Emmanuel Griessinger

Onco-Immuno-hematology/Metabolism/Cell-based/In-Vivo assay Expert

• PERSONAL INFORMATIONS

Full name: GRIESSINGER Emmanuel
Date of birth: 24 February1978
Nationality: French

Personal web site: https://www.linkedin.com/in/emmanuel-griessinger-a0676415
Publication profiles: https://scholar.google.com/citations?user=oYrCYvIAAAAJ
Researcher identifier: https://orcid.org/ 0000-0001-7529-4187

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• EDUCATION AND TRAINING

2024 – 2028	Qualification n°24266276326 Lecturer Section 66-Physiology.
2023 – 2027	Qualification n°23264276326 Lecturer Section 64-Biochemistry and molecular biology
2023 – 2027	Qualification n°23265276326 Lecturer Section 65-Cellular biology.
2007	PhD in cellular and molecular biology, viva examination passed with honours
	University of Nice Sophia Antipolis, France.2003 Postgraduate diploma taken before completing a PhD rank 6th/42
	University of Nice Sophia Antipolis (UNSA), France.
2002	Master of Biochemistry rank 5th/ 72, UNSA, France.
2010 – 2019	**Animal licenses**, in UK, France, Netherlands, Felasa Modules 1, 2, 3.1, 3.2, 4, 5, 6.1, 7, 8, 9, 10, 11, 20, 21, 22.

• CURRENT ACTIVITY

2022 –2024 **Consultant Pharmaceutical industry,** BiVictriX Therapeutics Ltd Alderley Edge, UK.

• PREVIOUS POSITIONS

2019 –2022	**Senior Scientist/PI**, University Medical Center Groningen, The Netherlands.
2016 – 2019	**Senior scientist/Junior PI**, Mediterranean Center Medicine Molecular, Nice, France
2011 – 2016	**Postdoc**, INSERM U1065, Team 4: Inflammation, Cancer Stem Cells, Nice, France
2007 – 2011	**Junior Postdoc,** Hematopoietic Stem Cell Lab, Cancer Research UK (CRUK)-London, UK.

• FELLOWSHIPS AND AWARDS (Non-profit organization)

2019 – 2022	Grant ERA PerMed /European Commission, ERA-PERMED AML-PM project 676583, Project Partners: Netherlands, Germany, Norway, Canada, 4.2M €
2016 – 2019	Grant from la Fondation de France, 92 000 €
2011 – 2016	Post-doctoral Fellowship from The French National Research Agency, 90 000 €
2013 – 2014	Cancéropôle-Conseil Régional PACA, France, 2013: Innovator and federator research project grant awarded Research engineer (24 months) - 90 000 € + Hypoxia incubator 12 000 €.
2010 – 2011	Cancer Research UK, 12 months Post-doctoral fellowship extension awarded, 50 000 €
2007 – 2010	Cancer Research UK, 36 months Post-doctoral fellowship awarded after writing application and oral selection London Research Institute steering Committee (2007) 150 000 €
2006 – 2007	Association for Cancer Research, France, 12 months PhD extension scholarship (2006), 30 000 €
2003 – 2006	Ministry of Research, France, 3 years PhD scholarship merit Award (2003) 80 000 €

• SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS

2019 – 2022	PhDs (n=2), University of Groningen, the Netherlands, University of São Paulo, Brazil
2011 – 2019	Superior technicians (n=3) and Engineers (n=2) Master Students (n=3) PhD (n=1) Postdocs (n=2), University of Nice Sophia Antipolis
2010 – 2013	PhD (n=1), Université Sorbonne Paris Cité Paris Diderot
2007 – 2011	Master Students (n=4) PhDs (n=4) Postdocs (n=3), Cancer Research UK, University College Of London

• ORGANISATION OF SCIENTIFIC MEETINGS

2017	MeetOchondrie network workshop mitochondria transfer May Hossegor, 120 participants, France
2010	2nd UK Cancer Stem cell Forum Brighton, 50 participants UK
2009	Helleno-Franco-American meeting at DNAlogy, 10 participants, Athens, Greece

• INSTITUTIONAL RESPONSIBILITIES

2019 – 2022 Bioluminescence drug screening platform manager, UMCG, The Netherlands.
2016 – 2018 Hypoxia Platform Manager, C3M, Nice, France.
2012 – 2018 Referent platform cytometry, C3M, Nice, France
2011 – 2016 Scientific animation, team 4 Mediterranean Center Medicine Molecular, C3M, Nice, France.
2009 – 2011 Co-Organizer of the External Visitor Seminar, Cancer Research UK London
2008 – 2011 Laboratory manager for cytokines, flow cytometry antibodies, serum, and special hematopoietic stem cell culture media (stock management, controls, quality, reception, aliquoting), CRUK-Hematopoietic Stem Cell Laboratory, London, UK.
2004 – 2007 Institute Cell Bank manager, INSERM U 526, Nice, France.

