

Curriculum Vitae

Dr. MARGHERITA GHISI

PERSONAL INFORMATION

Name & Surname: Margherita Ghisi

Place & date of birth: Milano (Italy) - November 4th, 1982.

Nationality: Italian, Australian.

Languages: Italian (mother language), English and French.

Residential address: 5 Rue Ella Maillart, Résidence “Les Fontaines d’Opale” M-323, 31300 – Toulouse, France.

Affiliation: Team 18 “Equipe METAML: Metabolism and Drug Resistance in Acute Myeloid Leukemia” (JE. Sarry) Cancer Research Centre of Toulouse (CRCT), UMR5071 (CNRS) / UMR1037 (INSERM)
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EDUCATION AND TRAINING

01/2007–04/2010 PhD in Oncology and Surgical Oncology
University of Padova, Padova (Italy)

09/2004–09/2006 Master Degree in Medical Biotechnology
University of Padova, Padova (Italy)
with the mark of 110/110 with Honours

09/2001–09/2004 Bachelor Degree in Health Biotechnology
University of Padova, Padova (Italy)
with the mark of 110/110

WORK EXPERIENCE

10/2020 - To date Recruited as Chargé de Recherche de Classe Normale (CRCN) at the CNRS (recruited on the 1st October 2020; Commission 24/02 “Physiologie, Vieillesse, Tumorigenèse”), working at the CNRS UMR5071 - INSERM UMR1037 - Cancer Research Center of Toulouse (CRCT, Toulouse, France) in the team “METAML: Metabolism and Drug Resistance in Acute Myeloid Leukemia” (Team 18; Lab Head Dr. Jean-Emmanuel Sarry). Research thematic: *Role of RNA splicing and other non-genetic mechanisms of regulation of AML metabolism and drug resistance.*

03/2017–10/2020 Post-doctoral fellow
Cancer Research Centre of Toulouse (CRCT), Toulouse (France)
Lab Head: Prof. Pierre Brousset (Team 7)/ Dr. Jean-Emmanuel Sarry (Team 18)
2017-2018. Project 1: *Study of unconventional mechanisms of post-transcriptional regulation of microRNA expression in hematological malignancies.* (Team 7, Brousset).

2018-2020. Project 2: *Investigating molecular determinants of AML chemoresistant phenotype.* (Team 18, Sarry).

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| 05/2015–12/2016 | Post-doctoral fellow Monash University, Australian Centre for Blood Diseases (ACBD); (Honorary appointment) Peter MacCallum Cancer Centre, Melbourne (Australia) Lab Head: A/Prof. Ross Dickins Project: <i>Investigating AML differentiation plasticity.</i> |
| 07/2011–05/2015 | Post-doctoral fellow Peter MacCallum Cancer Centre, Melbourne (Australia) Lab Head: Prof. Ricky Johnstone Project 1: <i>Investigating the role of the Id/E protein family of transcription regulators in the pathogenesis of AML.</i> Project 2: <i>Dissecting the molecular mechanisms underpinning the anticancer activity of histone acetylase inhibitors in a mouse model of t(8;21) AML.</i> |
| 04/2010–06/2011 | Post-doctoral fellow University of Padova, Padova (Italy) Additional year to achieve the publication of my PhD work in the laboratory of Prof. Amadori. Supervisor: Prof. Alberto Amadori Project: <i>Study of the role of microRNAs in T cell maturation and leukemogenesis.</i> |
| 01/2007–04/2010 | PhD in Oncology and Surgical Oncology University of Padova, Padova (Italy) Supervisors: Prof. Alberto Amadori and Prof. Paola Zanovello Project: <i>Study of the role of microRNAs in T cell maturation and leukemogenesis.</i> |
| 11/2005–09/2006 | Internship for Master Degree in Medical Biotechnology University of Padova, Padova (Italy) Supervisors: Prof. Alberto Amadori and Dr. Stefano Indraccolo. Project: <i>Characterization of a side population of ovarian cancer cells with stem cell-like properties.</i> |
| 03/2004–06/2004 | Internship for Bachelor Degree in Health Biotechnology University of Padova, Padova (Italy) |

