Pierre SANTUCCI Ph.D

32 y.o - French

CNRS Research Associate (CRCN) – Principal Investigator
Laboratoire d'Ingénierie des Systèmes Macromoléculaires (LISM)
UMR7255-CNRS, 31 Chemin Joseph-Aiguier
13009 MARSEILLE, France
Laboratory Website
Personnal Website

☎: +(33) 4.91.16.40.91
@: psantucci@imm.cnrs.fr
Google Scholar
ORCID
My Bibliography
Bluesky

Education

2018 – Ph.D degree in Biology, Specialty Microbiology - Aix-Marseille Université, France.

2015 – Master degree in Microbiology - Aix-Marseille Université, France.

2013 – Licence degree in Molecular Biology and Biochemistry - Paris-Diderot Université, France.

2012 – University degree in Technology, Specialty Microbiology (DUT) - Université de Toulon, France.

Current Position

Since 2022 – Principal Investigator – CNRS Research Associate (CRCN - Tenured)
LISM UMR7255, CNRS-Aix-Marseille Université, France.

Previous Positions

2019 / 2022 – FEBS - Marie Skłodowska-Curie Action Post-Doctoral Fellow
Host-Pathogen Interactions in Tuberculosis Laboratory, The Francis Crick Institute, London, United-Kingdom.
Hosted by Maximiliano Gutierrez, Ph.D

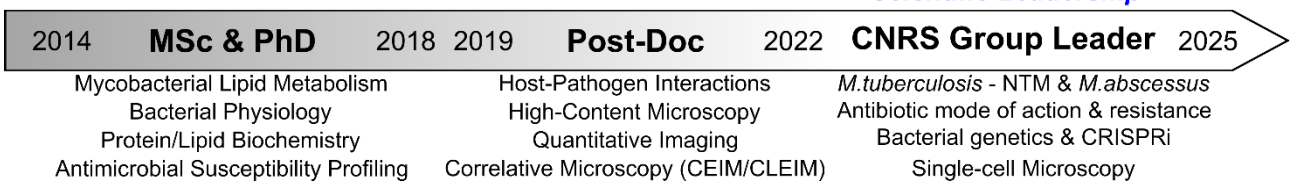
2014 / 2018 – Master and PhD degree candidate
Lipolysis and Bacterial Pathogenicity Group, LISM UMR7255, CNRS-Aix-Marseille Université, France.
Hosted by Stéphane Canaan, Ph.D

Expertise & Research Keywords

Molecular and Cellular Microbiology – **Host Pathogen Interactions – Antibiotic mode(s) of action**

Mycobacterium tuberculosis, Mycobacterium abscessus, Bacterial genetics, *Microbial Pathogenesis*, *Infection Biology, Antibiotic Resistance, Live & Correlative Microscopy, Single-Cell (Micro)Biology, Quantitative Imaging, Subcellular Environments, Intracellular Pharmacokinetics, Pyrazinamide.*

Scientific Leadership



Fellowships & Awards

2023 Federation of European Biochemistry Societies (FEBS) Excellence Award
2022 European Respiratory Society (ERS) Long-Term Research Fellowship
2020 H2020 Marie Skłodowska-Curie Actions (MSCA) Individual Fellowship
2019 Federation of European Biochemistry Societies (FEBS) Long-Term Post-Doctoral Fellowship
2019 National Thesis Prize in Microbiology awarded by the French Society of Microbiology (SFM)

Supervising Activities

Since 2023 Full supervision of 2 BTEC, 3 MSc students, 1 PhD student and 1 Post-Doctoral Fellow
2020 / 2022 Co-supervision of 1 undergraduate student with Dr Maximiliano Gutierrez
2015 / 2018 Co-supervision of 7 undergraduate students with Dr Stéphane Canaan

Research Funding (as PI-coordinator)

2024 **Project grant Agence Nationale de la Recherche (ANR JCJC) Program CE15** 310k€ (2025-2027)
2023 **Project grant from the ANRS/MIE Agency** 20k€ (2023-2024)
2023 **Starting grant CNRS Biologie for junior PI** 20k€ (2023-2024)
2023 **Project grant from the IM2B-A*Midex Foundation** 10k€ (2023)

Teaching Activities

Since 2023 **Engineering & Biologial Systems** (36 hours/years – MSc Level) at Ecole Centrale de Marseille.
2022 / 2023 **Scientific Edition Lectures (**2 hours – MSc Level) at Aix-Marseille Université.
2022 / 2023 **Mycobacterial Pathogenesis Lectures** (20 hours – MSc Level) at Aix-Marseille Université.
2015 / 2018 **Biochemistry lectures** (64 hours/year – BSc Level) at Aix-Marseille Université.

