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學院/Faculty : 藥學院/School of Pharmacy

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教學科目：藥理學研究方法；科技文獻檢索與寫作；臨床藥理學；生物化學與分子生物學等。
Teaching activity: Medicinal chemistry and laboratory; Basic Chemistry and laboratory;
Fundamental chemistry for Pharmaceutics and laboratory; analytical chemistry laboratory.

研究方向：抗感染疾病；寄生蟲病；有機化學；抗癌和抗炎藥物的開發；天然化合物，MOA，材料化學
Research interest: Anti-infectious disease; parasitic disease; organic chemistry; anticancer and anti-inflammatory drug development; natural compounds, MOA, Material Chemistry.

研究課題/Research project:

FDCT 0087/2020/A 臭氧類似物克服耐藥性的研究及作用機制研究 “Investigation of ozonide analogs for overcoming drug resistance and study of mechanism of action” august 2020–august 2021– Principal Investigator

FDCT 0096/2020/A, 新型 1,2,3-三唑基抗瘧衍生物的合成及其對新型冠狀病毒肺炎 (NCP, Covid-19) 的潛在活性 “Synthesis of novel 1,2,3-triazole based antimalarial derivatives for their potential activity against Novel Coronavirus Pneumonia (NCP, Covid-19)” september 2020–January 2022 – Principal Investigator

FRG-2022/A celastrol 衍生物作為類風濕關節炎潛在藥物的合成、計算研究和生物評價
“ Synthesis, computational studies and bioevaluation of celastrol derivatives as potential agents against Rheumatoids arthritis” may 2022– may 2023 – Principal Investigator

學歷/Education

2008 藥物化學 PhD Chemistry of Drugs, University of Milan, Milan, Italy

2005 化學和製藥技術 MSc in Chemistry and Pharmaceutical Technology, University of Milan, Italy

工作經驗/Work experience

2022 Assistant Professor at School of Pharmacy Macau University of Science and Technology, Macau Courses: Basic Chemistry BAPZ003 / Pharmaceutical Chemistry BAPZ007/ Medicinal Chemistry BAPZ023 / Analytical Chemistry BAPZ013

2017–2021 Lecturer at School of Pharmacy Macau University of Science and Technology, Macau
Courses: Basic Chemistry BAPZ003 / Pharmaceutical Chemistry BAPZ007 / Medicinal
Chemistry BAPZ023 / Analytical Chemistry BAPZ013

2009–2017, Postdoctorals Fellowship

State Key Laboratory of Quality Research in Chinese Medicine Fellowship, Macau University
Science and Technology

Department of Science of Materials, University of Milan Bicocca, Milan, Italy

School of Pharmacy, University of Milan, Milan, Italy

CISI (Center for biomolecular interdisciplinary studies and industrial applications), Milan, Italy