PRESENTATIONS AT NATIONAL/ INTERNATIONAL CONFERENCES AND INVITED SEMINARS

Selected and invited oral communications

1. Invited Speaker, Session “Jeunes recruté(e)s”; **CHO2021: 27ème congrès du Club Hématopoïèse et Oncogénèse**, Giens, France; 29th September – 2nd October, 2021. “*Exploring non genetic mechanisms of resistance to therapy in acute myeloid leukemia: interplay between metabolic reprogramming and RNA splicing*”.
2. Selected Speaker (International Conference); **NDLR (New Directions in Leukemia Research) 2016**, Noosa, Queensland, Australia; 16-19th March, 2016. “*The Id2-E protein axis controls MLL-rearranged acute myeloid leukemia initiation and maintenance*”.

3. Selected Speaker; **The Melbourne Acute Myeloid Leukemia (AML) Research Meeting**, Melbourne, Victoria, Australia; 19th March **2015**. “*Role of the Id2-E protein axis in MLL-rearranged acute myeloid leukemia*”.
4. Selected speaker for short oral presentation (International Conference); **NDLR (New Directions in Leukemia Research, 2014)**, Noosa, Queensland, Australia; 30th March 30- April 2, 2014. “*Investigating the role of Id2 And E proteins in MLL-rearranged acute myeloid leukemia*”.
5. Selected Speaker; **Epigenetics 2012**, Melbourne, Victoria, Australia; November 7, 2012. “*Mechanisms underpinning the anticancer activity of histone deacetylase inhibitors in a mouse model of t(8;21) acute myeloid leukemia*”.
6. Selected Speaker; **The First Australian Workshop on Cell Death (AWCD)**. Lindeman Island, Queensland, Australia; August 21-25, **2011**. “*Modulation of microRNA (miR) expression in human T cell development: targeting of Notch3 by miR-150*”.

Selected poster presentations

1. Selected poster presentations (National conference); **RNAatoul 2017**. Toulouse, June, **2017**.
2. Two selected poster presentations (International Conference); **58th ASH (American Society of Hematology) Annual Meeting**. San Diego, USA; December 3-6, **2016**.
3. Selected poster presentation (International Conference); **NDLR (New Directions in Leukemia Research)**. Sunshine Coast, Queensland, Australia; March 25-28, **2012**.
4. Selected poster presentation (International Conference); **Idibell Cancer Conference (ICC)**. Barcelona, Spain, May 26-27, **2011**.
5. Selected poster presentation (International Conference); **14th International Congress of Immunology (ICI)**. Kobe, Japan, August 22-27, **2010**.
6. Selected poster presentation (International Conference); **International Biomedical Conference “The Notch Meeting 09”**. Athens, Greece, 27 September – 1 October, **2009**.

Invited seminars

- Invited seminar at the **Centre de Recherche en Cancérologie de Lyon (CRCL)** (November 29, **2019**).
- Invited seminar at the **Institut de Génétique Moléculaire de Montpellier (IGMM)** (November 19, **2019**).

SCIENTIFIC PUBLICATIONS

Peer-reviewed research articles:

