

Pierre SANTUCCI PhD.

18 February 1993 (30 years old) - French 

CNRS Research Associate (CRCN) – Section 21

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University training and education

December 2018 - PhD degree in Biology, specialty Microbiology - Aix-Marseille Université, France.

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

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

June 2012 - University degree in Technology (DUT) - Université du Sud-Toulon-Var, France.

Research positions and experience

Since November 2022 - Principal Investigator (CRCN - CNRS)

LISM UMR7255, CNRS-Aix-Marseille Université, France.

April 2022 - October 2022 - ERS Long-Term Research Fellow

LISM UMR7255, CNRS-Aix-Marseille Université, France.

April 2019 - March 2022 – FEBS - Marie Skłodowska-Curie Action Post-Doctoral Fellow

Host-Pathogen Interactions in Tuberculosis Laboratory, The Francis Crick Institute, London, United-Kingdom.

September 2014 - December 2018 - Master and PhD degree candidate

Lipolysis and Bacterial Pathogenicity Group, LISM UMR7255, CNRS-Aix-Marseille Université, France.

Research keywords

Mycobacterium tuberculosis, Mycobacterial pathogenesis, bacterial genetics, CRISPRi, experimental evolution, lipases and phospholipases, lipid metabolism, bacterial cell-wall, antibiotic mode of action, pyrazinamide, antimicrobial resistance, drug discovery, host-pathogen interactions, macrophages and intracellular trafficking, subcellular niches, intracellular pharmacokinetics.

Research funding as Principal Investigator

Laureate of a IHU-Mediterranée Infection grant with Dr Stéphane Canaan & Dr Céline Crauste (2023)

Recipient of the CNRS-INSB starting grant for junior principal investigator (2023)

Laureate of an initiation research grant from the ANRS/MIE Agency (2023)

Laureate of an initiation research grant from the IM2B-A*Midex Foundation (2023)

Research fellowships

Recipient of an European Respiratory Society (ERS) Long-Term Research Fellowship (2022)

Recipient of a Marie Skłodowska-Curie Actions Individual Fellowship (2020)

Recipient of a FEBS Long-Term Post-Doctoral Fellowship (2019)

Recipient of a MESRI PhD Fellowship (2015)

Scientific awards

Laureate of the SFBBM-FEBS Early Career Researcher Travel Grant for the FEBS Congress 2023 (2023)

Recipient of the RIPEC C indemnity scheme for quality of activities & professional commitment (2022)

Laureate of the SFBBM Early Career Researcher Award “Article of the Month” (2022)

2nd best oral communication award at the UK Cellular Microbiology Network (2021)

National Thesis Prize in Microbiology awarded by the French Society of Microbiology (SFM) (2019)

Best oral communication award at Junior Scientist Microbiology Meeting of Marseille (JSM3) (2018)

Supervising activities

2024 – 2025 Co-supervision of a Post-Doc (to be hired) with Dr Stéphane Canaan & Dr Céline Crauste

2023 – 2026 Co-Supervision of Ms. Janis Laudouze (PhD Student) with Dr Stéphane Canaan

2023 – Supervision of Ms. Janis Laudouze (Master II) and Mr. Bastien Berton (BTEC)

2020 – 2022 Co-supervision of student with Dr Maximiliano Gutierrez

2015 – 2018 Co-supervision of 7 undergraduate students with Dr Stéphane Canaan

2015 – 2018 Biochemistry lectures for undergraduate students (64 hours/year) at Aix-Marseille Université.

Teaching activities

2023 – 2024 Biochemistry & Cell Biology lectures (36 hours) at Ecole Centrale de Marseille.

2022 – Scientific edition lectures for Master students (2 hours) at Aix-Marseille Université.

2022 – Mycobacterial Pathogenesis lectures for Master students (20 hours) at Aix-Marseille Université.

2015 – 2018 Biochemistry lectures for undergraduate students (64 hours/year) at Aix-Marseille Université.

Learning societies memberships and activities

- TBnet & NTMnet Member (2023 –)
- European Respiratory Society (ERS) (2020 –)
- European Society of Clinical Microbiology and Infectious Diseases (ESCMID) (2020 –)
- French Society of Microbiology (SFM) (2015 –)
- French Society of Biochemistry and Molecular Biology (SFBBM) (2019 –)
 - SFBBM/FEBS Fellows Corresponding ([FEBS News p.9](#) – [SFBBM News p.10](#))

Editorial and reviewing activities

- Member of the European Respiratory Society (ERS) College of Expert (2023 –)
- Junior Editor at *Cellular Microbiology* (2020 – 2021) & *Molecular Microbiology* (2021 –)
- Official reviewer for scientific peer-reviewed journals

PloS One, Microbiology, Bioscience Reports, Cellular Microbiology, Molecular Microbiology, Frontiers in Immunology, FEBS Open bio, mBio, Scientific Reports, Research in Microbiology (2018 –).

(Inter)National conferences and workshops

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](#)

Press Releases and Features

- (1) “*Celebrating the FEBS Fellows*” [New issue](#) available at FEBS OpenBio (2023)
- (2) “*Highlight*” on Correlative Microscopy and anti-TB drugs on [Microscopy Australia](#) (2023)
- (3) “At a glance: introduction to FEBS Long-Term Fellows” available at [FEBS Network](#) (2022)
- (4) Junior Editor [Interview](#) in *Molecular Microbiology* (2022)
- (5) “*Results in Brief*” of the H2020 project “*SpaTime-AnTB*” on the [EU CORDIS website](#) (2022)
- (6) “*Highlight*” on pyrazinamide mode of action in macrophages on the [Crick website](#) (2022)
- (7) “*Highlight*” on *M. tuberculosis* localisation and pyrazinamide efficacy on the [Crick website](#) (2021)
- (8) [Nature Portfolio Microbiology](#) “*Behind the Paper*” on Santucci *et al.* *Nat Comms* (2021)

Publications (20)

20 publications in peer-reviewed journals including **14 as first, last or corresponding author**. My complete bibliography is also available on [MyNCBI](#).

- (1) **Santucci*, P.** 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: 06-10 February 2023 | Goa, India. *Mol Microbiol.* 2023;10.1111/mmi.15111. [doi:10.1111/mmi.15111](https://doi.org/10.1111/mmi.15111) [Interview](#)
- (2) Aylan, B[#], Bernard, E.M[#], Pellegrino, E[#], Botella, L., Fearn 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
- (3) Le, T. T. H., Kellenberger, C., Boyer, M., **Santucci, P.**, Flaughnatti, 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](#)
- (4) 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
- (5) Bussi, C., Heunis, T., Pellegrino, E., Bernard, E.M., Bah,N., Silva dos Santos, M., **Santucci, P.**, Aylan, B., Rodgers, A., Fearn, 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](#)
- (6) **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
- (7) **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
- (8) **Santucci, P.**, Greenwood, D.J., Fearn, T., Chen K., Jiang, H., & Gutierrez, 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](#)
- (9) 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
- (10) **Santucci*, P.** (2020). Intracellular pathogens, membrane damage and cytosolic access. *Cellular microbiology*, e13296. Advance online publication. <https://doi.org/10.1111/cmi.13296> [Editorial](#) * Corresponding author
- (11) Bernard, E. M., Fearn, 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](#)
- (12) **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
- (13) **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](#)
- (14) **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

- (15) **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
- (16) **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
- (17) **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
- (18) 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 Cyclopostins 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
- (19) 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
- (20) **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