National Research Council ISTM–CNR Milan, Italy

代表性文章/Publication

- 1) **Coghi P#**, Yun XY, Ng JPL, Law BYK, Memo M, Gianoncelli A, Wong VKW, Ribaudo G*. Exploring SARS-CoV-2 Delta variant spike protein receptor-binding domain (RBD) as a target for tanshinones and antimalarials. *Nat Prod Res.* **2022** Mar 25:1-6.
- 2) 4-(4-(((1H-benzo[d][1,2,3]triazol-1-yl)oxy)methyl)-1H-1,2,3-triazol-1-yl)-7-chloroquinoline. Leong Ka Fai, Margrate Anyanwu, Jiang Ai, Yuhan Xie, Alessandra Gianoncelli, Giovanni Ribaudo * and **Paolo Coghi** * (accepted Molbank)
- 3) Zhu Yunghai#, Prommana , Parichat; Hosmane, Narayan; **Coghi, Paolo**; Uthaipibull, Chairat* ; Zhang, Yingjun. Functionalized Boron Nanoparticles as Potential Promising Antimalarial Agents. (*ACS Omega*, January **2022**) <https://doi.org/10.1021/acsomega.1c05888>
- 4) Ng, J.P.L.#.; Tiwari, M.K.; Nasim, A.A.; Zhang, R.L.; Qu, Y.; Sharma, R.; Law, B.Y.K.; Yadav*, D.K.; Chaudhary*, S.; **Coghi, P.** *; Wong, V.K.W*. Biological Evaluation in Resistant Cancer Cells and Study of Mechanism of Action of Arylviny-1,2,4-Trioxanes. *Pharmaceuticals* **2022**, *15*, 360. <https://doi.org/10.3390/ph15030360>
- 5) XiaoYun Yun#, Yuhan Xie, Jerome P. L. Ng , Betty Yuen Kwan Law , Vincent Kam Wai Wong and **Paolo Coghi***. 2-Bromo-3-((1-(7-chloroquinolin-4-yl)-1H-1,2,3-triazol-4-yl)-methoxy)-benzaldehyde (*Molbank* **2022**, 2022(1), M1351; <https://doi.org/10.3390/M1351>)
- 6) Yoke Mooi Ng#, **Paolo Coghi**#, Jerome L. Ng, Fayaz Ali, Vincent Kam Wai Wong, Carmine Coluccini*. Synthesis and Coordination Properties of a Water-Soluble Material by Cross-Linking Low Molecular Weight Polyethyleneimine with Armed Cyclotrimertrilene. *Polymers.* *13*(23), 4133.
- 7) **Coghi Paolo**#, Li Jun Yang, Jerome Pak Lam Ng, Alessandra Gianoncelli, Vincent Kam Wai Wong* and Giovanni Ribaudo* A Drug Repurposing Approach for Antimalarials Interfering with SARS-CoV-2 Spike Protein Receptor Binding Domain (RBD) and Human Angiotensin-Converting Enzyme 2 (ACE2) (*Pharmaceuticals* **2021**, *14*(10), 954)
- 8) **Coghi, Paolo**#, Ng, Jerome#, Kadioglu, Onat; Law, Betty; Qiu, Alena; Saeed, Mohamed; Chen, Xi; Ip, Chio; Efferth, Thomas*; Liu, Liang*; Wong, Vincent Kam Wai*. Synthesis, computational docking and biological evaluation of celastrol derivatives as dual inhibitors of SERCA and P-glycoprotein in cancer therapy (*European Journal of Medicinal Chemistry* **2021**, *224*, 113676)
- 9) Pyronaridine induces apoptosis in Non-small cell lung cancer cells by upregulating DR5 expression and inhibiting EGFR Zheng-Hong Zhong# Ze-Lin Yi Yi-Dan Zhao Jue Wang Ze-Bo Jiang Cong Xu Ya-Jia Xie Qi-Da He Zi-Yan Tong Xiao-Jun Yao Elaine Lai-Han Leung **Paolo Coghi** Xing-Xing Fan* Min Chen, *Chem Biol & Drug Des.*, *00*, 1– 9, **2021**).
- 10) Tiwari, Mohit#, **Coghi, Paolo**#, Agrawal, Prakhar#, Yadav, Dharmendra Kumar; Yang, Li; Congling, Qiu; Sahal, Dinkar*; Wong, Vincent Kam Wai*; Chaudhary, Sandeep*. Novel Halogenated Arylviny-1,2,4 Trioxanes as Potent Antiplasmodial as well as Anticancer Agents: Synthesis, Bioevaluation, Structure-Activity Relationship and In-silico Studies (*European Journal of Medicinal Chemistry* **2021**, in press, 113675)
- 11) **Coghi Paolo Saul**#, Yinghuai Zhu, Hongming Xie, Narayan S Hosmane*, Yingjun Zhang* Boron Embowed Small Molecules as Antiviral, Antibacterial and Antiparasitic Agents (*Molecules* **2021**, *26*, 3309).