1. Aroua N*, Boet E*, **Ghisi M***, Nicolau-Travers ML, Saland E, Gwilliam R, de Toni F, Hosseini M, Mouchel PL, Farge T, Bosc C, Stuani L, Sabatier M, Mazed F, Larrue C, Jarrou L, Gandarillas S, Bardotti M, Picard M, Strykh C, Laurent C, Gotanègre M, Bonnefoy N, Bellvert F, Portais JC, Nicot N, Azuaje F, Kaoma T, Joffre C, Tamburini J, Récher C, Vergez F, Sarry JE. “**Extracellular ATP and CD39 activate cAMP-mediated mitochondrial stress response to promote cytarabine resistance in acute myeloid leukemia**”. *Cancer Discov.* **2020** Oct;10(10):1544-1565. *Co-first author.
2. McKenzie MD*, **Ghisi M***, Oxley EP*, Ngo S, Cimmino L, Esnault C, Liu R, Salmon JM, Bell CC, Ahmed N, Erlichster M, Witkowski MT, Liu GJ, Chopin M, Dakic A, Simankowicz E, Pomilio G, Vu T, Krsmanovic P, Su S, Tian L, Baldwin TM, Zalcenstein DA, DiRago L, Wang S, Metcalf D, Johnstone RW, Croker BA, Lancaster GI, Murphy AJ, Naik SH, Nutt SL, Pospisil V, Schroeder T, Wall M, Dawson MA, Wei AH, de Thé H, Ritchie ME, Zuber J, Dickins RA. “**Interconversion between Tumorigenic and Differentiated States in Acute Myeloid Leukemia**”. *Cell Stem Cell.* **2019** Aug 1;25(2):258-272. *Co-first author.
3. Pinazza M, **Ghisi M**, Minuzzo S, Agnusdei V, Fossati G, Ciminale V, Pezzè L, Ciribilli Y, Pilotto G, Venturoli C, Amadori A and Indraccolo S. “**Histone deacetylase 6 controls Notch3 trafficking and degradation in T-cell acute lymphoblastic leukemia cells**”. *Oncogene.* **2018** Jul;37(28):3839-3851. **Second author.**
4. Witkowski MT, Hu Y, Roberts KG, Boer JM, McKenzie MD, Liu GJ, Le Grice OD, Tremblay CS, **Ghisi M**, Willson TA, Horstmann MA, Aifantis I, Cimmino L, Fietze S, den Boer ML, Mullighan CG, Smyth GK, Dickins RA. “**Conserved IKAROS-regulated genes associated with B-progenitor acute lymphoblastic leukemia outcome**”. *J Exp Med.* **2017** Mar 6;214(3):773-791.
5. **Ghisi M⁺**, Kats L, Masson F, Li J, Kratina T, Vidacs E, Gilan O, Doyle MA, Newbold A, Bolden JE, Fairfax KA, de Graaf CA, Firth M, Zuber J, Dickins RA, Corcoran LM, Dawson MA, Belz GT, Johnstone RW⁺. “**Id2 and E proteins orchestrate the initiation and maintenance of MLL-rearranged acute myeloid leukemia**”. *Cancer Cell.* **2016** Jul 11;30(1):59-74. *Co-corresponding author.