Editorial Boards and Reviewing activities

Since 2025 **Academic Editor at *PLOS Pathogens***
Since 2024 **Early-Career Editor at *mBio***
Since 2024 **Publishing Liaison Officer & Editorial Board Member at *FEBS Open Bio***
Since 2021 **Junior Editor at *Molecular Microbiology***
2020 / 2021 **Junior Editor at *Cellular Microbiology***
Since 2018 **Reviewer for scientific peer-reviewed journals** (1-2 article(s) per month)

EbioMedicine, eLife, PLOS Pathogens, mBio, Cellular Microbiology, Molecular Microbiology, Biology Open, Microbiology Spectrum, Microbiology, Bioscience Reports, Frontiers in Immunology, FEBS Open Bio, Scientific Reports, PloS One, Research in Microbiology, Microbes & Infection.

Evaluation panels

Since 2025 **External Reviewer for the UK Research & Innovation Grant Applications**
Since 2024 **Evaluation Member of 2 PhD thesis defenses & 2 PhD thesis committee**
Since 2024 **External Reviewer for the ANRS Grant Application Scheme (CSS11 – HIV – Tuberculosis)**
Since 2024 **Reviewer for the French Cystic Fibrosis Foundation Grant Applications**
Since 2023 **European Respiratory Society (ERS) College of Expert Member for Fellowship Applications**

Memberships in Scientific Societies

Since 2024 **Elected Board Member of the French Society of Biochemistry & Molecular Biology (SFBBM)**
Since 2023 **TBnet & NTMnet -** Active Member
Since 2020 **European Respiratory Society (ERS) -** Active Member
Since 2019 **French Society of Biochemistry & Molecular Biology (SFBBM) -** Active Member
Since 2015 **French Society of Microbiology (SFM) -** Active Member

Selected Press Releases

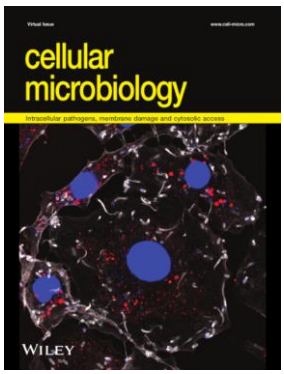
2024 *"Highlight FEBS 60th Anniversary – My early- to mid-career journey"* on FEBS Network
2023 "*Celebrating the FEBS Fellows*" New issue available at FEBS Open Bio
2023 *"Highlight on Correlative Microscopy and anti-TB drugs"* on Microscopy Australia
2022 *"At a glance: introduction to FEBS Long-Term Fellows"* available at FEBS Network
2022 *"Junior Editor" Interview* in *Molecular Microbiology*
2022 *"Results in Brief"* of the H2020 project "*SpaTime-AnTB*" on the EU CORDIS website
2022 "*Highlight*" on pyrazinamide mode of action in macrophages on the Crick website
2021 *"Highlight"* on *M. tuberculosis* localisation and pyrazinamide efficacy on the Crick website
2021 "*Behind the Paper*" Nature Portfolio Microbiology on Santucci *et al*. in *Nature Communications*