• REVIEWING FOR INTERNATIONAL PEER-REVIEWED JOURNALS

2022 – today Reviewer for Experimental Hematology, Journal edited by Connie Eaves
2021 – today Reviewer for Elsevier Biochemistry Books Program
2018 – today Reviewer for Haematologica, Journal edited by Jan Cools, published by Ferrata Storti Foundation
2016 – today Reviewer for Cancer Research, edited by George C. Prendergast, published by the AACR
2016 - today Reviewer for Blood, edited by Bob löwenberg, published by ASH
2011 – today Reviewer for Stem Cells, Journal edited by Jan A. Nolta, published by Wiley Online Library

• REVIEWING FOR RESEARCH FUNDING BODIES

2019 – today Reviewer for the Swiss Cancer League
2019 – today Reviewer for the Worldwide Cancer Research
2018 – today Reviewer for the Marsden Fund New Zealand Royal Society Te Apārangi
2019 – today Reviewer for the Czech Science Foundation

• MEMBERSHIPS OF SCIENTIFIC SOCIETIES

2016 - today Member of the "MeetOchondrie network"
2015 - 2016 Member of the Jury of the Doctoral School of the University of Nice Sophia Antipolis, France
2009 – today CoFounding Member of DNAlogy, Center for Genetics and DNA Identification, Athens, Greece.

• MAJOR COLLABORATIONS -CONSULTING

- Advisor and experimentator consultant for BIVICTRIX LIMITED UK
- Pr Aaron D SCHIMMER, MD, PhD, FRCPC (Princess Margaret Cancer Centre, Toronto, Canada). Clonal and molecular heterogeneity of Acute Erythroid Leukemia patient samples. (2019)
- Pr. Michael TEITELL, UCLA, US. Characterization of a new mechanism of chemoresistance dependent on the microenvironment
- Pr. Dominique BONNET, CRUK London, UK. Patient samples xenograft in immunodeficient mice.
- Dr. Jeri NEUZIL, Prague, Czech Republic, and Mickael BERRIDGE, Wellington, New Zealand, Model of mito-DsRed mice To study mitochondrial transfer between bone marrow stromal cells and leukemic stem cells.
- Dr Douglas R. GREEN, Memphis, US. Establishment of stromal cells with mitochondria labeled with the fluorescent protein OMI/HTRA2-mcherry (2014)
- Dimitrios KLEFTOGIANNIS Bergen, Norway. Bioinformatics, Machine Learning, Cancer Genomics, NGS data analysis University of Bergen, Norway.
- Drs Jean-Emmanuel SARRY and Christian RECHER Cancer Research Center of Toulouse, France. Microenvironment-dependent metabolic adaptation of AML during chemotherapy.
- Dr. CHICHE J. Mediterranean Center Medicine Molecular, Nice, France. Energy metabolism of leukemic cells.

• CAREER BREAKS

2018: Paternity leave, Third child (6 months)
2008: Paternity leave, second child (3 months)
2003: Paternity leave, first child (1 months).

