



Luca Tottone, PhD

Senior Scientist - Molecular Medicine

Phone: +1(732)3221411

Email: luca.tottone@gmail.com

LinkedIn: <https://www.linkedin.com/in/luca-tottone>

Address: 138 Montgomery Street - APT2J, Highland Park (NJ), 08904, USA

A. Summary

Scientist with 8+ years of hands-on experience conducting *in vivo* and *in vitro* pre-clinical and translational research in immunology and blood malignancies, with particular focus on Acute Leukemias. Passionate about science and medicine I have mastered, optimized and upgraded current top-notch technology in genomics, drug development and cancer modeling to dissect the molecular mechanisms driving aberrant T-cell proliferation and transformation. Rigorous, self-motivated and inclined to problem solving, I rely on my solid scientific background to serve as a versatile resource in academia or private innovative biotechnological work environments.

B. Selected Technical Skills

- **In vitro/In vivo modelling and cell culture:**
Genetically engineered rodent colonies management
In/Ex vivo cancer allo/xenografts modelling
In vivo drug administration, cancer treatment
In vitro culturing, drug screening, treatment
In vitro BSL3 lenti/retrovirus cell engineering
- **Molecular Biology:**
CRISPR/Cas9 gene editing
NGS libraries preparation
DNA/RNA/Protein/Metabolites assays
Molecular Cloning
Luciferase reporting assays designing
- **Flow Cytometry:**
Populations enrichment (+/- selection)
Multicolor panel design
Cell proliferation evaluation
Cell death and apoptosis evaluation
Fluorescent proteins tracking
- **In silico analysis:**
Raw data analysis (ImageJ, FlowJo, IGV)
Molecular analysis (Genome Browser, STRING)
Statistical significance (Prism 8, Excel)
Figures refinement (Photoshop, Illustrator)
Data presentation (PowerPoint)

C. Education/Training

07/2010 Bachelor D. (Magna cum Laude) in Biotechnology, ["UniTE" University of Teramo](#) – Teramo, Italy
07/2013 Master D. (Magna cum Laude) in Medical Biotechnology, [Sapienza University of Rome](#) – Rome, Italy
12/2016 PhD (Commission Honors) in Molecular Medicine, [Sapienza University of Rome](#) – Rome, Italy

D. Positions and Honors

Positions and Employment

- 2022- Assistant Scientist, [UM Sylvester Comprehensive Cancer Center](#), Miami, FL
- Performing epigenetic studies to identify novel therapeutical targets in multiple leukemias
- 2018-22 Post-Doctoral Fellow, [Rutgers Cancer Institute of New Jersey \(CINJ\)](#), New Brunswick, NJ
- Performed and optimized *in vivo* cancer modeling, drug treatment and genetic engineering
 - Developed novel/unique transgenic (germinal/conditional KO) leukemias *in vivo* via BMT*
 - Optimized mouse thymic/splenic/peripheral blood FACS panels
 - Derived, stabilized and characterized novel primary leukemias *ex vivo*
 - Optimized NGS protocols for human and mouse custom targets (promoters/enhancers)
 - Developed NEON transient CRISPR/Cas9 transfection protocols for multiple gene targets
 - Developed new luciferase reporters for enhancer potency evaluation in T-ALL
 - Developed novel GFP/luciferase leukemic models for *in vitro* fast TFs screening

- Published high-impact research paper featured on three major media outlets

2017-18 Researcher, [CLNS, Italian Institute of Technology \(IIT\)](#), Rome (RM), Italy

- Screened, optimized and refined novel chalcone-derived drug with anti-leukemic activity, which lead to the establishment of the patent US011104657B2
- Implemented rapid anti-Notch drug screening protocol through 12XCSL luciferase reporter
- Developed and introduced GFP/luciferase leukemic models for *in vivo* xenografts tracking

2016-17 Post-Doctoral Fellow, [Dep. of Molecular Medicine Sapienza University](#), Rome (RM), Italy

- Designed and optimized *in vitro* drug treatment conditions for multiple applications (ChIP, washout assays, epigenetic genome modulations, cell proliferation)
- Optimized lenti/retroviral oncogene overexpression *in vitro* for cell-based assays

2013-16 Molecular Medicine Doctorate, [Dep. of Molecular Medicine Sapienza University](#), Rome (RM), Italy

- Developed new luciferase reporters for expression evaluation
- Optimized NEON nucleofection for plasmids and small RNAs in hard-to-transfect models
- Derived and stabilized primary medulloblastoma cancer stem cell (CSS) spheroids *ex vivo*
- Optimized cell co-culture (suspension cells on adherent cells) conditions for Notch activation *in vitro*

Honors

2014 [PON01_02464](#) (Research Training Fellowship) - [Sapienza University](#), Rome (RM), Italy

2014 [Progetti Avvio alla Ricerca](#) (Research Startup Award) - [Sapienza University](#), Rome (RM), Italy