(Inter)National conferences and workshops

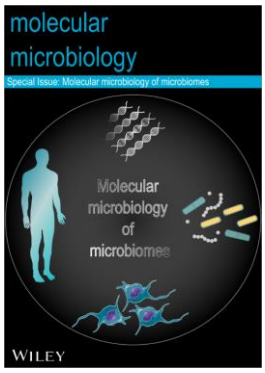
49th FEBS Congress– Istanbul, Turkey (2025) – Confirmed Invited Speaker (Upcoming)
Journée scientifique d'action coordonnée Tuberculose (AC-TB) (2025) – ANRS/MIE, Paris– Oral Presentation
Boston Meets Marseille– Marseille, France (2024) – Oral Presentation
MycoDays – Lille, France (2024) – Scientific Comittee
48th FEBS Congress – Milan, Italy (2024) – Poster
FEBS Excellence Awardees Meeting – Pavia, Italy (2024) – Invited Speaker
47th FEBS Congress – Tours, France (2023) – Poster
Journée scientifique d'action coordonnée Tuberculose (AC-TB) – ANRS/MIE, Paris (2023) – Flash Talk
42nd Interdisciplinary Meeting of Anti-Infectious Chemotherapy, RICAI, Paris (2022) - Invited Speaker
Congrès de Microbiologie Luminy: MicroOrganisms from Earth to Mankind, Marseille (2022) – Invited Speaker
Physical and Quantitative Approaches to Overcome Antibiotic Resistance, Sweden (2022) – Invited Speaker
IUBMB-FEBS-PABMB Congress, Portugal (2022) - Selected Oral Presentation
IUBMB–FEBS–PABMB Young Scientists' Forum, Portugal (2022) – Selected Oral Presentation
MycoDays, Lyon, France (2022) – Invited Speaker
Center of Infection & Immunity of Lille (CIIL), France (2022) – Invited Speaker
The Acid Fast Club - Winter Meeting (2022) – Selected Oral Presentation
Virtual European Respiratory Society (ERS) International Congress (2021)
Virtual 2nd Annual Symposium, New approaches to TB Drug discovery (2021)
Virtual UOS Imaging Workshop - Advanced Microscopy of Host-Pathogen Interactions (2021) – Speaker
Virtual UK Cellular Microbiology Network (2021) – Selected Oral Presentation
UK Cellular Microbiology Network, Sheffiled, UK (2020)
Congres Microbes, Paris, France (2019) – Invited Oral Presentation
Junior Scientist Microbiology Meeting of Marseille, France (2018) – Selected Oral Presentation
Mycoclub, Versailles-St Quentin en Yvelines,France (2017) - Poster
Junior Scientist Microbiology Meeting of Marseille, France (2017) – Selected Oral Presentation
Junior Scientist Microbiology Meeting of Marseille, France (2016) - Poster
EMBO Conference Tuberculosis, Paris, France (2016)
Junior Scientist Microbiology Meeting of Marseille, France (2015) - Poster
Mycoclub, Marseille, France (2015) – Poster

Other Contributions to the Research Community

Promoting Microbiology Research and Early Career Scientists Worldwide







Since 2021, I have had the opportunity to coordinate 2 Virtual Issues and 1 Special Issue as Junior Editor.
In addition to these collections, I have coordinated more than 10 first-person interviews, 3 Meeting reports and awarded 3 scientific prizes sponsored by Molecular Microbiology & FEBS Open Bio at conferences to promote micro-biology and its key actors.

Responding to Challenges and Helping Society

As a fully trained BSL-3 worker, in March 2020, I volunteered to join The CRICK COVID19 Consortium in response to the emerging COVID19 global pandemic. In response to this crisis, dozens of researchers from the Francis Crick Institute have teamed up and set up a high throughput RT-PCR COVID19 diagnostics assay in an academic environment to screen hundreds to thousands of healthcare workers and patients per day.

Aitken, Jim et al. "*Scalable and robust SARS-CoV-2 testing in an academic center*." ***Nature biotechnology*** vol. 38,8 (2020): 927-931. https://www.nature.com/articles/s41587-020-0588-y

Publications (30)

30 publications in peer-reviewed journals including **19 as (co)first, (co)last or (co)corresponding author.**

My complete bilbiography is also available on MyNCBI.

