

Curriculum Vitae

Personal information **Mariana Varna**

Work experience

Since September 2015: **Associate Professor** at the Faculty of Pharmacy, Paris-Saclay University, CNRS UMR 8612, Orsay, France.

I'm working on the development of nanomedicines for cardiovascular and inflammatory diseases.

2014-2015: **Postdoctoral fellowship** at Laboratory for Vascular Translational Science, U1148, Paris, France. *Subject: Nanoparticles for thrombolysis and heart ischemia therapy.*

2012-2014: **Postdoctoral fellowship** at Institut Langevin-Ecole Supérieure de Physique et de Chimie Industrielles (ESPCI, Paris) and Nanyang Technological University (NTU), Singapore. *Subject: Gold nanoparticles and hyperthermia in cancer treatment.*

2008-2012: **Postdoctoral fellowship** at University Institute of Hematology, Saint Louis Hospital, Paris, France. *Subject: Stem cells and resistance to therapy.*

GROUP LEADER

Since 2016: Nanomedicines applied in the cardiovascular field: rodent models of cardiac failure and atherosclerosis, UMR 8612, Paris-Saclay University.

2006-2010: Development of the platform « Human tumors xenografts in mice », Institute Universitaire d'Hématologie, Paris, France.

Education and training

2021: **Habilitation to supervise Research (HDR)**, Paris-Saclay University, France.

2010: **Intellectual property** course, Pierre and Marie Curie University, Paris, France.

2004-2008: **Ph.D. in Experimental Biology**, Denis Diderot University, INSERM U1165, France.

2007: **Animal Training, Level I**, Denis Diderot University, Paris, France.

2003-2004: **Master 2 degree in “Fundamental Basis of Oncology”**, Denis Diderot University, Paris, France.

2002-2003: **Master 1 degree in “Molecular Genetics, University”** Pierre et Marie Curie University, Paris, France.

Additional information

Publications

1. Mariana Varna, Manuela Calin and Ille C. Gebeshuber, *Advances*

- in Natural and Bio-Inspired Nanoparticles for the Treatment of Cardiovascular Diseases*, *Nanomaterials* 2023, 13(23), 3015; <https://doi.org/10.3390/nano13233015>
2. Brusini, R.; Tran, N.L.L.; Cailleau, C.; Domergue, V.; Nicolas, V.; Dormont, F.; Calet, S.; Cajot, C.; Jouran, A.; Lepetre-Mouelhi, S.; Julie Laloy, Patrick Couvreur, and Mariana Varna, *Assessment of Squalene-Adenosine Nanoparticles in Two Rodent Models of Cardiac Ischemia-Reperfusion*. *Pharmaceutics* 2023, 15,1790. doi.org/10.3390/pharmaceutics15071790
 3. Gendron A, Domenichini S, Zanna S, Gobeaux F, Piesse C, Desmaële D, Varna M., Development and Characterization of Innovative Multidrug Nanoformulation for Cardiac Therapy., *Materials* (Basel). 2023 Feb 22;16(5):1812. doi: 10.3390/ma16051812
 4. Gendron A, Tran NLL, Laloy J, Brusini R, Rachet A, Gobeaux F, Nicolas V, Chaminade P, Abreu S, Desmaële D and **Varna M***. “New Nanoparticle Formulation for Cyclosporin A: In Vitro Assessment”, *Pharmaceutics*, 2021, 13, 91. <https://doi.org/10.3390/pharmaceutics 13010091> (*corresponding author).
 5. Brusini R, **Varna M**, Couvreur P. “Advanced nanomedicines for the treatment of inflammatory diseases”, *Adv Drug Deliv Rev*, 2020 Jul 19:S0169-409X(20)30094-6. doi: 10.1016/j.addr.2020.07.010.
 6. Dormont F, Brusini R, Cailleau C, Reynaud F, Peramo A, Gendron A, Mouglin J, Gaudin F, **Varna M**, Couvreur P, “Squalene-based multidrug nanoparticles for improved mitigation of uncontrolled inflammation”, *Science Advances*, 2020 Jun 5;6(23):eaaz5466. doi: 10.1126/sciadv.aaz5466.
 7. Brusini R, Dormont F, Nicolas V, Cailleau C, Peramo A, **Varna M**, Couvreur P. “Squalene-based nanoparticles for the targeting of atherosclerotic lesions”, *International Journal of Pharmaceutics*, May 15;581:119282. doi: 10.1016/j.ijpharm.2020.119282.
 8. Dormont F, Rouquette M, Mahatsekake C, Gobeaux F, Peramo A, Brusini R, Calet S, Testard F, Lepetre-Mouelhi S, Desmaële D, **M Varna**, P Couvreur. “Translation of nanomedicines from lab to industrial scale synthesis: The case of squalene-adenosine nanoparticles”, *Journal of Controlled Release*, 2019, 307; 302-314, <https://doi.org/10.1016/j.jconrel.2019.06.040>.
 9. Dormont F, **Varna M**, & Couvreur, P. “Nanoplumbers: biomaterials to fight cardiovascular diseases”. *Materials Today*, 2018, 21(2), 122–143. doi:10.1016/j.mattod.2017.07.008.