6. Gilan O*, Lam EY*, Becher I, Lugo D, Cannizzaro E, Joberty G, Ward A, Wiese M, Fong CY, Ftouni S, Tyler D, Stanley K, MacPherson L, Weng CF, Chan YC, **Ghisi M**, Smil D, Carpenter C, Brown P, Garton N, Blewitt ME, Bannister AJ, Kouzarides T, Huntly BJ, Johnstone RW, Drewes G, Dawson SJ, Arrowsmith CH, Grandi P, Prinjha RK, Dawson MA. **"Functional interdependency of BRD4 and DOT1L in MLL leukaemia."** *Nat Struct Mol Biol.* 2016 Jul;23(7):673-81.
7. Brumatti G, Ma C, Lalaoui N, Nguyen NY, Navarro M, Tanzer MC, Richmond J, **Ghisi M**, Salmon JM, Silke N, Pomilio G, Glaser SP, de Valle E, Gugasyan R, Gurthridge MA, Condon SM, Johnstone RW, Lock R, Salvesen G, Wei A, Vaux DL, Ekert PG, Silke J. **"The caspase-8 inhibitor emricasan combines with the SMAC mimetic birinapant to induce necroptosis and treat acute myeloid leukemia."** *Sci Transl Med.* 2016 May 18;8(339):339ra69.
8. Lalaoui N, Hänggi K, Brumatti G, Chau D, Nguyen NY, Vasilikos L, Spilgies LM, Heckmann DA, Ma C, **Ghisi M**, Salmon JM, Matthews GM, de Valle E, Moujalled DM, Menon MB, Spall SK, Glaser SP, Richmond J, Lock RB, Condon SM, Gugasyan R, Gaestel M, Guthridge M, Johnstone RW, Munoz L, Wei A, Ekert PG, Vaux DL, Wong WW, Silke J. **"Targeting p38 or MK2 Enhances the Anti-Leukemic Activity of Smac-Mimetics"**. *Cancer Cell.* 2016 Feb 8;29(2):145-58.
9. Masson F, **Ghisi M**, Groom J, Kallies A, Seillet C, Johnstone RW, Nutt SL, and Belz GT. **"Id2 represses E2A-mediated activation of IL-10 expression in T cells"**. *Blood.* 2014 May 29;123(22):3420-8. **Second author.**
10. Mussolin L, Holmes A, Romualdi C, Sales G, D'Amore E, **Ghisi M**, Pillon M, Rosolen A, and Basso K. **"An aberrant microRNA signature in childhood T-cell lymphoblastic lymphoma affecting CDKN1B expression, NOTCH1 and growth factor signaling pathways"**. *Leukemia.* 2014 Sep;28(9):1909-12.
11. Bots M, Verbrugge I, Martin BP, Salmon JM, **Ghisi M**, Baker A, Stanley K, Shortt J, Ossenkoppele GJ, Zuber J, Rappaport AR, Atadja P, Lowe SW, Johnstone RW. **"Differentiation therapy for the treatment of t(8;21) acute myeloid leukemia using histone deacetylase inhibitors"**. *Blood.* 2014 Feb 27;123(9):1341-52.
12. Serafin V*, Persano L*, Moserle L*, Esposito G, **Ghisi M**, Curtarello M, Bonanno L, Masiero M, Ribatti D, Stürzl M, Naschberger E, Croner RS, Jubb AM, Harris AL, Koeppen H, Amadori A and Indraccolo S. **"Notch3 signaling promotes tumor growth in colorectal cancer"**. *J Pathol.* 2011 Aug; 224(4):448-60.
13. **Ghisi M***, Corradin A*, Basso K, Serafin V, Frasson C, Mukherjee S, Guffanti A, De Bellis G, Mussolin L, Gerosa G, Stellin G, D'Agostino DM, Bronte V, Indraccolo S, Amadori A and Zanovello P. **"Modulation of microRNA expression in human T cell development: targeting of Notch3 by miR-150"**. *Blood.* 2011 Jun 30; 117(26):7053-62. ***Co-first author.**
14. Moserle L*, Indraccolo S*, **Ghisi M**, Frasson C, Fortunato E, Canevari S, Miotti S, Tosello V, Zamarchi R, Corradin A, Minuzzo S, Rossi E, Basso G and Amadori A. **"The side population of ovarian cancer cells is a primary target of interferon- α anti-tumor effects"**. *Cancer Res.* 2008 Jul 15;68(14):5658-68.

Review articles and book chapters:

1. **Ghisi M** and Johnstone RW. **AML-Deacetylases**. Targeted therapy of Acute Myeloid Leukemia (Part III: Epigenetics), *Springer-Verlag New York* 2015.
2. Moserle L*, **Ghisi M***, Amadori A, Indraccolo S. **"Side population and cancer stem cells: therapeutic implications."** *Cancer Lett.* 2010 Feb 1; 288(1):1-9. ***Co-first author.**

GRANTS, FELLOWSHIPS and AWARDS

Fellowships and grants

- **2019: Post-doctoral fellowship from the Fondation de France (Fondation de France « Recherche fondamentale et translationnelle sur le cancer – appel d'offre 2019 » ; duration: 2019-2021).**
- **2019 : Career development grant from Gilead Sciences (2019 Gilead International Research Scholars Program in Hematology/Oncology; duration: 2019-2021, 130K USD) as Chief Investigator.**
- **2018: Regional Grant of the LRLCC 2018 (Subvention de Recherche Ligue Régional Lutte Contre le Cancer 2018) as Chief Investigator (25K EUR). Duration: 01/01/2019-31/12/2019.**
- **2017: Prestige European Co-financing Grant Award. Duration: 09/2017 - 09/2019.**

- **2017: Post-doctoral Fellowship « Fondation ARC »** (Association pour la Recherche sur le Cancer). Aides individuelles - Postdoctorat en France. Duration: 01/03/2017 – 28/02/2019.
- **2013: Leukaemia Foundation of Australia Research Grant-in-aid 2013** as Young Chief Investigator (100K AUD). Duration: 01/2013-12/2013.
- **2012: Post-doctoral Fellowship “FIRC”** (Italian Foundation for Cancer Research). Fellowship for abroad. Duration: 06/2012-06/2013.
- **2010: University of Padova Early Career Post-doctoral Fellowship**. Duration: 01/03/2010-01/03/2012.