- 12) Douglas O. Ochora#, Esezah Kakudidi, Jane Namukobe, Matthias Heydenreich, **Paolo Coghi**, Li Jun Yang, Edwin W. Mwakio, Ben Andagalu, Amanda Roth, Hoseah M. Akala, Vincent K. W. Wong, Abiy Yenesew*. A new benzophenone and the Antiplasmodial activities of the constituents of *Securidaca longipedunculata* Fresen (Polygalaceae) (Natural Product Research, DOI: 10.1080/14786419.2021.1925272)
- 13) Giovanni Ribaudo*#, **Paolo Coghi***#, Li Jun Yang, Jerome Ng, Andrea Mastinu, Maurizio Memo, Vincent Kam Wai Wong. Computational and Experimental Insights on the Interaction of Artemisinin, Dihydroartemisinin and Chloroquine with SARS-CoV-2 Spike Protein Receptor-Binding Domain (RBD) (*Natural Product Research*, **2021** May 12;1-6) for project (0096/2020/A). doi:10.1080/14786419.2021.1925894 (corresponding author).
- 14) **Paolo Coghi***#, Jerome Ng, Ali Adnan Nasim, Dr. Vincent Kam Wai Wong# N-[7-Chloro-4-[4-(phenoxy)methyl]-1H-1,2,3-triazol-1-yl]quinoline]-acetamide (***Molbank* 2021**, 2021(2), M1213) for Special Issue "Synthesis of Flavonoids or Other Nature-Inspired Small Molecules") for project (0096/2020/A) (corresponding author).
- 15) Ruihong Chen#, Lijun Yang; Sami Hamdoun; **Paolo Coghi**; Jerome P. L. Ng; David Wei Zhang; Xiaoling Guo; Chenglai Xia; Betty Yuen Kwan Law, Dr. Vincent Kam Wai Wong*. Corilagin, a novel anti-SARS-CoV-2 agent targets RBD-ACE2 binding to prevent viral infection (***Phytomedicine***, 2021 May 5;87:153591) for project (0096/2020/A). doi:10.1016/j.phymed.2021.153591
- 16) Chepkirui C#, Ochieng PJ, Sarkar B, Hussain A, Pal C, Yang LJ, **Coghi P**, Akala HM, Dereese S, Ndakala A, Heydenreich M, Wong VKW, Erdélyi M*, Yenesew*, Antiplasmodial and antileishmanial flavonoids from *Mundulea sericea*, *Fitoterapia*. **2020** Nov 30:104796. doi: 10.1016/j.fitote.2020.104796
- 17) JPL Ng#, **P Coghi**, BYK Law, L Liu*, VKW Wong*. The present and future synthetic strategies of structural modifications of sinomenine. ***Org. Chem. Front.***, **2020**,7, 4089-4107.
- 18) Mohit K. Tiwari#, **Paolo Coghi**#, Prakhar Agarwal#, Bharti Rajesh K. Shyamlal, Lalit Yadav, Richa Sharma, Dharmendra K. Yadav, Dinkar Sahal*, Vincent Kam Wai Wong*, Sandeep Chaudhary*. Novel functionalized 1,2,4- Trioxanes as Potent Antimalarial and Anticancer Agents: Design, Synthesis, Structure Activity Relationship and *in silico* docking studies. ***ChemMedChem* 2020**, 15, 1216 doi: 10.1002/cmcd.202000045 (co-First author)
- 19) Ivan A. Yaremenko#, **Paolo Coghi**#, Parichat Prommana#, Congling Qiu, Peter S. Radulov, Yuanqing Qu, Yulia Yu Belyakova, Enrico Zanforlin, Vladimir A. Kokorekin, Yuki Yu Jun Wu, Fabrice Fleury, Chairat Uthaipibull*, Vincent Kam Wai Wong*, and Alexander O. Terent'ev*. Synthetic peroxides with unusual antimalarial activity selectively promotes apoptosis in cancer cells by inhibitory effect on ABCB5. ***ChemMedChem* 2020**, 15, 1118. (co-First author, Front Cover may 2020, hot topic 2020 in section Neglected and Tropical Disease). doi: 10.1002/cmcd.20200004
- 20) Luca Vaghi#, Mattia Coletta, **Paolo Coghi**, Ivan Andreosso, Luca Beverina, Riccardo Ruffo and Antonio Papagni*. Fluorine substituted non symmetric phenazines: a new synthetic protocol from polyfluorinated azobenzenes. ***Arkivoc* July 2019**, 1970. doi:10.24820/ark.5550190.p010.940.
- 21) Moses Andima#, **Paolo Coghi**, Li jun Yang, Vincent Kam Wai Wong, Crispus M. Ngule, Li Jun Albert J Ndakala, Abiy Yenesew and Solomon Dereese*. Antiproliferative Activity of Secondary Metabolites from *Zanthoxylum zanthoxyloides*: In vitro and in silico Studies. ***Pharmacognosy communications* (9,3, 2019)**
- 22) Daniel Buyinza#, Li Jun Yang, Solomon Dereese, Albert Ndakala, **Paolo Coghi**, Matthias Heydenreich, Vincent Kam Wai Wong, Heiko M. Möller, Abiy Yenesew*. Cytotoxicity of Isoflavones from *Milletia dura*, ***Natural Product research***, (sept **2019**). doi:10.1080/14786419.2019.1660335
- 23) Giovanni Ribaudo#, **Paolo Coghi**#, Enrico Zanforlin#, Yuki Yu Jun Wu, Yu Han, Alena Congling Qiu, Betty Yuen Kwan Law, Giuseppe Zagotto Vincent K. W. Wong*. Semi-synthetic isoflavones as BACE-1 inhibitors and P-glycoprotein ATPase stimulator against Alzheimer's disease., ***Bioorg Chem.* 2019** Jun;87:474-483. (Co- First author). doi:10.1016/j.bioorg.2019.03.034
- 24) CIFAL: A Method for Rapid Screening of Anilide-containing AMPK Modulators Based on Computational Docking and Biological Validation Simon Wing Fai Mok#, Wu Zeng, Yuzhen Niu, **Paolo Coghi**, Yujun Wu, Wai Man Sin, Sio Ian Ng, Flora Gordillo-Martinez, Jia Ying Gao, Betty Yuen Kwan Law, Liang Liu, Xiao Jun Yao, Vincent Kam Wai Wong#, **Journal: *Frontiers in Pharmacology***, section Experimental Pharmacology and Drug Discovery, **2018**, 9, 710 doi:10.3389/fphar.2018.00710
- 25) Souaibou Yaouba#, Arto Valkonen, **P.Coghi**, Jiaying Gao, Eric M. Guantai, Solomon Dereese, Vincent Kam Wai Wong*, Máté Erdélyi*, Abiy Yenesew*. Crystal Structures and Cytotoxicity of ent-Kaurane-Type Diterpenoids from two *Aspilia* species, ***Molecules***, Dec 4;23(12). pii: E3199 **2018**.