10. **Varna M***, Xuan HV, Fort E. “*Gold nanoparticles in cardiovascular imaging*”, Wiley Interdiscip Rev Nanomed Nanobiotechnol, 2018 Jan;10(1). doi: 10.1002/wnan.1470 (*corresponding author)
11. Boissenot T, Bordat A, Larrat B, **Varna M**, Chacun H, Paci A, Poinsignon V, Fattal E, Tsapis N, “*Ultrasound-induced mild hyperthermia improves the anticancer efficacy of both Taxol® and paclitaxel-loaded nanocapsules*”. J Control Release, 2017 Oct 28;264:219-227. doi: 10.1016/j.jconrel.2017.08.041
12. Delyon J, **Varna M**, Feugeas JP, Sadoux A, Yahiaoui S, Podgorniak MP, Leclert G, Dorval SM, Dumaz N, Soulie J, Janin A, Mourah S, Lebbé C. “*Validation of a preclinical model for assessment of drug efficacy in melanoma*”. Oncotarget, 2016 Mar 15;7(11):13069-81.
13. **Varna M**, Juenet M, Bayles R, Mazighi M, Chauvierre C, Letourneur D. “*Nanomedicine as a strategy to fight thrombotic diseases*”. Future Sci OA, 2015 Nov 1;1(4):FSO46. doi: 10.4155/fso.15.46
14. Juenet M, **Varna M**, Aid-Launais R, Chauvierre C, Letourneur D. “*Nanomedicine for the molecular diagnosis of cardiovascular pathologies*”. Biochem Biophys Res Commun., 2015 Dec 18;468(3):476-84. doi: 10.1016/j.bbrc.2015.06.138.
15. Bousquet G, El Bouchtaoui, M, Leboeuf C, Battistella M, **Varna M**, Ferreira I, Plassa LF, Hamdan D, Bertheau P, Feugeas JP, Damotte D, Janin A. “*Tracking sub-clonal TP53 mutated tumor cells in human metastatic renal cell carcinoma*”. Oncotarget, 2015;7;6(22):19279-89.
16. Varna M, Gapihan G, Feugeas JP, Ratajczak P, Tan S, Ferreira I, Leboeuf C, Setterblad N, Duval A, Verine J, Germain S, Mongiat-Artus P, Janin A, Bousquet G. “*Stem cells increase in numbers in perinecrotic areas in human renal cancer*”. Clin Cancer Res., 2015 Feb 15;21(4):916-24. doi: 10.1158/1078-0432.CCR-14-0666.
17. Nahas A, **Varna M**, Fort E, Boccara AC. “*Detection of plasmonic nanoparticles with full field-OCT: optical and photothermal detection*”, Biomed Opt Express, 2014; 5(10):3541-6.
18. **Varna M**, Bousquet G, Ferreira I, Goulard M, El-Bouchtaoui M, Artus PM, Verine J, de Kerviler E, Hernandez L, Leboeuf C, Escudier B, Legrès L, Setterblad N, Soliman H, Feugeas JP, Janin A, Bertheau P. “*Stability of preclinical models of aggressive renal cell carcinomas*”, Int J Clin Exp Pathol., 2014; 7(6):2950-62.