(1) Dargham, T., Aguilera-Correa, J. J., Avellan, R., Mallick, I., Celik, L., **Santucci, P**., Brasseur, G., Poncin, I., Point, V., Audebert, S., Camoin, L., Daher, W., Cavalier, J.-F., Kremer, L., & Canaan, S. (2025). A proteomic and functional view of intrabacterial lipid inclusion biogenesis in mycobacteria. ***mBio***, e0147524. Advance online publication. https://doi.org/10.1128/mbio.01475-24 Research Article

(2) Laudouze, J., Canaan, S., Gouzy*#, A., & **Santucci*#, P**. (2025). Unraveling Mycobacterium tuberculosis acid resistance and pH homeostasis mechanisms. ***FEBS letters***, 10.1002/1873-3468.70023. Advance online publication. https://doi.org/10.1002/1873-3468.70023 Review * Corresponding authors # Co-senior authors

(3) Laudouze, J., Francis, T., Forest, E., Mies, F., Bolla, J-M., Crauste, C., Canaan, S., Shlyonsky#*, V., **Santucci#*, P.**, & Cavalier#*, J-F. (2024). Anti-tubercular potential and pH-driven mode of action of salicylic acid derivatives. ***FEBS open bio***, 10.1002/2211-5463.13944. Advance online publication. https://doi.org/10.1002/2211-5463.13944 Research Article. * Corresponding authors # Co-senior authors

(4) Sarrazin, M., Poncin, I., Fourquet, P., Audebert, S., Camoin, L., Denis, Y., **Santucci, P.**, Spilling, C. D., Kremer, L., Moigne, V. L., Herrmann, J. L., Cavalier, J. F., & Canaan, S. (2024). Cyclophostin and Cyclipostins analogues counteract macrolide-induced resistance mediated by erm(41) in Mycobacterium abscessus. ***Journal of biomedical science***, 31(1), 103. https://doi.org/10.1186/s12929-024-01091-w Research Article.

(5) Laudouze, J., Point, V., Achache, W., Crauste, C., Canaan, S., & **Santucci, P**.* (2024). Fluorescence-based CRISPR interference system for controlled genetic repression and live single-cell imaging in mycobacteria. ***FEBS letters***, 10.1002/1873-3468.15071. Advance online publication. https://doi.org/10.1002/1873-3468.15071 Research Article. * Corresponding author

(6) **Santucci, P***. (2024). Molecular Microbiology of Microbiomes. ***Molecular microbiology***, 10.1111/mmi.15308. Advance online publication. https://doi.org/10.1111/mmi.15308 Editorial * Corresponding author

(7) Day, N. J., **Santucci, P.**, & Gutierrez, M. G. (2024). Host cell environments and antibiotic efficacy in tuberculosis. ***Trends in microbiology***, 32(3), 270–279. https://doi.org/10.1016/j.tim.2023.08.009 Review

(8) Dargham, T., Mallick, I., Kremer, L., **Santucci*#, P**., & Canaan*#, S. (2023). Intrabacterial lipid inclusion-associated proteins: A core machinery conserved from saprophyte Actinobacteria to the human pathogen Mycobacterium tuberculosis. ***FEBS open bio***, 10.1002/2211-5463.13721. Advance online publication. https://doi.org/10.1002/2211-5463.13721 Research Article * Corresponding author # Contributed equally

(9) Kandolo, O., Cherrak, Y., Filella-Merce, I., Le Guenno, H., Kosta, A., Espinosa, L., **Santucci, P**., Verthuy, C., Lebrun, R., Nilges, M., Pellarin, R., & Durand, E. (2023). Acinetobacter type VI secretion system comprises a non-canonical membrane complex. ***PLoS pathogens***, 19(9), e1011687. Advance online publication. https://doi.org/10.1371/journal.ppat.1011687 Research Article

(10) Pellegrino, E., Aylan, B., Bussi, C., Fearns, A., Bernard, E. M., Athanasiadi, N., **Santucci, P.**, Botella, L., & Gutierrez, M. G. (2023). Peroxisomal ROS control cytosolic Mycobacterium tuberculosis replication in human macrophages. ***The Journal of cell biology***, 222(12), e202303066. https://doi.org/10.1083/jcb.202303066 Research Article

