CV Prof. Maria Paola Costi

Education
1989: PhD in Medicinal Chemistry, University of Milan-Modena-Trieste, Italy.
1985: degree in Pharmacy, University of Modena,
1984: degree in Chemistry and Pharmaceutical Science, University of Modena, Modena, Italy,

Brief Chronology of Employment

- 2013- Full Professor in Medicinal Chemistry (CHIM08), Department of Life Science, University of Modena, Modena, Italy.
- 2000-2012. Associate Professor in Medicinal Chemistry, Faculty of Bioscience and Biotechnology, University of Modena and Reggio Emilia, Italy.
- 1998 Associate professor in Medicinal Chemistry.
- 1993-1999 Permanent Researcher position, faculty of Pharmacy, Department of Pharmaceutical Science, University of Modena, Modena, Italy.
- 1992-1993. Visiting scientist. Department of Pharmaceutical Science, Prof. P.G. Baraldi. University of Ferrara, Ferrara, Italy.
- 1991: Visiting fellow, Department of Biochemistry and Biophysics, Directed by Prof. D.V.Santi. University of California San Francisco, US. Back in the same lab as Visiting scientist in 1994, 1996, 1998, 1999.1990.
- 1990 Research position at the Faculty of Pharmacy, University of Modena.

Teaching activity.
2019- 2020: Pharmaceutical Chemistry and Toxicology 2, Pharmacy, UniMORE.
2017/2018- 2018/2019 : Radiopharmaceuticals, Course of Pharmacy, University of Modena and Reggio Emilia, Italy.
2015-2020: Pharmaceutical Biotechnology, Course of Chemistry and Pharmaceutical Technology (CTF), University of Modena and Reggio Emilia, Italy.
2014 - 2020: Pharmaceutical Chemistry and Toxicology 2, Course of Chemistry and Pharmaceutical technology (CTF), University of Modena and Reggio Emilia, Italy.
2014-2020: Biotechnology drugs 2, Course of Chemistry and Pharmaceutical technology (CTF), University of Modena and Reggio Emilia, Italy.
2004 - 2014: Faculty of Biotechnology and Biology, teaching courses held: Biotechnology drugs, Medicinal chemistry and Advanced methodologies in Drug Discovery, Laboratory of biotechnological drugs, protein purification. Analytical chemistry methodologies of biotechnological drugs, Drug targets identification approaches.
1990 - 2004: Faculty of Pharmacy teaching courses held: Analytical Chemistry, Quantitative analysis of pharmaceuticals, Qualitative analysis of Pharmaceuticals, Library design in drug discovery , New methodologies in Drug Discovery.
Faculty of Pharmacy (1990-1998) Analytical Chemistry, Quantitative analysis of pharmaceuticals, Qualitative analysis of Pharmaceuticals, Medicinal chemistry, Drug Design.
School of Doctorate in Health Science teaching topics related to System biology approaches to drug discovery, Chemical space sorting, Medicinal chemistry in parasitology. (1998-2013).
President of the International Committee of the PhD in Parasitology (Granada, 2006), University (Cape Town University, Punjab), University of Ferrara (2013), University of Pamplona (2017). University of Milan (2017).
PhD students tutoring (28 students).
Thesis degree students: 105 from the CTF, Biotechnology and Biology courses.

Research Activities
The most of my work is focused on drug discovery and development of anticancer and antinfective agents. The discovered compounds are directed to the FOLATE PATHWAYS in different organisms (human, parasites, bacetria and mycobacteria). More recently I become involved in translational research in drug discovery in ovarian cancer (OC) and colorectal cancer (CRC). Evolving projects are on YAP/TAZ-TEAD complexes modulation and TRAP1/HSP90 inhibition in the field of anticancer drug discovery.
My research activity is performed in collaboration with Senior Scientists from UNIMORE (G.Ponterini, Stefania Ferrari, L.Costantino, G.Marverti, Domenico D'Arca, Lorena Losi) and more recently with Alberto Venturelli. We have built an integrated lab with expertise in synthetic chemistry, biophysical chemistry, cellular biology and molecular biology and Mass Spectrometry. International collaborations reported in particular related to the European projects listed in other sections.

I am currently actively working in three main research projects on the identification and synthesis of leads in the following areas:
1. Thymidylate synthase enzymes structure, function, inhibition and associated pathways.
2. Folate related enzymes involved in parasitic diseases including the enzyme Pteridine reductase 1 (PTR1, DHFR and DHCH).
3. Translational research in medicinal chemistry in which we perform proteomic studies. We participate to clinical trials within the MITO (Multicentro Italiano per il Tumore dell'Ovaio) network, the EUTROC network and in collaboration with Dr. Ugo de Giorgi oncology department IRCSS, Meldola, (FO)). The proteomic studies are performed in collaboration with Prof.Fulvio Magni (University of Milan, Bicocca).
4. YAP/TAZ-TEAD complexes modulation and TRAP1/HSP90 inhibition in the field of anticancer drug discovery.
5. Beta-Lactamase structure, function and inhibition.