2014 Innovative Research Award - [SIPMeT](#) - ASIP Palermo (PM), Italy

2016 Post-Doctoral fellowship from [Pasteur Institute in Italy: Cenci Bolognetti](#)

2017 Post-Doctoral fellowship from [Pasteur Institute in Italy: Cenci Bolognetti](#)

2020 Post-Doctoral fellowship from [New Jersey Commission on Cancer Research](#) (DCHS20PPC010)

2021 Outstanding Abstract Award - [Federation of American Societies for Experimental Biology \(FASEB\)](#)

2021 [Fellow Scholar Award](#) from [American Society of Hematology \(ASH\)](#)

E. Contribution to Science

Patents

- Botta B, Screpanti I, **Tottone L**, Zhdanoskaya N, Ingallina C, Giulimondi F, Quaglio D, Palermo R, Moril M, Ghirga F. (2019) [Notch inhibitors for use in the treatment of t-cell acute lymphoblastic leukemia](#). US011104657B2

Selected Publications

- Mori M*, **Tottone L***, Quaglio D*, Zhdanovskaya N, Ingallina C, Fusto M, Ghirga F, Peruzzi G, Crestoni ME, Simeoni F, Giulimondi F, Talora C, Botta B, Screpanti I, Palermo R. (2017) [Identification of a novel chalcone derivative that inhibits Notch signaling in T-cell acute lymphoblastic leukemia](#). Sci Rep. Vol 7, Article number: 2213 (*) **Equal Contribution** (PMID: 28526832)
- Tottone L***, Zhdanovskaya N*, Carmona Pestaña Á, Zampieri M, Simeoni F, Lazzari S, Ruocco V, Pelullo M, Caiafa P, Felli MP, Checquolo S, Bellavia D, Talora C, Screpanti I, Palermo R. (2019) [Histone Modifications Drive Aberrant Notch3 Expression/Activity and Growth in T-ALL](#). Front Oncol. Vol 9, Article number: 198 (*) **Equal Contribution** (PMID: 31001470)
- Tottone L**, Lancho O, Loh JW, Singh A, Kimura S, Roels J, Kuchmiy A, Strubbe S, Lawlor MA, Da Silva-Diz V, Luo S, Gachet S, García-Prieto CA, Hagelaar R, Esteller M, Meijerink JPP, Soulier J, Taghon T, Van Vlierberghe P, Mullighan CG, Khiabani H, Rocha PP, Herranz D. (2021) [A Tumor Suppressor Enhancer of PTEN in T-cell development and leukemia](#). Blood Cancer Discov. Vol 2, pp 92–109

Complete List of Published Work and Citations

[Luca Tottone Google Scholar](#)

Appendix: Technical Skills - Extended

- **Molecular Biology:**

CRISPR/Cas9 mutagenesis/deletion, CRISPR/dCas9 gene activation/inhibition, sgRNAs design/synthesis/purification, Illumina libraries preparation for DNA/RNA sequencing, ChIP/ChIP-Seq, Reverse ChIP, Chromosome Conformation Capture (3C/4C/Capture-C), DNA/RNA/Protein/Metabolites isolation/purification from cells/tissues, Western/Northern/Southern Blotting, PCR/RT-qPCR, blunt/sticky ends cloning (gDNA/cDNA/plasmids), Transcriptional (Promoters/Enhancers) luciferase reporter assays, genotyping, optical/fluorescence microscopy.

- ***In vitro*/*In vivo* modelling, drug treatment and culturing:**

In vivo leukemia generation via BMT* (bone marrow transplant), *in vivo* tumor transplantation (xenografts/allografts retro-orbital/tail-vein injections), *in vivo* cell tracking (IVIS), *ex vivo* tissue culturing, *ex vivo* tumor stabilization/modelling, mouse dissection/tissue harvest, mouse bleeding, mouse intraperitoneal/gavage drug administration, *in vitro* and *in vivo* drug dosing/IC50 evaluation, *in vivo* (mouse) intraperitoneal/gavage drug administration, *in vivo* and *in vitro* toxicity evaluation, mouse gamma irradiation, transgenic mouse models care/monitoring/breeding, immunodeficient mice handling/care, suspension cells *in vitro* handling/culturing (T-ALL/AML/Medulloblastoma/Spheroids/Cancer Stem Cells), adherent cells *in vitro* handling/culturing (HEK293T/Cervical Cancer/Hepatocarcinoma/Breast Cancer), lenti/retroviral gene overexpression/silencing, transient cell transfection (NEON nucleoporation/chemical transfection) single-cell clones development/screening, viable count (trypan blue staining/fluorescence).

- **Flow Cytometry:**

Extensive use/setting of Attune NxT Flow Cytometer, multicolor panel design (fluorescent proteins and superficial/intracellular staining), cell proliferation (PI), cell death and apoptosis (AnnexV/7AAD), live-dead staining (Sytox), Populations enrichment (+/- column selection).

- **Data analysis, statistics, bioinformatics and data presentation:**

Prism 8, ImageJ, FlowJo, IGV, BLAST, Genome Browser, STRING, SnapGene, MS Excel, MS PowerPoint, Adobe Photoshop, Adobe Illustrator, Biorender.