative in the Variation Regulation Working Party of the CMDh (since 2013).

Publications PUBLICATIONS
(only INTERNATIONAL journals)

- 1) Rossetti L., Franceschin M., Bianco A., Ortaggi G., Savino M. "Perylene diimides with different side chains are selective in inducing different G-quadruplex DNA structures and in inhibiting telomerase" *Bioorg. Med. Chem. Lett.* 2002, 12, 2527-2533.
- 2) Franceschin M., Alvino A., Ortaggi G., Bianco A. "New hydrosoluble perylene and coronene derivatives" *Tetrahedron Lett.* 2004, 45, 9015-9020.
- 3) Rossetti L., Franceschin M., Schirripa S., Bianco A., Ortaggi G., Savino M. "Selective interactions of perylene derivatives having different side chains with inter- and intramolecular G-quadruplex structures. A correlation with telomerase inhibition" *Bioorg. Med. Chem. Lett.* 2005, 15, 413-420.

- 4) Franceschin M., Rossetti L., D'Ambrosio A., Schirripa S., Bianco A., Ortaggi G., Savino M., Schultes C., Neidle S. "Natural and synthetic G-quadruplex interactive berberine derivatives" *Bioorg. Med. Chem. Lett.* 2006, 16, 1707-1711.
- 5) Franceschin M., Alvino A., Casagrande V., Mauriello C., Pascucci E., Savino M., Ortaggi G., Bianco A. "Specific interactions with intra- and intermolecular G-quadruplex DNA structures by hydrosoluble coronene derivatives: a new class of telomerase inhibitors" *Bioorg. Med. Chem.* 2007, 15, 1848-1858.
- 6) Franceschin M., Pascucci E., Alvino A., D'Ambrosio D., Bianco A., Ortaggi G., Savino M. "New highly hydrosoluble and not self-aggregated perylene derivatives with three and four polar side chains as G-quadruplex telomere targeting agents and telomerase inhibitors" *Bioorg. Med. Chem. Lett.* 2007, 17, 2515-2522.
- 7) Franceschin M., Frasca S., Alvino A., Bianco A. "New synthesis of 3-aryl isoquinolines by Pd-catalyzed Suzuki cross-coupling" *Lett. Org. Chem.* 2007, 4, 86-91.
- 8) Alvino A., Franceschin M., Cefaro C., Borioni S., Ortaggi G., Bianco A. "Synthesis and spectroscopic properties of highly water-soluble perylene derivatives" *Tetrahedron* 2007, 63, 7858-7865.
- 9) Franceschin M., Lombardo C.M., Pascucci E., D'Ambrosio D., Micheli E., Bianco A., Ortaggi G., Savino M. "The number and distances of positive charges of polyamine side chains in a series of perylene diimides significantly influence their ability to induce G-quadruplex structures and inhibit human telomerase" *Bioorg. Med. Chem.* 2008, 16, 2292-2304.
- 10) Casagrande V., Alvino A., Bianco A., Ortaggi G., Franceschin M. "Study of binding affinity and selectivity of perylene and coronene derivatives towards duplex and quadruplex DNA by ESI-MS" *J. Mass Spectrom.* 2009, 44, 530-540.
- 11) Franceschin M. "G-quadruplex DNA structures and organic chemistry: more than one connection" *Eur. J. Org. Chem.* 2009, 2225-2238.