Academic/Scientific advisors roles

- 2020 Member of the board of directors of the Biotechnology Group of the Italian Chemical Society (SCI) (http://www.soc.chim.it/it/gruppi/biotecnologie/direttivo)
- 2020-member of Commissione monitoraggio Degree course in Pharmacy.
- 2019- today. National working group on reviewing the Medicinal Chemistry courses. (SCI-Italian Chemical Society Medicinal Chemistry Division)
- 2014- Member of the Council of Comitato di indirizzo for the course in Chemistry and pharmaceutical technology.
- 2012- Member of the Council of the School of Doctorate in Clinical and Experimental Medicine at Unimore.
- 2004-2012 UNIMORE working group on Biotechnology faculty organization and monitoring.

National and International Role covered

1990 - today. PI of the Laboratory of Drug Discovery and Biotechnology at the Department of Life Science at University of Modena (UNIMORE). http://personale.unimore.it/rubrica/dettaglio/costimp**2019-2019-2021** Representative member for UNIMORE at the Paul Erlich MedChem, Euro PhD Network. http://www.Prlichmedchem.eu

2019 - today. Member of European Science Foundation (ESF) College of Expert Reviewers (www.esf.org).

2015-2018. PI of AIRC (Associazione Italiana per la Ricerca sul Cancro) (Italian Association for Cancer Research) project IG 16977 "Protein-protein interaction inhibitors of thymidylate synthase against colorectal cancer".

2014-2017. Coordinator of the FP7 European Commission project "New medicine for Trypanosomatidae infections, NMTrypI" collaborative project within INNOVATION 1 topic.

2013-2015. Scientific responsible of the FP7 project "Optobacteria" from the Capacity FP7 program. Grant agreement n°286998. www.optobacteria.org

2002, 2004, 2006, 2009, 2012. Research Unit PI, Italian Project on Anti-cancer and anti-parasitic drug discovery focused on the Medicinal chemistry drug discovery of anti-cancers and anti-parasitic agents, Modena unit, (MIUR-COFIN project).

2012-2015. President of the Regional PhD program named NOVAMOLSTAM. Project topic: Discovery of new tools to control stem cells growth and differentiations and for anti-cancer drug discovery applications.

2014-2018. European COST ACTION CM1307 on Targeted chemotherapy towards diseases caused by endoparasites. Role: Management committee representative for Italy Action and Vice Chair WG1 leader for Medicinal Chemistry.

2008-2012. Participation to the European COST ACTION CM801. Drug development for parasitic diseases. Role: Management committee representative for Italy.

2004-2007. Participation to the European COST ACTION B22 - Drug development for parasitic diseases. Role: Management committee substitute for Italy.

2010 – today. Member of Translational research sectiion, MITO association (Multicentro italiano per il tumore ovarico) (Ovarian cancer Italian Multicenter). www.mito.it

2009-today Co-Founder and scientific board member of the European network for translational research in ovarian cancer **(EUTROC**). From 2009. Legal entity founded on 2011.
2010-2014. PI of the AIRC IG 10474 project "Targeting drug resistance in ovarian cancer". Subject: Target ovarian cancer cells that overexpress Folate receptor alfa.
2006-2009. Coordinator of the FP6- European Commission STREP project "LIGHTS" (Ligands to Interfere with humanThymidylate synthase, www.lights-eu.org). Grant agreement n°037852. www.lights-eu.org.
2003-2006. Coordinator of the FIRB project on the Discovery of new anti-Trypanosmatidic drugs.

Others

- Faculty of 1000 nomination: f1000prime » article recommendations » "2-carboxyquinoxalines kill mycobacterium tuberculosis through noncovalent inhibition of dpre1. J et al. ACS Chem Biol. 2014.
- ITTS, Mumbai India, award for the best researcher in Medicinal Chemistry in 2014.
- X-ray crystal structure published in JACS 2005 (codice 1XGJ) received the highest number of downloding in the year from PDB Overall (2007-08 : 2008-11). 134.000 downlods.
- 2006 Tydock-Pharma co-founder.
- Technological Innovation Carpi (Modena), (July 2005) and Modena StarCup (October 2005) award for Tydock.
- 2006. Listed in the PNI selected project (Premio Nazionale Innovazione, National Prize for Innovation, Padova, Dicembre 2005 http://www.premioinnovazione.it/)
- President of the European Doctorate Committee in Granada, Institute Lopez Neyra, Sptember 2004.
- European School of Medicinal Chemistry, best poster prize (Urbino, Luglio 2004).
- Spinner award for regional competition in technological transfer Emilia Romagna, 2004.
- 2003 Prize MIPTEC- Basel Award for the best poster, March 2003 " Developing New Beta-Lactamase inhibitors trough structure-based design and pharmacokinetic properties improvement"
- Member of the American Chemical Society ACS); Member of the Italian Chemical Society (SCI).
- 18 patents, 2 of them transferred to pharma companies. 8 granted.

