



Thelma AKANCHISE, PhD

Scientist in nanomedicine and neurobiology, specializing in lipid nanoparticles for neuroprotection and neuronal regeneration

CONTACT

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EDUCATION

2022 – 2025

UNIVERSITÉ PARIS-SACLAY

- PHD in Pharmacotechnique and biopharmacie

2020 – 2022

UNIVERSITÉ PARIS-SACLAY

- MSc. Development of drugs and health products

2015 – 2019

KWAME NKURUMAH UNIVERSITY
OF SCIENCE AND TECHNOLOGY

- BSc. Chemistry (Analytical)

LANGUAGES

- English (Fluent)
- French (Intermediate)

MAIN RESEARCH AREAS

- Nanomedicine and lipid nanoparticles
- Neuroprotection and neurodegenerative diseases
- Oxidative stress, neuroinflammation, and mitochondrial function

RESEARCH EXPERIENCE

Institut Galien Paris-Saclay

10/2022 – 12/2025

Pharmaceutical Scientist – Drug Development & Biopharmaceutics

- Conducted in vitro studies in neuronal cells under oxidative stress and neuroinflammation.
- Evaluated cellular responses in SH-SY5Y cells using ELISA, flow cytometry, and viability assays
- Evaluated therapeutic efficacy of nanomaterials via intranasal route in in vivo neuroinflammation and Parkinson's disease models
- Assessed biodistribution of peptide functionalized LNPs in mice
- Performed behavioral and histological analyses to evaluate neurodegeneration
- Analyzed molecular and inflammatory markers (TH, α -synuclein, cytokines)
- Performed transcriptomic analysis (RNA-seq) on brain tissues
- Developed peptide functionalized LNPs and performed physicochemical characterization (SAXS, DLS, UPLC)

INTERNATIONAL RESEARCH VISIT

PHC Štefánik Program (Franco-Slovak Hubert Curien Partnership), **Bratislava, SLOVAKIA.**

Applied stopped-flow spectroscopy to determine radical-quenching kinetics and evaluate pH-dependent antioxidant activity of lipid nanoparticles (September 29 – October 3, 2025)

École Thématique du CNRS "BIOMIM" 2024 – Biomimétisme, Bio-inspiration et Santé, Île d'Oléron, France, October 6–11, 2024.

ULLA Summer School, Leiden, from June 29th until July 6th, 2024.

ECIS Summer School 2023 – European Colloid and Interface Society (ECIS), August 8 – September 1, 2023.

PUBLICATIONS

First author/co-author

Akanchise, T.; Luo, F.; Angelov, B.; Deng, Y.; Fujino, T.; Angelova, A. (2026) Peptide-Targeted Cubosome and Hexosome Nanoassemblies Mitigate Mitochondrial Dysfunction in a MitoPark Model. *Signal Transduction and Targeted Therapy. Accepted.*

Akanchise, T.; Luo, F.; Angelov, B.; Deng, Y.; ... Angelova, A. (2026) Designed Liquid Crystalline Nanoassemblies From Clinically Validated Polyunsaturated Fatty Acids for Combined Antioxidant, Anti-Apoptotic, and Neurotrophic Treatments. *Advanced Healthcare Materials*, e05595. <https://doi.org/10.1002/adhm.202505595>

Akanchise, T.; Luo, F.; Angelov, B.; Deng, Y.; Manna, G.; ... Angelova, A. (2026) Rapid Structural Transformation of Ionizable Lipid Nanoparticles Involving Omega-3 Polyunsaturated Fatty Acids Enhances Antioxidant Defense and Mitochondrial Proteins Activity in pH-Responsive Drug Delivery. *Journal of Colloid and Interface Science*, 704:139420. <https://doi.org/10.1016/j.jcis.2025.139420>

FUNDING

French Government Scholarship (Campus France – Ministry of Foreign Affairs, réf. 146100Z), FRANCE.

€1,588/month, Université Paris-Saclay (2023–2024).

Ghana Scholarship Secretariat (réf. national award), GHANA. €38,160 (doctoral funding in France).

PHC Štefánik Program (Franco–Slovak Hubert Curien Partnership), Bratislava, SLOVAKIA (2025).

IDEX Scholarship (Initiative d'Excellence, réf. Université Paris-Saclay), FRANCE. €10,000 (2020–2022).