Track-record

• RESEARCH EXPERIENCE AND MAJOR ACHIEVEMENTS

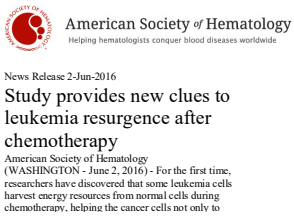
I studied Cell and Molecular Biology in France. I earned my PhD at the Nice Sophia Antipolis University, where I **tested the therapeutical efficacy** of a NF-κB pathway inhibitor to target the cancer stem cells in Acute Myeloid Leukemia. I joined the Cancer Research UK in London under the **mentorship of Pr Dominique Bonnet who pioneered the field Cancer Stem Cells (CSCs).** As a project leader I identified a new independent prognostic factor for AML patient, as a team manager, I discovered **a new mechanism of drug resistance for the CSCs, consisting of the transfer of mitochondria** from the tumor microenvironment to the leukemic cells and more recently I evidenced that CSC relying on mitochondrial metabolism have a particular lipidome which makes their membrane more fragile to cold exposure. Since 2022, I have been carrying out consulting activity with the company BiVictriX Therapeutics Ltd., based in the United Kingdom, which is developing an immunotherapy based on a bispecific antibody (Antibody-drug conjugate: ADC) on leukemic samples from patients coexpressing CD7 and CD33.

• PUBLICATIONS RECORD AND CITATIONS STATISTIQUES

I have published **36 articles** in international peer-reviewed journals and **2 patents**. I have co-written **5 reviews** and **1 chapter of Encyclopedia**. In total, my publications have **4530 citations in Google Scholar**. **H-Index: 26; H-Index-10: 30** in Google Scholar. https://scholar.google.com/citations?view_op=list_works&hl=en&hl=en&user=oYrCYvIAAAAJ&sortby=pubdate

SELECTED ACHIEVEMENTS

First article reporting an ex-vivo method equivalent to the xenograft model allowing study the leukemic stem cells. (2014)



Press release from the American Association for the Advancement of Science AAAS Blood newsroom (2016)

Press release from the ABC spanish national newspaper (2016)

Invitation by Cell-Press review Trends in Cancer to produce of review related to Mitochondria Transfer (2017)

First Study establishing the expansion rate of the leukemic progenitor as a new pathophysiological criteria and prognostic factor (2016).

Patent to distinguish measure and kill OXPHOS versus GLYCOLYTIC cells (2020)

Guest Seminar Invitation at the Instituto do Câncer do Estado de São Paulo (2022).

Press release from the American Association for Cancer Research In the Spotlight August 01 2023: "Turning Down the Temperature on Leukemia Stem Cells" by Courtney L. Jones.

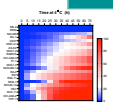
• LECTURE FOR SCIENTIFIC SOCIETY AND UNIVERSITY AND SCHOOL OF MEDECINE

- **Center for Cell-based Therapy, Regional Blood Center of Ribeirão Preto University of São Paulo Brazil.** *"OxPhos-driven leukemic stem cells are uniquely sensitive to cold exposure"* May 2022 Ribeirão Preto, Brazil.
- ***MeetOchondrie network* May 2017 Hossegor, France.** Special keynote orator in the workshop entitled "move your mito (mitochondria transfer)"
- **ESH 2nd Scientific Workshop on The Tumour Environment in Haematological Malignancies. Berlin, Germany – April 7-9, 2017** *"Mitochondrial transfer"*
- **37th Congress of the French Society of Haematology- Paris, France - April 15-17, 2017** **"***Chemotherapy stimulates protective transfer of mitochondria from bone marrow stromal cells to acute myeloid leukemia cells***"**
- **Charles University Faculty of Science, Prague Czech Republic. Sept 2016. Milan Hašek Auditorium at Institute of Molecular Genetics of the Czechoslovak Academy of Sciences.** *"Protective mitochondrial transfer"*
- **32ème Annual Congress of the French Society of Hematology Avril *2015, Paris La Défense.*** *The ex vivo frequency and dynamic behavior of Leukemic Stem Cells predicts the clinical outcome of patients with Acute Myeloid Leukemia*
- **European School of Haematology- Cancer Stem Cells: Malignant Stem Cells and their microenvironment. Second Scientific Workshop. Mandelieu, France - April 25-27, 2013** *Investigating and monitoring drug-resistant human Acute Myeloid leukemia initiating cells in a niche-based culture system.*

• LECTURE FOR SCIENTIFIC SOCIETY AND UNIVERSITY AND SCHOOL OF MEDECINE

- **Instituto do Câncer do Estado de São Paulo ICESP. May 2022 São Paulo, Brazil.** *""OxPhos-driven leukemic stem cells are uniquely sensitive to cold exposure"*
- **Seminar EVOTEC-SANOFI Toulouse, France, September 2016.** Protective mitochondrial transfer from bone marrow stromal to Leukemia Initiating Cells during chemotherapy.
- **External seminar of Cancer Research Center of Toulouse UMR1037-INSERM Toulouse France, October 2012.** Ex vivo maintenance human normal and leukemia-initiating cells (LICs): Implications for studying chemoresistant LICs

• SELECTED PUBLICATIONS



• Method of measuring and targeting metabolism depending on oxidative phosphorylation. **Griessinger E** and Griessinger M. France Patent May 2019 extention EPO PCT/EP2020/062717 may2020.