Responsibilities in projects in collaboration with TYDOCK PHARMA.
2011-2015 Italian unit of the large collaborative 7FP project .(FP7,**MM4TB**,HEALTH.2010.2.3.2-1) (GA260872) "More Medicine for Tubercolosis (MM4TB)". Role: scientific responsible.
2012-2013 Progetto Distretti 2 in collaboration with Tydockpharma, Gemib, ReSense. Dai ditretti produttivi ai distretti tecnologici. Distretto n.5 Farmaceutica e Biotecnologie. Identificazione di nuovi Biomarker in Oncologia.
2009-2011 Scientific leader - International project coordinator SMART per SME EUROTRANSBIO 3rd call. "Specie specificity management in resistant infectious diseases targeting Thymidylate synthase."

Important citations of published papers:
1.Research highlights di Nature drug discovery volume 7 april 2008. Regarding the paper PNAS 2008-Costi on Pteridine reductase inhibitors discovery.
2. Research Highlights 2011
3.SciBiX Pteridine reductase (PTR1); dihydrofolate reductase (DHFR) Science-Business eXchange 1, (21 February 2008) doi:10.1038/scibx.2008.90 Distillery: Therapeutics. SciBX: Science-Business eXchange. EISSN: 1945-3477.
4.SciBiX Pteridine reductase (PTR1); dihydrofolate reductase (DHFR) Science-Business eXchange 4, (13 January 2011) doi:10.1038/scibx.2011.47 Distillery: Therapeutics. SciBX: Science-Business eXchange.
5.2011. AIRC-DROC citation in occasion of Bilancio 2011, for the paper Cardinale D, Guaitoli G, Tondi D, Luciani R, Henrich S, Salo-Ahen OM, Ferrari S, Marverti G, Guerrieri D, Ligabue A, Frassineti C, Pozzi C, Mangani S, Fessas D, Guerrini R, Ponterini G, Wade RC, Costi MP. Protein-protein interface-binding peptides inhibit the cancer therapy target human thymidylate synthase. Proc Natl Acad Sci U S A. 2011 Aug 23;108(34):E542-9.
6. 2012. AIRC-DROC citation in occasion of Bilancio 2012, for the paper Carosati E, Tochowicz A, Marverti G, Guaitoli G, Benedetti P, Ferrari S, Stroud RM, Finer-Moore J, Luciani R, Farina D, Cruciani G, Costi MP. Inhibitor of ovarian cancer cells growth by virtual screening: a new thiazole derivative targeting human thymidylate synthase. J Med Chem. 2012 Nov 26;55(22):10272-6.
7.Faculty of 1000 nomination: **f1000prime** » **article recommendations** » "2-carboxyquinoxalines kill mycobacterium tuberculosis through noncovalent inhibition of dpre. Neres j, Hartkoorn Rc, Chiarelli lr,

gadupudi r, pasca mr, mori g, venturelli a, savina s, makarov v, kolly gs, molteni e, binda c, dharn, Ferrari s, brodin p, delorme v, landry v, de jesus lopes ribeiro al, farina d, saxena p, pojer f, carta a, luciani r, porta a, zanoni g, de rossi e, costi mp*, riccardi g*, cole st*. ACS Chem Biol. 2014.
8.2017. Project NMTrypI. News in brief. European Commission news. http://cordis.europa.eu/project/rcn/109924_en.html

Publications: Over 160 publications, more than 230 communications at congresses and 50 invited speakers.