- 12) Micheli E., Lombardo C.M., D'Ambrosio D., Franceschin M., Neidle S., Savino M. "Selective G-quadruplex ligands: the significant role of side chain charge density in a series of perylene derivatives" *Bioorg. Med. Chem. Lett.* 2009, 19, 3903-3908.
- 13) Ginnari-Satriani L., Casagrande V., Bianco A., Ortaggi G., Franceschin M. "A hydrophilic three side-chained triazatruxene as a new strong and selective G-quadruplex ligand" *Org. Biomol. Chem.* 2009, 7, 2513-2516.
- 14) Micheli E., D'Ambrosio D., Franceschin M., Savino M. "Water soluble cationic perylene derivatives as possible telomerase inhibitors: the search for selective G-quadruplex targeting" *Mini-Rev. Med. Chem.* 2009, 9, 1622-32.
- 15) Franceschin M., Bianco A., Savino M. "G-Quadruplex Ligands: A Selective Approach to Telomeres Length Regulation, Both Directly and Through Telomerase Inhibition" *Int. J. Med. Biol. Front.* 2009, 15, 319-335.
- 16) Franceschin M., Ginnari-Satriani L., Alvino A., Ortaggi G., Bianco A. "Study of a convenient method for the preparation of hydrosoluble fluorescent triazatruxene derivatives" *Eur. J. Org. Chem.* 2010, 134-141.
- 17) Casagrande V., Salvati E., Alvino A., Bianco A., Ciammaichella A., D'Angelo C., Ginnari-Satriani L., Serrilli A.M., Iachettini S., Leonetti C., Neidle S., Ortaggi G., Porru M., Rizzo A., Franceschin M., Biroccio A. "N-cyclic bay-substituted perylene G-quadruplex ligands have selective antiproliferative effects on cancer cells and induce telomere damage" *J. Med. Chem.* 2011, 54, 1140-56.
- 18) Biroccio A., Porru M., Rizzo A., Salvati E., D'Angelo C., Orlandi A., Passeri D., Franceschin M., Stevens M., Gilson E., Beretta G.L., Zupi G., Pisano C., Zunino F., Leonetti C. "DNA damage persistence as determinant of tumor sensitivity to the combination of Topo I inhibitors and telomere-targeting agents" *Clin. Cancer Res.* 2011, 17, 2227-2236.
- 19) Cummaro A., Fottichia I., Franceschin M., Giancola C., Petraccone L. "Binding properties of human telomeric quadruplex multimers: A new route for drug design" *Biochimie* 2011, 93, 1392-1400.
- 20) Franceschin M., Borbone N., Oliviero G., Casagrande V., Scuto M., Coppola T., Borioni S., Mayol L., Ortaggi G., Bianco A., Amato J., Varra M. "Synthesis of a dibromoperylene phosphoramidite building block and its incorporation at 5' end of G-quadruplex forming oligonucleotide. Spectroscopic properties and structural studies of resulting dibromoperylene-conjugate" *Bioconjug. Chem.* 2011, 22, 1309-1319.
- 21) Ginnari-Satriani L., Casagrande V., Alvino A., Altieri A., Murat P., Defrancq E., Lombardo C.M., Neidle S., Bianco A., Ortaggi G., Franceschin M. "Chemical and biophysical studies of a series of