(11) **Santucci*, P.** (2023). Meet early career researcher-Ismath Sadhir-Awardee of the molecular microbiology poster prize at the EMBO workshop bacterial morphogenesis, survival and virulence: Dynamic genomes and envelopes: 06-10 February 2023 | Goa, India. ***Molecular microbiology***, 120(1), 103–104. https://doi.org/10.1111/mmi.15111 Interview * Corresponding author

(12) Aylan, B#., Bernard, E.M#., Pellegrino, E#., Botella, L., Fearns A., Athanasiadi, N., Bussi, C., **Santucci, P**., & Gutierrez M.G. (2023) Differential control of cytosolic and phagosomal Mycobacterium tuberculosis replication by ATG7 and ATG14 in human macrophages. ***Nature Microbiology***, 8, 803–818 https://doi.org/10.1038/s41564-023-01335-9 Research Article # Contributed equally

(13) Le, T. T. H., Kellenberger, C., Boyer, M., **Santucci, P**., Flaugnatti, N., Cascales, E., Roussel, A., Canaan, S., Journet, L., & Cambillau, C. (2023). Activity and Crystal Structure of the Adherent-Invasive Escherichia

coli Tle3/Tli3 T6SS Effector/Immunity Complex Determined Using an AlphaFold2 Predicted Model. ***International journal of molecular sciences***, 24(2), 1740. https://doi.org/10.3390/ijms24021740 Research Article

(14) Aylan, B., Botella, L., Gutierrez*#, M.G. & **Santucci*#, P** (2022). High content quantitative imaging of Mycobacterium tuberculosis responses to acidic microenvironments within human macrophages. ***FEBS Open bio***, 10.1002/2211-5463.13537. Advance online publication. https://doi.org/10.1002/2211-5463.13537 Method Article * Corresponding author # Contributed equally

(15) Bussi, C., Heunis, T., Pellegrino, E., Bernard, E.M., Bah,N., Silva dos Santos, M., **Santucci, P**., Aylan, B., Rodgers, A., Fearns, A., Mitschke, J., Moore, C., MacRae, J.I., Greco, M., Reinheckel, T., Trost, M., & Gutierrez, M.G. (2022) Lysosomal damage drives mitochondrial proteome remodelling and reprograms macrophage immunometabolism. ***Nature Communications***, 13(1), 7338. https://doi.org/10.1038/s41467-022-34632-8 Research article

(16) **Santucci*, P.**, Aylan, B., Botella, L., Bernard, E. M., Bussi, C., Pellegrino, E., Athanasiadi, N., & Gutierrez*, M. G. (2022). Visualizing Pyrazinamide Action by Live Single-Cell Imaging of Phagosome Acidification and Mycobacterium tuberculosis pH Homeostasis. ***mBio***, 13(2), e0011722. https://doi.org/10.1128/mbio.00117-22 Research Article * Corresponding author

(17) **Santucci*, P.** (2022). Cell wall architecture and function in microbial physiology. ***Molecular microbiology***, 117(4), 715–716. https://doi.org/10.1111/mmi.14892 Editorial * Corresponding author

(18) **Santucci, P.**, Greenwood, D.J., Fearns, T., Chen K., Jiang, H., & Guiterrez, M.G. (2021). Intracellular localisation of Mycobacterium tuberculosis affects efficacy of the antibiotic pyrazinamide. ***Nature Communications***, 12(1), 3816. https://doi.org/10.1038/s41467-021-24127-3 Research Article

(19) Mallick#, I., **Santucci#, P.**, Poncin, I., Point, V., Kremer, L., Cavalier, J.F., & Canaan, S. (2021). Intrabacterial lipid inclusions in mycobacteria: unexpected key players in survival and pathogenesis?. ***FEMS microbiology reviews***, fuab029. Advance online publication. https://doi.org/10.1093/femsre/fuab029 Review # Contributed equally

(20) **Santucci*, P**. (2021). Intracellular pathogens, membrane damage and cytosolic access. ***Cellular microbiology***, *23*(4), e13296. https://doi.org/10.1111/cmi.13296 Editorial

(21) Bernard, E. M., Fearns, A., Bussi, C., **Santucci, P.**, Peddie, C. J., Lai, R. J., Collinson, L. M., & Gutierrez, M. G. (2020). M. tuberculosis infection of human iPSC-derived macrophages reveals complex membrane dynamics during xenophagy evasion. ***Journal of cell science***, 134(5), jcs252973. https://doi.org/10.1242/jcs.252973 Research Article