Other activities

1. Gordon Research Conference attendance. “”High Throughput Chemistry and Chemical Biology. Advances in Chemistry and Chemical Biology to Expand the Druggable Proteome”. June 2-7, 2019, Colby-Sawyer College.
2. Invited speaker at the Folate Receptor Society meeting Taormina. Dimer distrupters of Thymidylate synthase through folate receptors targeting. 1-4 October 2018. Proceedings in” Frigerio, B., Bizzoni, C., Jansen, G. et al. Folate receptors and transporters: biological role and diagnostic/therapeutic targets in cancer and other diseases. J Exp Clin Cancer Res38, 125 (2019). https://doi.org/10.1186/s13046-019-1123-1
3. Invited speaker **YAP/TAZ and TEAD: At the Crossroads of Cancer II, 2018.** *YAP-TEAD complex inhibitors discovery and development to interfere with ovarian and colon cancer cell growth” Telluirde* Center for Research and Analysis of Vascular Tumors, CRAVAT Foundation. 25-30 June 2018.
4. Invited speaker **YAP/TAZ and TEAD: At the Crossroads of Cancer II, 2017.** *YAP-TEAD complex inhibitors discovery and drug repourposing.” Telluirde* Center for Research and Analysis of Vascular Tumors, CRAVAT Foundation. 30/7-4/08 2017.
5. Guest editor of the special issue on the conference “Drug resistance in Ovarian Cancer" (www.ovariancancer.unimore.it) 19-29 February, 2009. Gynecologic Oncology.
6. Proceeding publication from meeting in Basel 2006, COST B22 action. Pirrole-amidine oligopeptide–DNA interaction studies through Isothermal Titration Calorimetry. A. Venturelli, G. Guaitoli, L. Cancian, P. Lombardi, M Costi*.
7. Proceeding of the COST B22 Expert meeting on Drug Evaluation Basel November 2006. Pubblicazione proceeding 2007, pag.38.
8. Conference Medicinal chemistry in parasitology: new avenues in drug discovery, Modena 19-20 February, 2007, published on a special issue on ChemMedChem, Wiley, Volume 3/2008. I have been the Guest Editor, organizer of the issue.
9. Commentary on the Proceeding. Costi MP, Taramelli D, González-Pacanowska D. Opening Opportunities for New Drugs Against Neglected Diseases. ChemMedChem. 2008 Mar 14;3(3):371-373.
10. Proceeding. Joint meeting of Medicinal Chemistry Swiss-Italy, Modena 19-20 February 2005. Published on ARKIVOC Volume 2006. Part (viii): Special Issue 'Plenary and Invited Lectures of joint Italian-Swiss Medicinal Chemistry Meeting', Maria Paola Costi, Girolamo Cirrincione, p1-141.
11. Special issue on Current Drug Target. Volume 3, No. 4, 2002 Drug Resistance. Developing Targets and Strategies in Drug Resistance. Guest Editor: Maria Paola Costi. p.281-349.
12. Proceeding of the 2nd IC2AR Conference on Antibiotic resistance. O 03C - Multiligand approach to the identification of resistant strains overexpressing beta-lactamase. Maria Paola Costi, Matteo Santucci, Francesca Spyrakis, Simon Cross, Davide Farina, Donatella Tondi, Antonio Quotadamo, Jean-Denis Docquier, Filomena Croce, Ana Isabel Prieto, Claudia Ibacache, Jesús Blázquez, Alberto Venturelli, Gabriele Cruciani. pag.217-218. Organization of the Book of Abstracts: Ana Laço, José Luis Capelo, Carlos Lodeiro ISBN: 978-989-99639-3-1. Printed by Proteomass (Portugal) Printage Caparica, Portugal, 2017.
13. Co-Authro in over 80 X-ray crystal structures deposited in PDB.

Editorials

1.COSTI M. (2005). *Drugs Against Protozoan Parasites: Target Selection, Structural Biology and Medicinal Chemistry*, Copper Mountain, CO, USA, 9-13 April 2005. Di - THOMSON SCIENTIFIC LTD IDDB INVESTIGATIONAL DATABASEHTTPWWW.IDDB.COMIDDB. (vol. 3 May 2005). On line Journal. : Thompson scientific (UNITED KINGDOM).
2. Collaboration to Encyclopedia compilation *Encyclopedia of Cancer, http://www.springerreference.com on the Chapter “Drug resistance to platinum drugs in Ovarian Cancer”.*

3. *Hits and leads for human African trypanosomiasis*. DRUG TARGET REVIEW | Winter 2017, Issue 04. (Hit-to-Lead In-Depth Focus (pages 38-41)), Sheraz Gul, Giulia Pasini, MPCosti.