19. Mourah S, **Varna M**, Sadoux S, Yahiaoui S, Podgorniak MP, Leclert G, Pages C, May P, Pla M, Soulier J, Feugeas JP, Janin A, Lebbe C. Validation of preclinical models of melanoma: tools for therapeutic evaluation, *Fundamental & Clinical Pharmacology*, 2014; 28:39.
20. **Varna M***, Bertheau P, Legrès LG. "[Tumor Microenvironment in Human Tumor Xenografted Mouse Models](#)", *J Anal Oncol.*, 2014; 3 (3):159-6. (*corresponding author)
21. Legrès L, Chamot C, **Varna M**, Janin A. "*The laser technology: new trends in biology and medicine*", *J Modern Physics*, 2014; 5:267-79.
22. Leboeuf C, Ratajczak P, Véline P, Elbouchtaoui M, Plassa F, Legrès L, Ferreira I, Sandid W, **Varna M**, Bousquet G, Verneuil L, Janin A. "*Assessment of chimerism in epithelial cancers in transplanted patients*", *Pathobiology*, 2014; 81(3):114-22.
23. Richard R, Thomassin I, Chapellier M, Scemama A, de Cremoux P, **Varna M**, Giacchetti S, Espié M, de Kerviler E, de Bazelaire C. "*Diffusion-weighted MRI in pretreatment prediction of response to neoadjuvant chemotherapy in patients with breast cancer*", *Eur Radiol.*, 2013; 23(9):2420-31 .
24. Bertheau P, Lehmann-Che J, **Varna M**, Dumay A, Poirot B, Porcher R, Turpin E, Plassa LF, de Roquancourt A, Boursstyn E, de Cremoux P, Janin A, Giacchetti S, Espié M, de Thé H. "*p53 in breast cancer subtypes and new insights into response to chemotherapy*", *The Breast*, 2013; 22(2):S27-9.
25. Bousquet G, **Varna M**, Ferreira I, Wang L, Mongiat-Artus P, Leboeuf C, de Bazelaire C, Faivre S, Bertheau P, Raymond E, Germain S, Janin A. "*Differential regulation of sunitinib targets predicts its tumor-type-specific effect on endothelial and/or tumor cell apoptosis*", *Cancer Chemother Pharmacol.*, 2013; 72(6):1183-93.
26. Verneuil L, **Varna M**, Ratajczak P, Leboeuf C, Plassa LF, Elbouchtaoui M, Schneider P, Sandid W, Lebbe C, Peraldi MN, Sigaux F, de Thé H, Janin A. "*Human skin carcinoma arising from kidney transplant-derived tumor cells*", *J Clin Invest.*, 2013; 123(9):3797-801.
27. Verine J, **Varna M**, Ratajczak P, El-Bouchtaoui M, Leboeuf C, Plassa LF, Soliman H, Sandid W, Abboud I, Bousquet G, Verneuil L, Peraldi MN, Mongiat-Artus P, Janin A. "*Human de novo papillary renal-cell carcinomas in a kidney graft: evidence of recipient origin with adenoma-carcinoma sequence*", *Am J*