Patented method to distinguish measure and kill OXPHOS versus GLYCOLYTIC cells. The method of the invention is novel because it is not measuring oxygen nor lactate nor any metabolic substrate.

• Culture of leukemia initiating cells. **Griessinger E** and Bonnet D. UK Patent Application No. GB1303491.3, 2013.

Patented system of in vitro culture and a method for functional quantification of human Leukemic Stem Cells of Acute Myeloid Leukemia.

• Acute myeloid leukemia xenograft success prediction: saving time. **Griessinger E**, (…), Gribben J, Bonnet D. Exp Hematol. 2018.
Google Scholar citations: 17

This paper reports a novel method to predict the xenogarft success and will help to reduce the unnecessary death of mice recipient injected with human sample doomed to engraftment failure

• Protective mitochondrial transfer from bone marrow stromal cells to acute myeloid leukemic cells during chemotherapy. Moschoi R, (…), Peyron JF and **Griessinger E.**
Blood. 2016. Impact Factor: 22.36
Google Scholar citations: **328**

First study identifying the horizontal transfer of mitochondria between leukemic stem cells and their microenvironnement as a novel drug resistance mechanism.

• Frequency and dynamics of leukemia-initiating cells during short-term ex vivo culture informs outcomes in acute myeloid leukemia patients. **Griessinger E**, (…), Gribben J, Peyron JF and Bonnet D.
Cancer Res. 2016. Impact Factor: 9.3
Google Scholar citations: **27**

Study establishing the expansion rate of the leukemic progenitor as a new pathophysiological criterion and an independent prognostic factor.

• A niche-like culture system allowing the maintenance of primary human acute myeloid leukemia initiating cells: A new tool to decipher their chemo-resistance and self-renewal mechanisms. **Griessinger E**, (…) Lassailly F and Bonnet D.
Stem Cells Transl Med. 2014. Impact Factor: 4.24.
Google Scholar citations: **109**

First article reporting a method equivalent to the xenograft model allowing ex-vivo maintenance and monitoring of functional chemoresistant leukemic stem cells.

• Frequency of leukemic initiating cells does not depend on the xenotransplantation model used. Vargaftig J*, Taussig DC*, **Griessinger E**, Anjos-Afonso F, Lister TA, Cavenagh J, Oakervee H, Bonnet D.
Leukemia. 2012 *Equal contribution Impact Factor: 12.10
Google Scholar citations: **46**

Fondamental data in the field of xenograft confirming the leukemic stem cell paradigm and showing that mice recipient immunodeficient level is not the limiting factor for xenograft failure

• Leukemia initiating cells from some acute myeloid leukemia patients with mutated nucleophosmin reside in the CD34- fraction. Taussig DC, Vargaftig J, **Griessinger E**, (…), Bonnet D.
Blood. 2010. Impact Factor: 11.84
Google Scholar citations: **419**

Cornerstone study in oncology showing the actual true diversity of leukemic stem cell extracellular phenotype contrary to the previous misconcepted dogma**.**

• Tunneling Nanotubes (TNTs): Intratumoral Cell-to-Cell Communication and Mitochondria Trafficking Through Connections by Tunneling Nanotubes—Effects on Cell. Metabolism and Response to Therapy. Vignais M-L, Nakhle J and **Griessinger E**
Encyclopedia of Cancer (Third Edition). November 2018.
Google Scholar citations: **10**

First Cancer Encyclopedia enclosing the description of the horizontal transfer of organel involved in cancer drug resistance.

• Mitochondrial Transfer in the Leukemia Microenvironment
Griessinger E, Moschoi R, Biondani G, Peyron J-F
Trends Cancer. 2017 Dec;3(12):828-839. Impact Factor: 14.22
Google Scholar citations: **72**

First review detailing the different treatment opportunities to influence mitochondria horizontal transfer either for tissue regeneration or oppositely for killing cancer cells.