Book Chapters

1. Hits and Lead discovery in the identification of new drugs against the trypanosomatidic infections. Theodora Calogeropoulou, George E. Magoulas, Ina Pöhner, Joanna Panecka-Hofman, Pasquale Linciano, Stefania Ferrari, Nuno Santarem, M Dolores Jiménez-Antón, Ana Isabel Olías-Molero, José María Alunda, Anabela Cordeiro da Silva, Rebecca C. Wade and **Maria Paola Costi** * "MEDICINAL CHEMISTRY OF NEGLECTED TROPICAL DISEASES. Advances in the design and synthesis of antimicrobial agents" to be published by CRC Press, Taylor & Francis Group. 2019.
2. Scaffolds and biological targets avenue to fight against drug resistance in leishmaniasis. Chiara Borsari, Antonio Quotadamo, Stefania Ferrari, A. Venturelli, Anabela Cordeiro, Nuno Santarem, **Maria Paola Costi**. Annual Review in Medicinal Chemistry. Volume 51. DOI: 10.1016/bs.armc.2018.08.002
3. Series Editor for *VITAMINS & HORMONES* (Academic press/Elsevier), VH Volume 107: AID 146) entitled ***OVARIAN CYCLE***. Chapter entitled "HUMAN THYMIDYLATE SYNTHASE INHIBITORS halting OVARIAN CANCER CELL GROWTH. **M.P.Costi** et al. 2018;107:473-513. doi: 10.1016/bs.vh.2017.12.002.
4. Costi Maria Paola, Pellati Federica, Ferrari Stefania (2013). Protein-protein interaction inhibitors: case studies on Small Molecules and Natural Compounds. In: **Maria Paola Costi**, Stefania Ferrari Federica Pellati. Disruption of Protein-Protein Interfaces. p. 31-60, Berlin Heidelberg:Stefano Mangani, ISBN: 9783642379987.
5. Trypanosomatid Diseases. A molecular route to drug discovery. Edited by Timo Jäger, Oliver Koch, Drug Discovery in Infectious Diseases. Volume 4 Series Editor Paul M. Selzer. Wiley-Blackwell 2013. Medicinal chemistry approaches targeting the trypanosmatidic enzymes Pteridine reductase and Dhydrofolate reductase. In Press. ISBN 978-3-527-33255-7. Stefania Ferrari, Valeria Losasso, Puneet Saxena, **Maria Paola Costi**.
6. Enhancing the drug discovery process by integration of structure-based drug design and combinatorial synthesis. In: ARUP K. GHOSE, VELLARKAD N. VISWANADHAN. Combinatorial Library Design and Evaluation Principles, Software, Tools, and Applications in Drug Discovery. D.Tondi, **Costi M.P.(**2001). ISBN: 0-8247-0487-8. NEW YORK CITY: Marcel Dekker, Inc. (UNITED STATES).

External reviewer

a) Grant award peer reviewer Expert evaluator of the European Commission for the V, VI, VII framework research program (5FP, 6FP, 7FP, Horizon2020). Expert reviewer for National projects. MAP (Minister for Productive Activity), MIUR. Peer Reviewer some international organizations such as CNRS, Polish academy, French agency ANR, Polish National Research grant agencies, FRG21-UAE.
b) peer reviewer for scientific journals: Nature, Regional editor of some Bentham, Journal of Medicinal Chemistry, Journal of Medicinal Chemistry, Biochimica Biophisica Acta, European Journal of Medicinal Chemistry, Bioorganic & Medicinal Chemistry, Biochemistry, Parasitology, Journal of Molecular recognition, Chemistry and Biology, Bioinformatics, Journal of Molecular Biology and other Journals.

Editorial board membership: ACS Medicinal Chemistry Letters, Current Medicinal Chemistry, Mini Review in Medicinal Chemistry and Arkivoc.

Meetings organisation

1. May 22, 2002 "Beta-Lactamase Meeting", Dipartimento di Chimica-Dip.Scienze Farmaceutiche, 2. November 25, 2002 "Meeting on infectious diseases". Istituto de Parasitologia Lopez Neyra. In collaboration with Prof.Gamarro, Granada. 3.January 23, 2004 "Medicinal Chemistry in Parasitology", Dipartimento di Scienze Farmaceutiche. 4.Swiss-Italian meeting on Medicinal Chemistry, September 2005. 5.February 20, 2007 "Medicinal Chemistry in Parasitology", Dipartimento di Scienze Farmaceutiche. 6. Drug Resistance in Ovarian Cancer: biomarkers and treatments. MODENA 19-20/2/2009. 7.COST CM0801 on Drug development in parasitic diseases, annual meeting organization, October 2011. 8.COST CM0801 on Drug development in neglected diseases, Training school on assay development in medicinal chemistry, December 2011. 9. June 2016. SYNERGY MEETING OF FP7-HEALTH-2013-2.2.4-2 held in Modena http://cdm.unimo.it/home/dipfarm/costi.mariapaola/NPDs_Synergy-meeting_2016_home.html

Technological transfer actions

a) Activities in preparation to spin-off foundation
Spinner award for regional competition in the ambit of technological transfer, Emilia Romagna, 2004. -