28. Huang L, Perrault C, Coelho-Martins J, Hu C, Dulong C, **Varna M**, Liu J, Jin J, Soria C, Cazin L, Janin A, Li H, Varin R, Lu H. *“Induction of acquired drug resistance in endothelial cells and its involvement in anticancer therapy”*, J Hematol Oncol., 2013; 6(49):1-12.
29. Richard R, Thomassin I, Chapellier M, Scemama A, de Cremoux P, **Varna M**, Giacchetti S, Espié M, de Kerviler E, de Bazelaire C. *“Diffusion-weighted MRI in pretreatment prediction of response to neoadjuvant chemotherapy in patients with breast cancer”*, Eur Radiol., 2013; 23(9):2420-31 *, Ratajczak P, Bousquet G, Ferreira I, Leboeuf C, Boisdard R, Gapihan G, Palpant B, Bossy E, Doris E, Poupon J, Fort E, Janin A. *“In vivo uptake and cellular distribution of gold nanoshells in a preclinical model of xenografted human renal cancer”*, Gold Bulletin, 2013; DOI 10.1007/s13404-013-0115-8. (* corresponding author)
30. Verneuil L, **Varna M**, Leboeuf C, Plassa LF, Elbouchtaoui M, Loisel-Ferreira I, Bouhidel F, Peraldi MN, Lebbé C, Ratajczak P, Janin A. *“Donor-derived keratinocytes in actinic keratosis and squamous cell carcinoma in patients with kidney transplant”*, J Invest Dermatol., 2013; 133(4):1108-11.
31. Bousquet G, **Varna M**, Janin A. *“Mécanismes de résistance aux inhibiteurs de la voie du VEGF”*, Annales de pathologie, 2010; 30 (5): 40-41.
32. Janin A, Wang L, Ratajczak P, **Varna M**, Socié G, Bousquet G. *“Bevacizumab, capillary leak syndrome and acute graft-versus-host disease”*, Blood e-Letters published 15 July, 2010.
33. de Bazelaire C, Rivet J, **Varna M**, Katsahian S, Leboeuf C, Sandid W, Bertheau P, Janin A. *“Necrosis assessment in renal carcinoma”*, Hum Pathol., 2012; 43(1):150-2.
34. **Varna M**, Bousquet G, Plassa LF, Bertheau P, Janin A. *“TP53 status and response to treatment in breast cancers”*, J Biomed Biotechnol., 2011; vol. 2011:1-9.
35. **Varna M**, Ratajczak P, Ferreira I, Leboeuf C, Bousquet G, Janin A. *“In vivo distribution of inorganic nanoparticles in preclinical models”*, J. Biomat. Nanobiotech., 2012; 3:269-279.
36. Lehmann-Che J, Amira-Bouhidel F, Turpin E, Antoine M, Soliman H, Legres L, Bocquet C, Bernoud R, Flandre E, **Varna M**, de Roquancourt A, Plassa LF, Giacchetti S, Espié M, de