Awards

- **Winner of the Aspen Australia New Investigator Travel Bursary** (amount: 1500 AUD) at the NDLR (New Directions in Leukemia Research) Conference 2014 (Noosa, Australia, 2014).
- **Winner of the Qiagen Young Investigator Award** (amount: 500 AUD) at Epigenetics 2012 (Melbourne, Australia, 2012)
- **Congress Scholarship SIICA** (Italian Society of Immunology, Clinical Immunology and Allergology) for attending the 14th International Congress of Immunology (Kobe, Japan, 2010).

MENTORING, TEACHING and MANAGEMENT RESPONSABILITIES

Mentoring and teaching

As a senior PhD student and as a postdoctoral fellow I have been supervising and mentoring undergraduate and PhD students in the laboratory, training them to develop their technical skills in the laboratory, and helping them to improve their critical thinking and writing skills.

- **January 2021-June 2021**. Supervision of one M2 student (Ms. Gaelle Dormio; M2-Sciences du vivant PT Recherche en Biologie – Santé, University de Lorraine); project: *“Role of the splicing factor PTBP1 in the metabolism and survival of acute myeloid leukemia”*.
- **February 2019-August 2019**. Supervision of one M2 student (Ms. Lea Prevaud; Master Biologie-Santé, parcours BIOTIN: management de projets et innovations en biotechnologies, University of Montpellier); project: *“Study of alternative splicing on metabolic flexibility in acute myeloid leukemia”*.
- **January 2018-March 2018**. Co-supervision of one M1 student (Ms. Manon Nivet, Master Biologie-Santé, University Toulouse III – Paul Sabatier); project: *“Characterization of a small peptide encoded from the primary transcript of miR-22”*.
- **February 2016-October 2016**. Co-supervision of one undergraduate Honours (equivalent of master M2) student (Mr. Ethan Oxley; Monash University; Melbourne; Australia); project: *“Establishing a platform for identifying functional targets of the tumour suppressor PU.1 in acute myeloid leukaemia”*. Mr. Oxley was subsequently selected to enter the PhD program at Monash University and I pursued his supervision during the first year of his PhD formation before moving to France.
- **2014-15**. PhD student evaluation committee (member of the commission; Peter MacCallum Cancer Centre, Melbourne; Australia).
- **2010-11**. Co-supervision of two undergraduate (equivalent of master M1 and M2) students (Padova University; Italy):
Ms. Irene Zancan (equivalent of Master M1). Project: *“Characterization of functional targets of miR-150 in T-ALL cells”*.
Ms. Marica Pinazza (equivalent of Master M2). Project: *“Dissecting the role of histone deacetylases in the regulation of Notch3 stability”*.
After being awarded an excellent mark for her Master thesis, Ms. Pinazza started her PhD in the same laboratory continuing the work of her undergraduate thesis.

Management

- **January 2021-To date**. Supervision of one Research Assistant (IE2, Ms. Anais Granjon) in the laboratory of Dr. JE. Sarry at the Cancer Research Centre of Toulouse (CRCT, Toulouse, France).
- **June 2018-January 2019**. Co-supervision of one Research Assistant (IE2, Ms. Mathilde Gotanegre) in the laboratory of Dr. JE. Sarry at the Cancer Research Centre of Toulouse (CRCT, Toulouse, France).
- **March 2017-December 2018**. Co-supervision of one Research Assistant (AI, Mr. Nicolas Broin) in the laboratory of Prof. P. Brousset at the Cancer Research Centre of Toulouse (CRCT, Toulouse, France).
- **June 2015-November 2016**. Management and co-supervision of one junior Research Assistant (Ms. Emilia Simankowicz) in the laboratory of Prof. R. Dickins at the Australian Centre for Blood Diseases (ACBD) (Monash University, Melbourne, Australia).

OTHER SCIENCE-RELATED ACTIVITIES

Journal assessor

Invited to Peer-review research articles for: *Scientific Reports, Journal of Hematology and Transfusion.*

Professional memberships

Member of the RNA society.