Innovative enterprise Carpi, award for Tydock, July 2005. -Innovative enterprise Modena, StarCup Modena e Reggio Emilia award for Tydock, October 2005. -Listed in the PNI selected project (Premio Nazionale Innovazione, National Prize for Innovation, Padova, December 2005 http://www.premioinnovazione.it/). This work led to the funding of the spin-off Tydock Pharma srl, a biotech research based on drug and tools discovery and development for technological applications.
b) July 2006-Foundation of the TYDOCK PHARMA srl spin-off. Website www.tydockpharma.com.
Role: scientific expert

c) PATENTS

1. NUOVE MOLECOLE AD AZIONE ANTIPARASSITARIA. Italian patent. NUMERO 1020170000 28966, March 16, 2017. **Granted.**
2. Costantino Luca, Costi Maria Paola, Ponterini Glauco, Gaetano Marverti, Franchini Silvia, Tondi Donatella, D'Arca Domenico, Ferrari Stefania, Luciani Rosaria, Venturelli Alberto, Sammak Susan, Lauriola Angela, Gozzi Gaia. (2015). ANTICANCER DRUGS. 102015000088249, Università di Modena e Reggio Emilia. **Granted.**
3. Costi Maria Paola, Marverti Gaetano, Cardinale Daniela, Venturelli Alberto, Ferrari Stefania, Ponterini Glauco (2014). Peptides binding to the dimer interface of thymidylate synthase for the treatment of cancer-US8916679 "B2 - Granted patent as second publication". US8916679, UNIMORE and HITS (Heidelberg) (DE). **Granted.**
4. Costi Maria Paola, Stefania Ferrari, Puneet Saxena, Alberto Venturelli, Davide Farina, Luciani Rosaria, Gadupudi Ramakrishna (2014). QUINOXALINE DERIVATIVES AS ANTITUBERCULOSIS AGENTS. MI2014A001983, TYDOCK PHARMA S.R.L. Strada Gherbella 294/B 41126 MODENA MO and ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE (EPFL) EPFL-TTO EPFL Innovation Park J 1015 LAUSANNE Svizzera. **Granted**
5. COSTI Maria Paola - COSTANTINO Luca, SAMMAK Susan - PONTERINI Glauco - FERRARI Stefania - LUCIANI Rosaria, FARINA Davide Salvatore Francesco , FRANCHINI Silvia - SANTUCCI Matteo, CRUCIANI Gabriele - CAROSATI Emanuele - NUOVE MOLECOLE, PER USO COME AGENTI ANTITUMORALI, 22 gennaio 2013 al n. MI2013A000085**. Granted**
6. Costi MP, Wade R, Henrich S, D, Montejenues, Ferrari S, Venturelli A, Lazzari S, Guerrieri D., Nerini E., 2010 USO DI INIBITORI DELLA PTERIDINA REDUTTASI PER LA PREVENZIONE E/O IL TRATTAMENTO DI INFEZIONI PARASSITARIE, Titolare: UNIMORE, HITS-EML, N°brevetto: MI2010A002191. **Granted.**
7. Stefano Mangani, Cecilia Pozzi, Stefania Ferrari, Maria Paola Costi, 2009 STRUTTURA DEL CRISTALLO DEL COMPLESSO DI TIMIDILATO SINTETASI (TS) CON UN LIGANDO, Titolare: UNIMORE and UNISI, N° brevetto: MI2009A002117,
8. M.P.Costi, G.Ponterini, G.Marverti, D.Cardinale, A.Venturelli, S.Ferrari, 2009 PEPTIDES BINDING TO THE DIMER INTERFACE OF THYMIDYLATE SYNTHASE FOR THE TREATMENT OF CANCER, Titolare: UNIMORE, Italy; European Media Laboratory, Germany, N° brevetto: PCT/IB2009/055439. **Granted.**
9. M. P. COSTI; G.PAGLIETTI, 2008 SPECIFIC INHIBITORS OF PTERIDINE REDUCTASE WITH ANTIPARASITIC ACTION, Titolare: TYDOCK PHARMA s.r.l., N° brevetto:WO/2009/080367. **Granted.**
10. F.GENOVESE; S. FERRARI; M. P. COSTI; G. PONTERINI, 2008 METODO PER LA FUNZIONLIZZAZIONE SITO SPECIFICA DI MOLECOLE PROTEICHE. Titolare: UNIVERSITA DI MODENA E REGGIO EMILIA, N° brevetto: MI2008A001493.
11. SHOICHET; BRIAN K.; COSTI; MARIA PAOLA; D. TONDI, 2000 PHENYLBORONIC ACID DERIVATIVE INHIBITORS OF BETA-LACTAMASES, THEIR PREPARATION, PHARMACEUTICAL COMPOSITIONS, AND THERAPEUTIC USE., Titolare: Northwestern University, N° brevetto: PIXXD2 WO 0035904 A1 20000622. **Granted**
12. SHOICHET BRIAN K.; COSTI MARIA PAOLA; D. TONDI, 2000 3-AMINOPHENYLBORONIC ACID DERIVATIVE INHIBITORS OF BETA-LACTAMASES, THEIR PREPARATION, AND THEIR THERAPEUTIC USE. Titolare: Northwestern University, N° brevetto: PIXXD2 WO 0035905 A1 20000622.**Granted.**
13. SHOICHET; B.K.; TONDI; D.; M. COSTI; M.P., 1999 SULFONAMIDE BORONIC ACID INHIBITORS OF AMPC B-LACTAMASE TO REVERSE BACTERIAL RESISTANCE TO B-LACTAM ANTIBIOTICS. Titolare: Ely Lilly, Indianapolis, N° brevetto: 60/112,448-WO/2000/035904.**Granted.**
14. SHOICHET; B.K.; TONDI; D.; M. COSTI; M.P., 1999 AMIDE BORONIC ACID INHIBITORS OF AMPC B-LACTAMASE TO REVERSE BACTERIAL RESISTANCE TO B-LACTAM ANTIBIOTICS. Titolare: Ely Lilly, Indianapolis, N° brevetto: 60/112,450-WO/2000/035905. **Granted.**
15. MICHAEL KHUN; PEER BORK; M. COSTI; ROSARIA LUCIANI, 2008 APREPITANT AS