- 26) Novel peroxides as promising anticancer agents with unexpected depressed antimalarial activities. **P.Coghi**#, Ivan A. Yaremenko#, Parichat Prommana#, Peter S. Radulov, Mikhail A. Syroeshkin, Yu Jun Wu, Jia Ying Gao, Floria M. Gordillo, Simon Mok, Vincent Kam Wai Wong*, Chairat Uthaipibull*, and Alexander O. Terent'ev*. *Chemmedchem*. **2018** (Front Cover may **2018**, VIP paper, first author, hot topic 2020 in section Neglected and Tropical Disease) doi: 10.1002/cmdc.201700804
- 27) Law BYK#, Mok SWF#, Chen J, Michelangeli F, Jiang ZH, Han Y, Qu YQ, Qiu ACL, Xu SW, Xue WW, Yao XJ, Gao JY, Javed MU, **Coghi P**, Liu L#, Wong VKW*. N-desmethyldauricine induces autophagic cell death in apoptosis-defective cells via Ca²⁺ mobilization. *Frontiers in Pharmacology* **2017**, 16;8:388. <https://doi.org/10.3389/fphar.2017.00388>
- 28) Yoseph Atilaw#, Lois Muiva-Mutisya, Albert Ndakala, Hoseah M. Akala, Matthew L. Brown, Agnes C. Cheruiyot, **P.Coghi**, Vincent Kam Wai Wong, Abiy Yenesew*, Máté Erdély*. Four flavones with modified prenyl groups from the stem of *Tephrosia purpurea* supsp *leptostachya*. *Molecules* **2017**, Sep 10;22(9). doi: 10.3390/molecules22091514
- 29) Thalidezine, A Novel AMPK Activator, Eliminates Apoptosis-resistant Cancer Cells Through Energy-mediated Autophagic Cell Death, *Oncotarget* **2017** 2;8(18):30077-30091, doi: 10.18632/oncotarget.15616
- 30) Autophagic degradation of epidermal growth factor receptor in gefitinib-resistant lung cancer by celastrol. *International journal of oncology*, **2016** Oct;49(4):1576-88 doi: 10.3892/ijo.2016.3644
- 31) **P. Coghi** #, Antonio Papagni, Riccardo Po, Anna Calabrese, Alessandra Tacca, Alberto Savoini*. Reactivity of Decafluorobenzophenone and decafluoroazobenzene towards aromatic diamines: a potential entry to Donor-Acceptor systems *New Journal of Chemistry*, **2015**, *New J. Chem*, 39, 3615-3623. 10.1039/C4NJ02359E
- 32) Richard K. Haynes#, Kwan-Wing Cheu, David N'Da, Paolo **Coghi** DD.Monti. Some Current Considerations on the Mechanism of action of Artemisinin Antimalarials : Part 1 – The ‘Carbon Radical’ and ‘Heme’ Hypotheses, *Infectious Disorders – Drug Targets*, **2013**, 13, 217-277
- 33) D. P. Ilboudo#, N.Basilico, S. Parapini, Y. Corbett, S.D'Alessandro, M.Dell'Agli, **P.Coghi**, S.D.Karou, R. Sawadogo, C.Gnoulou, J.Simpore, J.BaptisteNikiema, D.Monti, E.Bosisio, D.Taramelli*. Antiplasmodial and anti-inflammatory activities of *Canthium henriquesianum* (K. Schum), a plant used in traditional medicine in Burkina Faso. *Journal of Ethnopharmacology* **2013**.148, 3, 763-769. <https://doi.org/10.1016/j.jep.2013.04.049>
- 34) Haynes RK#*, Cheu KW, Chan HW, Wong HN, Li KY, Tang MM, Chen MJ, Guo ZF, Guo ZH, Sinniah K, Witte AB, Coghi P, Monti D*. Interactions between Artemisinins and other Antimalarial Drugs in Relation to the Co-Factor Model – A Unifying Proposal for Drug Action". *ChemMedChem* **2012**, 7, 12, 2204-2226.
- 35) R.K. Haynes#*, K.Cheu, K.Li, M.Tang, H.Wong, M.Chen, Z.Guo, Z.Guo, **P.Coghi**, D.Monti* A Parallel in Action of Methylene Blue and Artemisinins - Antagonism with Chloroquine, a Reversal with Verapamil, and an Aspect of Antimalarial Activity of Chloroquine.. *ChemMedChem* **2011**, 6, 9, 1603-1615.
- 36) Haynes RK#*, Cheu KW, Tang MM, Chen MJ, Guo ZF, Guo ZH, **Coghi P**, Monti D* Reactions of Antimalarial Peroxides with Each of Leucomethylene Blue and Dihydroflavins: Flavin Reductase and the Cofactor Model Exemplified *ChemMedChem* **2011**, 6, 2, 279-291.
- 37) R.K. Haynes#*, W.Chan, H.Wong, K.Li, W.Wu, K.Fan, H. Sung, I.D. Williams, D. Prosperi, S.Melato, **P.Coghi**, D. Monti *Facile Oxidation of Leucomethylene Blue and Dihydroflavins by Artemisinins: Relationship with Flavoenzyme Function and Antimalarial Mechanism of Action.. *ChemMedChem* **2010**, 5, 8, 1282-1299.
- 38) N.Basilico#, S.Parapini, F. Sisto, F.Omodeo-Salè, **P.Coghi**, F.Ravagnani, P.Oliario,D.Taramelli *The lipid moiety of haemozoin (malaria pigment) and *P.falciparum* parasitised red blood cells bind synthetic and native endothelin-1.. *Journal of Biomedicine and Biotechnology*.**2010**, 1-9.
- 39) **P.Coghi**#, N. Basilico, D. Taramelli, W. Chan, R.K. Haynes*, D.Monti*. Interaction of Artemisinins with Oxyhemoglobin Hb-Fell, Hb-Fell, CarboxyHb-Fell, Heme-Fell, and Carboxyheme Fell: Significance for Mode of Action and Implications for Therapy of Cerebral Malaria. *ChemMedChem(cover picture)* **2009**, 4, 12, 2045-2053.
- 40) N.Basilico#, E Bosisio, F Buelli, G Campiani, M Casagrande, F Castelli, **P Coghi** et al. Old and new targets for innovative antimalarial compounds: the different strategies of the Italian Malaria Network". *Parassitologia*. **2008**