- Bazelaire C, Cahen-Doidy L, Bourstyn E, Janin A, de Thé H, Bertheau P. *“Immunohistochemical and molecular analyses of HER2 status in breast cancers are highly concordant and complementary approaches”*, Br J Cancer, 2011; 104(11):1739-46.
37. Wang L, Shi WY, Yang F, Tang W, Gapihan G, **Varna M**, Shen ZX, Chen SJ, Leboeuf C, Janin A, Zhao WL. *“Bevacizumab potentiates chemotherapeutic effect on T-leukemia/lymphoma cells by direct action on tumor endothelial cells”*, Haematologica, 2011; 96(6):927-31.
38. Verneuil L, Gouarin S, Comoz F, Agbalika F, Creveuil C, **Varna M**, Vabret A, Janin A, Leroy D. *“Epstein-Barr virus involvement in the pathogenesis of hydroa vacciniforme: an assessment of seven adult patients with long-term follow-up”*, Br J Dermatol., 2010; 163(1):174-82
39. Legrès L, **Varna M**, Boudihel F, Leboeuf C, Ratajczak P, Martin N, Plassa LF, Soliman H, Turpin E, Lehmann-Che J, de Thé H, Courtf M, Masselonf M, Garin J, Janin A, Bertheau P, *“Principe et applications de la microdissection laser en histopathologie”*, Revue Francophone des Laboratoires, 2010; (418):57-66.
40. **Varna M**, Lehmann-Che J, Turpin E, Marangoni E, El-Bouchtaoui M, Jeanne M, Grigoriu C, Ratajczak P, Leboeuf C, Plassa LF, Ferreira I, Poupon MF, Janin A, de Thé H, Bertheau P. *“TP53 dependent cell-cycle arrest triggered by chemotherapy in xenografted breast tumors with normal or mutated p53”*, Int J Cancer, 2009; 124(4):991-7.
41. Ghoul A, Serova M, Astorgues-Xerri L, Bieche I, Bousquet G, **Varna M**, Vidaud M, Phillips E, Weill S, Benhadji KA, Lokiec F, Cvitkovic E, Faivre S, Raymond E. *“Epithelial-to-mesenchymal transition and resistance to ingenol 3-angelate, a novel protein kinase C modulator, in colon cancer cells”*, Cancer Res., 2009; 69(10):4260-69.
42. Janin A, Murata H, Leboeuf C, Cayuela JM, Gluckman E, Legrès L, Desveaux A, **Varna M**, Ratajczak P, Soulier J, de Thé H, Bertheau P, Socié G. *“Donor-derived oral squamous cell carcinoma after allogeneic bone marrow transplantation”*, Blood, 2009; 113(8):1834-40.
43. Bertheau P, Espié M, Turpin E, Lehmann J, Plassa LF, **Varna M**, Janin A, de Thé H. *“TP53 status and response to chemotherapy in breast cancer”*, Pathobiology, 2008; 75(2):132-9.
44. **Varna M** et Artenie V. *“La sénescence cellulaire”*. Analele Științifice ale Universității Alexandru Ioan Cuza,

Secțiunea Genetică și Biologie Moleculară, 2007; tom VIII, 81-86.

45. **Varna M** et Artenie V. “*siRNA et microRNA : biogenese, mecanismes et fonctions*”. Analele Științifice ale Universității Alexandru Ioan Cuza, Secțiunea Genetică și Biologie Moleculară, 2007; tom VIII, 15-24.
46. Bertheau P, Turpin E, Rickman D, Espié M, de Reyniès A, Feugeas JP, Plassa LF, Soliman H, **Varna M**, de Roquancourt A, Lehman J, Beuzard Y, Marty M, Misset JL, Janin A, de Thé H. “*Exquisite chemotherapy response of TP53 mutant and basal breast cancers*”, PLoSMed., 2007; 4(3):585-94.
47. **Varna M**, Soliman H, Feugeas JP, Turpin E, Chapelin D, Legres L, Plassa LF, de Roquancourt A, Espié M, Misset JL, Janin A, de Thé H, Bertheau P. “*Changes in allelic imbalances in locally advanced breast cancers after chemotherapy*”, Br J Cancer, 2007; 97(8):1157-64.
48. **Varna M**, Ratajczak P, Bertheau P, Janin A. BCL2L1 (BCL2-like 1), «Atlas Genet Cytogenet Oncol Haematol.», 2009; URL:[http://Atlas Genetics Oncology.org/ Genes/ BCL2L1 ID129ch20q11.html](http://AtlasGeneticsOncology.org/Genes/BCL2L1ID129ch20q11.html)
49. Legrès L, **Varna M**, Boudihel F, Leboeuf C, Ratajczak P, Martin N, Plassa LF, Soliman H, Turpin E, Lehmann-Che J, de Thé H, Courtf M, Masselonf M, Garin J, Janin A, Bertheau P. « Principe et applications de la microdissection laser en histopathologie », Revue Francophone des Laboratoires, 2010; (418):57-66.
50. Furet E, Ferreira I, de Bazelaire C, de Kerviler C, Krikler S, Bousquet G, **Varna M**, Janin A. «Ultrasonography-Guided Sequential Biopsies of Human Cancer Xenografted in Mice », Series Recent Developments in Biotechnology Vol. 1: Animal Biotechnology. 2014 (chapter book)
51. **Varna M**, Juenet M, Bayles R, Mazighi M, Chauvierre C, Letourneur D. «Nanomedicine as a strategy to fight thrombotic diseases ». Nanomedicine as a strategy to fight thrombotic diseases, Handbook of clinical nanomedicine, Series on Nanomedicine (2016), volume 1, chapter 55, p1612-1637 (chapter book).
52. M Juenet, **M Varna**, C Chauvierre, D Letourneur, «Nanotheranostic in cardiovascular diseases », 2015, Ed. World Scientific, DOI: https://doi.org/10.1142/9789814713535_0009 (chapter book).