ANTICANCER DRUG, Titolare: EMBL-UNIMORE, N° brevetto: 61/043,299.

16. COSTI MARIA PAOLA; T. ROSSI; CASOLARI CHIARA; TONDI DONATELLA; BARLOCCO DANIELA; PECORARI PIERGIORGIO; VENTURELLI ALBERTO, NAPHTHOFURANONE DERIVATIVES AS SPECIFIC INHIBITORS OF THYMIDYLATE SYNTHASES.TydockpharmaApr, 8 2009: EP2044047. **Granted.**
17. Venturelli Alberto, Costi Maria Paola, Pecorari Piergiorgio, Rossi Tiziana, Casolari Chiara, Tondi Donatella, Barlocco Daniela: NAPHTHOFURANONE DERIVATIVES AS SPECIFIC INHIBITORS OF THYMIDYLATE SYNTHASES. Tydockpharma. Jan, 10 2008: WO 2008/003510.

Projects granted

1. 1996 MURST, Progetto per giovani ricercatori. Università di Modena.“Function and inhibition of Thymidylate synthase: Synthesis of non classical inhibitors as potential antitumor agents”.
2. 1998 Contract Ely-Lilli- Northwestern University, Chicago-University of Modena, Responsabile del progetto: “Discovery of new inhibitors of beta-lactamases “.
3. 1999 MURST (XVIII Executive Program of the Cultural Agreement between Italy and Spain for the period 1998-2001).
4. 1999-2001 Contract Ely-Lilli Northwestern University, Chicago-University of Modena “Novel Inhibitors of AmpC beta-Lactamase.
5. 2000-2001 Azioni integrate Italia-Spagna (University of Modena) and Spain (Institute Lopez Neyra) “Discovery of new drugs against cellular resistance in Kinetoplastidae parasite”.
6. 2001-2005 FIRB; progetto autnomo “Drug resistance: Design and synthesis trough combinatorial strategy of inhibitors of Pteridine Reductase and Folate enzyme dependent in Tripanosoma cruzi”, (Project number RBAU01S38Z).
7. PRIN 2002 -2004. PI Unimore. New thymidylate synthase inhibitors: antitumoral improvement and apoptotic processes studies” (Project number 2002033121_002).
8. 2001-2005 NIH (National Institute of health, USA) sub-contractor of Northwester University of Chicago, Prof B. Shoichet (now UCSF, USA). 200.000 euro.
9. 2005-2009 NIH (National Institute of health, USA) sub-contractor of University of California San Francisco, San Francisco, USA,(Project number NIH GM63815 grant sub-contract number 3402 sc). Co-PI.
10. PRIN 2004-2006 PI Unimore. New thymidylate synthase inhibitors: antitumoral improvement and apoptotic processes studies”, (Project number 2004030405_004).
11. Finanziamento regionale Spinner per progetti di impresa Tydock 2004-2005. Unimore expert.
12. Finanziamento regionale Spinner per progetti di trasferimento tecnologico. 2005-2006. Unimore expert.
13. WHO 2005-2006. Optimization and development of antifolates as antileishmania and antitrypanosome agents. (Project number A50599). This project is developed in collaboration with WHO for biological evaluation.
14. PRIN 2006-2008. PI Unimore. New thymidylate synthase inhibitors: antitumoral improvement and apoptotic processes studies”, (project number 2006030430_004).
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19. PRIN 2009-2011. PI Unimore. Progettazione e sviluppo di nuovi lead diretti al pathway dei folati, attivi verso le parassitosi da Tripanosomatidae. Progetto n° 200925BPZ5_004.
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21. 2010-2014 NIH (National Institute of health, USA) sub-contractor of University of California San Francisco, San Francisco, USA. (Project number NIH GM63815 grant sub-contract number 3402