(22) **Santucci#, P.**, Johansen#, M. D., Point, V., Poncin, I., Viljoen, A., Cavalier, J. F., Kremer, L., & Canaan, S. (2019). Nitrogen deprivation induces triacylglycerol accumulation, drug tolerance and hypervirulence in mycobacteria. ***Scientific reports***, 9(1), 8667. https://doi.org/10.1038/s41598-019-45164-5 Research Article # Contributed equally

(23) **Santucci, P.**, Smichi, N., Diomandé, S., Poncin, I., Point, V., Gaussier, H., Cavalier, J. F., Kremer, L., & Canaan, S. (2019). Dissecting the membrane lipid binding properties and lipase activity of Mycobacterium tuberculosis LipY domains. ***The FEBS journal***, 286(16), 3164–3181. https://doi.org/10.1111/febs.14864 Research Article

(24) **Santucci#, P.**, Dedaki#, C., Athanasoulis, A., Gallorini, L., Munoz, A., Canaan, S., Cavalier, J. F., & Magrioti, V. (2019). Synthesis of Long-Chain β-Lactones and Their Antibacterial Activities against Pathogenic Mycobacteria. ***ChemMedChem***, 14(3), 349–358. https://doi.org/10.1002/cmdc.201800720 Research Article # Contributed equally

(25) **Santucci, P.**, Point, V., Poncin, I., Guy, A., Crauste, C., Serveau-Avesque, C., Galano, J. M., Spilling, C. D., Cavalier, J. F., & Canaan, S. (2018). LipG a bifunctional phospholipase/thioesterase involved in mycobacterial envelope remodeling. ***Bioscience reports***, 38(6), BSR20181953. https://doi.org/10.1042/BSR20181953 Research Article

(26) **Santucci, P.**, & Canaan, S. (2018). Lipid Droplets Breakdown: Adipose Triglyceride Lipase Leads the Way. ***Current protein & peptide science***, 19(11), 1131–1133. https://doi.org/10.2174/1389203719666180809143000 Commentary

(27) **Santucci, P.**, Diomandé, S., Poncin, I., Alibaud, L., Viljoen, A., Kremer, L., de Chastellier, C., & Canaan, S. (2018). Delineating the Physiological Roles of the PE and Catalytic Domains of LipY in Lipid Consumption in Mycobacterium-Infected Foamy Macrophages. ***Infection and immunity***, 86(9), e00394-18. https://doi.org/10.1128/IAI.00394-18 Research Article

(28) Nguyen[#], P. C., Madani[#], A., **Santucci, P.**, Martin, B. P., Paudel, R. R., Delattre, S., Herrmann, J. L., Spilling, C. D., Kremer, L., Canaan, S., & Cavalier, J. F. (2018). Cyclophostin and Cyclipostins analogues, new promising molecules to treat mycobacterial-related diseases. ***International journal of antimicrobial agents***, 51(4), 651–654. https://doi.org/10.1016/j.ijantimicag.2017.12.001 Research Article [#] Contributed equally

(29) Guerrini, V., Subbian, S., **Santucci, P.**, Canaan, S., Gennaro, M. L., & Pozzi, G. (2016). Experimental Evolution of Mycobacterium tuberculosis in Human Macrophages Results in Low-Frequency Mutations Not Associated with Selective Advantage. ***PloS one***, 11(12), e0167989. https://doi.org/10.1371/journal.pone.0167989 Research Article

(30) **Santucci[#], P.**, Bouzid[#], F., Smichi, N., Poncin, I., Kremer, L., De Chastellier, C., Drancourt, M., & Canaan, S. (2016). Experimental Models of Foamy Macrophages and Approaches for Dissecting the Mechanisms of Lipid Accumulation and Consumption during Dormancy and Reactivation of Tuberculosis. ***Frontiers in cellular and infection microbiology***, 6, 122. https://doi.org/10.3389/fcimb.2016.00122 Review [#] Contributed equally