

Dima Ghannoum, PhD

Cancer Cell Biologist | Research Project Lead | PhD in Life & Health Sciences

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PROFESSIONAL SUMMARY

Cell and molecular biologist (PhD) with 10+ years of academic and translational research experience in oncology, stem cell biology and osteoarticular biology. Currently Researcher and Project Lead in the Sensitivity of Cancers to Treatment (SCaT) team at the Institut de Cancérologie de l'Ouest (ICO, Unicancer). Specialist in advanced in vitro models, including 3D cell culture and tumour-on-chip models of triple-negative breast cancer, mesenchymal stromal/stem cell (MSC) expansion and senescence, and bioreactor-based cell culture. Author of peer-reviewed publications in Cell Death & Disease and Biotechnology & Bioengineering, with oral and poster presentations at national and international conferences. Experienced in project coordination, multidisciplinary and European (INTERREG) collaboration, scientific writing and university teaching.

CORE SKILLS

Research areas: Oncology; Breast Cancer; Triple-Negative Breast Cancer (TNBC); Tumour Microenvironment; Tumour-Immune (Monocyte) Interactions; Treatment Sensitivity; Cellular Senescence; Stem Cell Biology; Cell Therapy; Osteoarticular & Cartilage Biology; Proteoglycans & Glycosaminoglycans

Models & techniques: 3D Cell Culture; Tumour-on-Chip / Organ-on-Chip Models; Primary & Mesenchymal Stromal/Stem Cell (MSC) Culture; Wharton's Jelly MSC Expansion; Stirred Bioreactor & Perfusion Culture; Cell Quality Parameters; Nuclear Morphomics; Cell & Molecular Biology Techniques; Experimental Design; Data Analysis

Professional: Research Project Management; Scientific Writing & Peer-Reviewed Publication; Oral Scientific Communication; Multidisciplinary & International Collaboration; University Teaching (Tutorials & Practical Classes)

PROFESSIONAL EXPERIENCE

Researcher – Project Lead

2023 – Present

Institut de Cancérologie de l'Ouest (ICO, Unicancer) – SCaT Team (Sensitivity of Cancers to Treatment), Angers, France

- Lead a research project in cancer cell biology within the SCaT team, investigating the sensitivity of cancers to treatment.
- Develop 3D cell culture models of triple-negative breast cancer (TNBC) to study tumour-monocyte interactions in the tumour microenvironment.
- Contribute to nuclear morphomics studies of gene-environment interactions in breast cancer development.
- Present results at national scientific meetings (oral presentations: SoMM 2024, Nantes; Cancéropôle Grand Ouest 2023, Vannes).

Postdoctoral Researcher

2022 – 2023

Institut de Cancérologie de l'Ouest (ICO, Unicancer) – SCaT Team, Angers, France

- Established tumour-on-chip models (TSP3 project) to reproduce tumour behaviour in vitro for treatment-response studies.
- Designed and optimised experimental protocols for advanced in vitro cancer models.

Postdoctoral Researcher

2019 – 2021

IMoPA Laboratory (Molecular Engineering and Articular Pathophysiology, CNRS – Université de Lorraine) with LRGP, Nancy, France

- Studied and characterised senescence of mesenchymal stromal/stem cells (MSCs) during in vitro expansion for cell therapy, within a European INTERREG project.
- Defined cell quality parameters for therapeutic-grade fetal MSCs (poster, ISCT 2021, Paris).
- Collaborated with the LRGP chemical engineering laboratory on a new perfusion mode for Wharton's Jelly MSC expansion in a stirred, online-monitored bioreactor (Biotechnology & Bioengineering, 2021).

Teaching Assistant – Animal Biology

2016

Faculty of Science and Technology, Université de Lorraine, Nancy, France

- Delivered tutorials and practical laboratory classes in animal biology to first-year undergraduate (Licence 1) students.

EDUCATION

PhD in Life and Health Sciences Université de Lorraine, Nancy, France Thesis: Physiological and pathophysiological role of Xylosyltransferase I in osteoarticular development.	2015 – 2018
Master 2 – Applied Biotechnology Lebanese University, Tripoli, Lebanon	2013 – 2014
Master 1 – Cellular and Molecular Biology Lebanese University, Tripoli, Lebanon	2012 – 2013
Bachelor (Licence) – Life and Earth Sciences Lebanese University, Tripoli, Lebanon	2010 – 2012

PUBLICATIONS & PRESENTATIONS

Peer-reviewed articles

1. Taieb M, **Ghannoum D**, Barré L, Ouzzine M. *Xylosyltransferase I mediates the synthesis of proteoglycans with long glycosaminoglycan chains and controls chondrocyte hypertrophy and collagen fibers organization of in the growth plate.* Cell Death & Disease. 2023;14(6):355.
2. Sion C, **Ghannoum D**, Ebel B, Gallo F, de Isla N, Guedon E, Chevalot I, Olmos E. *A new perfusion mode of culture for WJ-MSCs expansion in a stirred and online monitored bioreactor.* Biotechnology & Bioengineering. 2021;118(11):4453–4464.

Conference presentations

1. **Ghannoum D**, Pérreau L, Sanchez C, Huet E, Heymann MF, Lasla H, Jézéquel P, Lelièvre SA. *Shedding light on tumor-monocyte interactions with 3D cell culture models of triple negative breast cancers.* Oral presentation, 7th Symposium of the Clubs Macrophages Network (SoMM 2024), October 2024, Nantes, France.
2. Chittiboyina S, Cosby C, Sobngwi A, Charrier L, Hamza L, Jézéquel P, **Ghannoum D**, Lelièvre SA. *Morphomique nucléaire appliquée à l'étude de la relation gène-environnement dans le développement du cancer du sein.* Oral presentation, 17th Cancéropôle Grand Ouest Days, June 2023, Vannes, France.
3. **Ghannoum D**, Roeder E, El Ouafy M, Cauchois G, Charif N, de Isla N. *Evaluation of fetal mesenchymal stromal/stem cells senescence during in vitro amplification for therapeutic purpose: choice of cell quality parameters.* Poster presentation, International Society for Cell & Gene Therapy (ISCT) Annual Meeting, July 2021, Paris, France.