- triazatruxene based G-quadruplex ligands" *International Review of Biophysical Chemistry (I.RE.BI.C.)*, 2011, 2, 135-141.
- 22) Micheli E., Martufi M., Galati A., Franceschin M., De Santis P., Savino M., Cacchione S. "G-quadruplex superstructure in the hTERT core promoter: stabilization by monomer self-stacking" *International Review of Biophysical Chemistry (I.RE.BI.C.)*, 2011, 2, 153-155.
- 23) D'Ambrosio D., Reichenbach P., Micheli E., Alvino A., Franceschin M., Savino M., Lingner J. "Specific binding of telomeric G-quadruplexes by hydrosoluble perylene derivatives inhibits repeat addition processivity of human telomerase" *Biochimie* 2012, 94, 854-863.
- 24) Franceschin M., Rizzo A., Casagrande V., Salvati E., Alvino A., Altieri A., Ciammaichella A., Iachettini S., Leonetti C., Ortaggi G., Porru M., Bianco A., Biroccio A. "Aromatic Core Extension in the Series of N-Cyclic Bay-Substituted Perylene G-Quadruplex Ligands: Increased Telomere Damage, Antitumor Activity, and Strong Selectivity for Neoplastic over Healthy Cells" *ChemMedChem* 2012, 7, 2144 - 2154.
- 25) Altieri A., Franceschin M., Nocioni D., Alvino A., Casagrande V., Scarpati M.L., Bianco A. "Total synthesis of taspine and a symmetrical analogue: study of binding to G-quadruplex DNA by ESI-MS" *Eur. J. Org. Chem.* 2013, 191-196.
- 26) Franceschin M., Bombelli C., Borioni S., Bozzuto G., Eleuteri S., Mancini G., Molinari A., Bianco A. "A new perylene bisimide bola amphiphile: synthesis, characterization, fluorescent properties and applications as a potential probe" *New J. Chem.* 2013, 37, 2166-2173.
- 27) Altieri A., Alvino A., Ohnmacht S., Ortaggi G., Neidle S., Nocioni D., Franceschin M., Bianco A. "Xanthene and Xanthone Derivatives as G-Quadruplex Stabilizing Ligands" *Molecules* 2013, 18, 13446-13470.
- 28) Franceschin M., Nocioni D., Biroccio A., Micheli E., Cacchione S., Cingolani C., Venditti A., Zizza P., Bianco A., Altieri A. "Design and synthesis of a new dimeric xanthone derivative: enhancement of G-quadruplex selectivity and telomere damage" *Org. Biomol. Chem.* 2014, 12, 9572-9582.
- 29) Porru M., Artuso S., Salvati E., Bianco A., Franceschin M., Diodoro M.G., Passeri D., Orlandi A., Savorani F., D'Incalci M., Biroccio A., Leonetti C. "Targeting G-quadruplex DNA structures by Emicoron has a strong antitumor efficacy against advanced models of human colon cancer" *Mol. Cancer Ther.* 2015, 14, 2541-2551.
- 30) Micheli E., Altieri A., Cianni L., Cingolani C., Iachettini S., Bianco A., Leonetti C., Cacchione S., Biroccio A., Franceschin M., Rizzo A. "Perylene and coronene derivatives binding to G-rich promoter oncogene sequences efficiently reduce their expression in cancer cells" *Biochimie* 2016, 125, 223-231.
- 31) Porru M., Zizza P., Franceschin M., Leonetti C., Biroccio A. "EMICORON: A multi-targeting G4 ligand with a promising preclinical profile" *Biochim. Biophys. Acta* 2017, 1861, 1362-1370.
- 32) Franceschin M., Cianni L., Pitorri M., Micheli E., Cacchione S., Frezza C., Serafini M., Hu M.H., Su H., Huang Z., Gu L., Bianco A. "Natural Aromatic Compounds as Scaffolds to Develop Selective G-Quadruplex Ligands: From Previously Reported Berberine Derivatives to New Palmatine Analogues" *Molecules* 2018, 23, E1423; doi:10.3390/molecules23061423
- 33) Frezza C., Venditti A., Sciubba F., Tomai P., Antonetti M., Franceschin M., Di Cocco M.E., Gentili A., Delfini M., Serafini M., Bianco A. "Phytochemical profile of *Euphorbia peplus* L. collected in Central Italy and NMR semi-quantitative analysis of the diterpenoid fraction" *J. Pharm. Biomed. Anal.* 2018, 160, 152-159.
- 34) Pitorri M., Franceschin M., Serafini I., Ciccola A., Frezza C., Bianco A. "New Developments in the Synthesis of EMICORON" *High Throughput* 2018, 7, E22; doi: 10.3390/ht7030022
- 35) Venditti A., Frezza C., Vincenti F., Brodella A., Sciubba F., Montesano C., Franceschin M., Sergi M., Foddai S., Di Cocco M.E., Curini R., Delfini M., Bianco A., Serafini M. "A syn-ent-labdadiene derivative with a rare spiro-lactone function from the male cones of *Wollemia nobilis*" *Phytochemistry* 2019, 158, 91-95.
- 36) Frezza C., Venditti A., Toniolo C., De Vita D, Serafini I, Ciccola A, Franceschin M, Ventrone A, Tomassini L, Foddai S, Guiso M, Nicoletti M, Bianco A, Serafini M "Pedicularis L. Genus: Systematics, Botany, Phytochemistry, Chemotaxonomy, Ethnopharmacology, and Other" *Plants* 2019, 8, 306; doi:10.3390/plants8090306
- 37) Frezza C., Venditti A., Toniolo C., De Vita D, Franceschin M, Ventrone A, Tomassini L, Foddai S, Guiso M, Nicoletti M, Serafini M, Bianco A "Nor-Lignans: Occurrence in Plants and Biological Activities - A Review" *Molecules* 2020, 25, 197; doi: 10.3390/molecules25010197
- 38) Frezza C., Venditti A., De Vita D, Toniolo C, Franceschin M, Ventrone A, Tomassini L, Foddai S, Guiso M, Nicoletti M, Bianco A, Serafini M "Phytochemistry, Chemotaxonomy, and Biological