Projects

Actual project: Development of nanomedicines for cardiac therapy and their evaluation on preclinical models.

Memberships

• **Project Expertise**

2022-2024: project reviewer for the framework « Egypt-France” Centre for the Promotion of Research.

2019-present: project reviewer for the French Agency “Agence Nationale de la Recherche” (ANR).

2019: project reviewer for the framework of the University of Lorraine's call for incentive projects.

2018: project reviewer for the framework « Indo-French Centre for the Promotion of Advanced Research).

2016-2027: project reviewer for the European Research Council (ERC) Consolidator Grant.

• **Journal Reviewer**

2012 - present: ACS Omega, Journal of Controlled Release, Pharmaceutics, Pharmacological Research, International Journal of Pharmaceutics, Journal of Clinical research; Pathobiology, Journal of Biomedicine and Biotechnology, Journal of Analytical Oncology, Molecular Therapy, American Journal of Materials Science and Engineering, Molecules, Acta biomaterialia, Nano Letters, Journal of Drug targeting, British Journal of Pharmaceutical Research, British Journal of Medicine and Medical Research.

• **Invited conferences.**

2009-2023: 16 invited international and national conferences.

Other Relevant Information

• **Organization of Symposiums and Conferences**

2023: Member of the **Organizing Committee** of the “1st Scientific research Day” of the interdisciplinary action "Health and Therapeutic Innovation" (HEALTHI), Paris-Saclay University, France

2021: Member of the **Organizing Committee** of the Autumn School "Therapeutic Innovation" of the interdisciplinary action "Health and Therapeutic Innovation" (HEALTHI), Paris-Saclay University, November 22 - 23, Seminar Center of the Domaine de Saint-Paul, Saint-Rémy-les-Chevreuse, France.

2018: Member of the **Organizing Committee** of the "First international Symposium of Paris-Saclay University, Drug Discovery and new therapeutics", April 9-11, Orsay, France.

Since 2018: co-responsible for the **organization of the Seminars** of the Unit UMR 8612-Institut Galien, Paris -Saclay University, France.

2005: Member of the **Organizing Committee** of the "Rencontre des Jeunes Scientifiques", University Institute of Hematology, Paris Diderot University, France.

• **Participation in Ph.D. defense Jurys**

2022: Member of the **Jury Thesis**, student Souad Adriouach, “Squalene-based near-infrared dye nanoparticles for the imaging and treatment of cancer by phototherapy”, University of Geneva (Switzerland)

2021: Member of the **Jury Thesis Follow-up committee** (2nd year), student Nguyen Trung Kien, Doctoral School Chemical and Biological Sciences for Health (ED168), Montpellier, France

2020: Member of the **Jury Thesis Follow-up committee** (1st year), student Nguyen Trung Kien, Doctoral school Chemical and Biological Sciences for Health (ED168), Montpellier, France

2017: Member of the **Jury Thesis**, student Yolanda Gonzales, Fernandez, School of Pharmacy and nutrition, University of Navarra, Spain.