VULGARISATION

Science dissemination in nanomedicine:

3 outreach publications (Scoop.it)
<https://sco.lt/7x17D6>
<https://sco.lt/5gcDOC>
<https://sco.lt/8MXxi4>

7 conference and academic presentations
1 exchanges
3 summer schools

Review activity:

Advances in Medical Sciences (4)
Environmental Pollution (2)
Phytomedicine (1)

LEISURE

- Hiking
- Tennis
- Shopping
- cooking

For more information

<https://www.researchgate.net/profile/Thelma-Akanchise/research>

www.linkedin.com/in/thelma-akanchise-174406106

PUBLICATIONS cont...

Luo, F.; **Akanchise, T.**; Angelov, B.; ... Angelova, A. (2026) In Vitro Models of Oxidative Stress, Mitochondrial Dysfunction, and Inflammation for Evaluation of Neuroprotective Biomaterials. *Journal of Materials Chemistry B*. <https://doi.org/10.1039/D6TB00226A>

Akanchise, T.; Angelov, B.; Deng, Y.; Fujino, T.; ... Angelova, A. (2025) Nanostructuring and Antioxidant Activity of Nanotherapeutics Designed by Self-Assembly of Natural Lipids and Phytochemicals. *ACS Biomaterials Science and Engineering*. <https://doi.org/10.1021/acsbomaterials.5c00006>

Akanchise, T.; Angelov, B.; Angelova, A. (2024) Nanomedicine-mediated Recovery of Antioxidant Glutathione Peroxidase Activity after Oxidative-stress Cellular Damage: Insights for Neurological Long COVID. *Journal of Medical Virology*, 96:e29680. <https://doi.org/10.1002/jmv.29680>

Akanchise, T.; Angelova, A. (2023) Ginkgo Biloba and Long COVID: In Vivo and In Vitro Models for the Evaluation of Nanotherapeutic Efficacy. *Pharmaceutics*, 15:1562. <https://doi.org/10.3390/pharmaceutics15051562>

Akanchise, T.; Angelova, A. (2023) Potential of Nano-Antioxidants and Nanomedicine for Recovery from Neurological Disorders Linked to Long COVID Syndrome. *Antioxidants*, 12:393. <https://doi.org/10.3390/antiox12020393>

Akanchise, T.; Angelov, B.; Angelova, A. (2026) Multifunctional Liquid-Crystalline Nanostructures: From Self-Assembly to Targeted Biomedical Applications. Springer. Accepted.

CONFERENCES AND PRESENTATIONS

14th World Meeting on Pharmaceutics, Biopharmaceutics and Pharmaceutical Technology (PBP World Meeting), Vienna, 20 March 2024. Antioxidant-Based Nanoparticles Protect Against Intracellular Reactive Oxygen Species Under Neurological Conditions.

Doctoral and Post-Doctoral Day, École Normale Supérieure Paris-Saclay, 17 June 2024. Nanomedicine-Mediated Recovery of Antioxidant Glutathione Peroxidase Activity After Oxidative-Stress Cellular Damage.

GDR BIOMIM et Santé "Biomimétisme et Bioinspiration", Saint-Pierre d'Oléron, 6 October 2024. Engineering Self-Assembled Lyotropic Liquid Crystalline Nanostructures for Enhanced Drug Delivery Applications.

Journées SAXS/SANS, L'Orme des Merisiers, 27 November 2024. Engineering Self-Assembled Lyotropic Liquid Crystalline Nanostructures for Enhanced Drug Delivery Applications.

CRS Annual Meeting & Exposition, Philadelphia, USA, 14–18 July 2025. ω -3 PUFA Nanoparticles Attenuate Oxidative Stress and Restore Mitochondrial Function via Antioxidant Payload Delivery.

ULLA Summer School, Leiden Academic Centre for Drug Research (LACDR), Leiden University, 29 June – 6 July 2024. Nanomedicine-Mediated Recovery of Antioxidant Glutathione Peroxidase Activity After Oxidative-Stress Cellular Damage.

4th European Conference on Pharmaceutics, Marseille, 20–21 March 2023. Nanotechnology for Neurological Disorders After Long COVID Syndrome.

Journée Scientifique OI HEALTHI, Orsay, 6 July 2023. Nanotechnology Strategy Using Lipid Nanocarriers for Recovery from Neurological Disorders After Long COVID Syndrome.

XXIIe Journée de l'École Doctorale Innovation Thérapeutique, Orsay, June 2023. Nanotechnology for Neurological Disorders After Long COVID Syndrome.