sc). 100.000 euros

22. 2009-2010 Progetto di ricerca internazionale "Kinetodrugs.Disegno di inibitori del pathway dei folati per lo sviluppo di candidati farmaci antiparassitari verso Leishmaniasi e Triapnosomiasi." Fondazione Cassa di Risparmio di Modena (FRCMO). 60.000
23. 2010-2013 Project AIRC (Associazione italiana per la ricerca sul cancro) on "Targeting drug resistance in ovarian cancer". IG 10474. 660.000 euros
24. 2013-2015 Coordination of the regional PhD project NOVAMOLSTAM. Discovery of small molecule tools for rigenerative medicine and cancer targeting the Hyppo pathway.
25. 2012-2014. Unimore PI. Optobacteria, FP7 project, Capacity program, Research for SME, Project ID, 286998, Call, FP7-SME-2011. MP Costi Scientfiic Manager and PI of the Unimore partner. www.optobacteria.eu. 407.000 euros
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27. 2014-2017 New Medicine for Trypanosomatidic infections-NMTrypI- *FP7-HEALTH-2013-2.2.4-2: Drug development for neglected parasitic diseases,* grant agreement no 603240. Coordinator MP Costi. http://fp7-nmtrypi.eu.
28. 2015-2018 Project AIRC (Associazione italiana per la ricerca sul cancro) on "Protein-protein interaction inhibitors of thymidylate synthase against colorectal cancer" IG 16977. 465000 euros
29. 2017-2019. Oncologia di Precisione e Nuove Terapie Antitumorali (ONCOPENTA). Alta formazione e Ricerca. Dottorati di ricerca. Sviluppo di inibitori dell'interazione proteina-proteina contro la farmacoresistenza nei sarcomi e carcinomi. http://formazionelavoro.regione.emilia-romagna.it/alta-formazione-ricerca/approfondimenti/dottorati-di-ricerca/economia-digitale/oncologia-di-precisione-e-nuove-terapie-antitumorali. (PhD student granted).
30. 2019-2020 Collaborative activities in the project concerning Drug Resistant mechanisms in Leishmania. Omics approach to study the modulation of host cells after Leishmania infection: involvement in drug susceptibility. (LeishModCel). Ministerio de Ciencia, Innovación y Universidades. Spain. Project Ref. RTI2018-097210-B-100
31. 2019-2020 Translational proteomic study, MITO group, MITO16 clinical trial.

Honours

- *Faculty of 1000 nomination:* ***f1000prime*** *»* ***article recommendations*** *» "2-carboxyquinoxalines kill mycobacterium tuberculosis through noncovalent inhibition of dpre. Neres j, Hartkoorn Rc, chiarelli lr, gadupudi r, pasca mr, mori g, venturelli a, savina s, makarov v, kolly gs, molteni e, binda c, dhar n, ferrari s, brodin p, delorme v, landry v, de jesus lopes ribeiro al, farina d, saxena p, pojer f, carta a, luciani r, porta a, zanoni g, de rossi e, costi mp*, riccardi g*, cole st*. ACS Chem Biol. 2014.*
- *ITTS, Mumbai India, award for the best researches in 2014*
- *2003 Prize MIPTEC- Basel Award for the best poster, March 2003 " Developing New Beta-Lactamase inhibitors trough structure-based design and pharmacokinetic properties improvement"*
- *European School of Medicinal Chemistry, best poster prize (Urbino, Luglio 2004).*
- *Spinner award for regional competition nell'ambito del trasferimento tecnologico, Emilia Romagna, 2004.*
- *Innovazione tecnologica, idee imprenditoriali innovative Carpi (Modena), award for Tydock, July 2005.*
- *Innovazione tecnologica, idee imprenditoriali innovative, Modena, StarCup Modena e Reggio Emilia award for Tydock, October 2005.*
- *2006. Listed in the PNI selected project (Premio Nazionale Innovazione, National Prize for Innovation, Padova, Dicembre 2005 http://www.premioinnovazione.it/)*
- *President of the European Doctorate Committee in Granada, Institute Lopez Neyra, Sptember 2004.*
- *Member of the American Chemical Society ACS).*
- *Member of the Italian Chemical Society (SCI).*
- *X-ray crystal structure published in JACS 2005 (codice 1XGJ) received the highest number of downloding in the year from PDB Overall (2007-08 : 2008-11). 134.000 downlods. http://www.wwpdb.org/top10.ph*
- *80 X-ray crystal structures publications co-Authored in the protein data bank (PDB, www.pdb.org).*