- 41) **P.Coghi**#, N.Vaiana, M.G. Pezzano, L.Rizzi, M.Kaiser, R.Brun, S.Romeo* Parallel synthesis and antileishmanial activity of ether-linked phospholipids. *Bioorganic and Medicinal Chemistry Letters* **2008**, 18, 16, 4658-4660.
- 42) S. Melato#, D.Prosperti, **P.Coghi**, N.Basilico, D.Monti *. A Combinatorial Approach to 2,4,6-Trisubstituted Triazines with Potent Antimalarial Activity: Combining Conventional Synthesis and Microwave-Assistance.. *ChemMedChem* **2008**, 3, 6, 873-876.
- 43) S. Melato#, D.Prosperti, **P.Coghi**, N.Basilico, D.Monti *. Novel 4-Aminoquinolines through Microwave-Assisted SNAr Reactions: a Practical Route to Antimalarial Agents. *Eur. J. Org. Chem* **2007**, 36, 6618-6623.

书/Book

Fundamentals and Applications of Boron Chemistry Chapter: Boron containing small molecules as antiparasitic agents, **2022**

专利/Patent

- 1) Patent prop. WO2014188376 A1 - Stabilized photoactive composition and use thereof. V.Malatesta, **P.Coghi** A.Papagni, G.Giannotta. Uv light stabilization additive package for solar cell, **2014**.
- 2) Patent prop. CN 111848722 B –Tripterine derivative and preparation method and application thereof Huang Jinwei, Liu Liang, **Paul Coghi**, Luo Wanjun,Wu Bolin **2021**