Activities of the Araucariaceae Family - A Review" *Plants* 2020, 9, 888; doi:10.3390/plants9070888
39) Frezza C, Venditti A, De Vita D, Sciubba F, Tomai P, Franceschin M, Di Cecco M, Ciaschetti G, Di Sotto A, Stringaro A, Colone M, Gentili A, Serafini M, Bianco A "Phytochemical Analysis and Biological Activities of the Ethanolic Extract of *Daphne sericea* Vahl Flowering Aerial Parts Collected in Central Italy" *Biomolecules* 2021, 11(3), 379; doi.org/10.3390/biom11030379

BOOK CHAPTERS:

- 1) Franceschin M., Bianco A., Savino M. "G-quadruplex interactive telomerase inhibitors: an exciting field to be explored, with some open challenges on the biological evaluation" in "Medicinal Chemistry Research Progress" edited by Nova Science Publishers Inc. (NY, USA), 2008, 119-136.
- 2) Franceschin M., Bianco A., Savino M. "G-Quadruplex Ligands: A Selective Approach to Telomeres Length Regulation, Both Directly and Through Telomerase Inhibition" in "Ligands, Polymers and Amino Acids" edited by Nova Science Publishers Inc. (NY, USA), 2011, 1-17.

Projects

National patents:

- 1) IT 1379093 - 30 August 2010: Bianco A., Franceschin M., Alvino A., Ortaggi G., Savino M. "Derivati coronenici idrosolubili attivi come inibitori della telomerasi umana mediante induzione di strutture G-quadruplex e loro uso come agenti antitumorali" - Universita Degli Studi Di Roma "La Sapienza" (deposit RM2007A000209 - 12 April 2007, not renewed)
- 2) IT 1415337 - 16 April 2015: Ortaggi G., Bianco A., Franceschin M., Biroccio A., Casagrande V. "Impiego degli emicoroneni come induttori selettivi di danno al DNA telomerico" - Universita Degli Studi Di Roma "La Sapienza" / Istituti Fisioterapici Ospitalieri (deposit RM2012A000486 - 12 October 2012, not renewed)

International patent applications:

- 1) Bianco A., Franceschin M., Alvino A., Ortaggi G., Savino M. "Preparation of water-soluble coronene derivatives which inhibit human telomerase via induction of G-quadruplex structures and their use as anticancer agents" - Universita Degli Studi Di Roma "La Sapienza" (PCT/IT2008/000238 - 11 April 2008, International extension of IT 1379093 - not renewed)
- 2) Ortaggi G., Bianco A., Franceschin M., Biroccio A., Casagrande V. "Use of emicoronens as selective inducers of damage to the telomere DNA" - Universita Degli Studi Di Roma "La Sapienza" / Istituti Fisioterapici Ospitalieri (PCT/IT2013/000281 - 11 October 2013, International extension of IT 1415337 - not renewed)

Memberships

Dr Franceschin has been involved in the activities of the Italian Chemical Society (since 2001), where he was a member of the Directive Committees of the Division of Chemistry for Life Sciences and of the Younger Members Chemists Group (until 2011). He was also admitted as an Associate Member of the Royal Society of Chemistry in 2005.

Other Relevant Information

Dr Franceschin has been corresponding author for 13 of his international publications. He has been also a reviewer for the journals *Chemistry - A European Journal*, *European Journal of Organic Chemistry*, *Journal of Physical Chemistry*, *Dyes and Pigments*, *Natural Product Research*, *Bioorganic & Medicinal Chemistry*, *Biochemical Pharmacology*, *Mini Reviews in Medicinal Chemistry*, *Journal of the American Society for Mass Spectrometry*, *Journal of Nucleic Acids*, *Medicinal Research Reviews*, *Journal of Medicinal Chemistry e Angewandte Chemie*.

LANGUAGES:

MOTHER TONGUE - Italian

OTHER LANGUAGES - English

Reading skills: C1 - advanced (EUROPEAN LEVELS - SELF ASSESSMENT GRID)

Writing skills: C1 - advanced (EUROPEAN LEVELS - SELF ASSESSMENT GRID)

Verbal skills: B2 - intermediate (EUROPEAN LEVELS - SELF ASSESSMENT GRID)