

CURRICULUM VITAE
Dr Luca Tirinato
Long Term Visiting Scientist
German Cancer Research Center (DKFZ)



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Personal Information:

Date of Birth: 13 July 1979
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Education

University Magna Graecia of Catanzaro, Catanzaro, Italy.

Ph.D. in Biomedical and Computer Engineering.

Advisors: Prof. Enzo Di Fabrizio and Prof. Ennio Carbone.

Thesis Title: "*Colon Cancer Stem Cells: from Raman Spectroscopy Characterization to Immunological Therapy*", 2008-2012.

University of Calabria, Cosenza, Italy.

Master Science in Biology (final mark 108/110).

Advisors: Prof. Loredana Mauro, Prof. Giovanni Cuda and Prof. Enzo Di Fabrizio.

Thesis Title: "*Fabrication of Porous Silicon to Plasma Enrichment of LMWP and Subsequent Detection through Mass Spectrometry and Raman Spectroscopy*", 2007.

Positions

January 2017 – Present: Long Term Visiting Scientist at the German Cancer Research Center (DKFZ), Heidelberg (Germany).

October 2013 – January 2017: Senior Post Doctoral Research Fellow at King Abdullah University of Science and Technology, Thuwal (Saudi Arabia).

April 2012 – September 2013: Junior Post-Doctoral Research Fellow at Istituto Italiano di Tecnologia (IIT), Genova (Italy).

March - August 2010: Visiting Scientist in the George Klein and Elena Kashuba group, at Microbiology, Tumour and Cell Biology (MTC) Department, Karolinska Institute, Stockholm (Sweden).

August - December 2008: Research Fellow at University Magna Graecia, Catanzaro (Italy).

Research Fields

- Colorectal and Melanoma Cancer Stem Cells

- Lipid Droplets and Lipid Metabolism in Cancer
- Cancer Stem Cell Radiation Response
- Reactive Oxygen Species
- Exosomes
- NK cells in Neoplastic Immunotherapy
- Evaluation of Nanoparticle Toxicology
- Biological application of Vibrational Spectroscopies (Raman and FT-IR)
- Superhydrophobic Surfaces for Early Molecule Detection

Technical Skills

- Culture and characterization of human healthy, cancer cells and cancer stem cells;
- Culture of mesenchymal stem cells and their differentiation in adipocytes;
- NK cell isolation and purification from human Buffy Coat;
- Extraction and analysis of nucleic acids (semi – quantitative and rtPCR);
- Lipid Droplet extraction from cell cultures and their characterization;
- Exosome isolation from cell culture media and their characterization;
- Cytotoxicity assay;
- Raman and FT-IR measurements on cells, protein and nucleic acids;
- Multiparametric antigenic analysis (FACS, Immunofluorescence and confocal microscopy)
- Clonogenic assay
- X-ray irradiation
- ROS analysis and quantification

Teaching and Courses

Student Supervision: 7 Master Students, 3 Ph.D. Students and 1 Post Doc.

2010 – 2011: Teaching Assistant for Human Anatomy, Physiology and Pathology at the School of Pharmacy, University Magna Graecia, Catanzaro (Italy).

Certifications

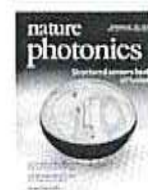
November 2017: Project Management, DKFZ – Heidelberg, Germany.

October 2017: FELASA (Federation of Laboratory Animal Science Associations) accredited member.

Personal Bibliographic Records

@10-09-2018 - Source: <https://scholar.google.it/luca.tirinato>

- Papers on Peer review international journals: 25
- H-index: 15
- Citations > 1200
- Book Chapters: 3
- Cover for Nature Photonics (Ref. 1.20)
- Cover for Stem Cells (Ref. 1.12)
- Leading Opinion Article (Ref. 1.24)
- Marie Skłodowska-Curie Individual Fellowship 2016 entitled "3D-ECCCO" was awarded with the Seal of Excellence.
- Marie Skłodowska-Curie Individual Fellowship 2017 entitled "EXPECTATIONS" was awarded with the Seal of Excellence.



- Awarded with the iCARE-2 (International fellowship program co-funded by AIRC and EU) fellowship.

Peer Review

Referee for Stem Cells, Stem Cell Research and Reports, Stem Cells International, Plos One, Biomaterials, Microelectronic Engineering, Journal of Nanomaterial

What Media say about my work

- ✓ Italian Daily Newspaper, *Gazzetta del Sud*, January 2015.
- ✓ Italian Scientific Journal, *Le Scienze*, August 2015



Publications on Peer Review International Journals

Scopus ID: [35730470100](#)

ORCID ID: [0000-0001-9826-2129](#)

- 1.1 **L. Tirinato**, F. Pagliari, T. Limongi, M. Marini, A. Falqui, J. Seco, P. Candeloro, C. Liberale and E. Di Fabrizio, *A Brief Overview Of Lipid Droplets In Cancer And Cancer Stem Cells*, **Stem Cells International** 2017 (doi.org/10.1155/2017/1656053)
- 1.2 M. Marini, T. Limongi, A. Falqui, A. Genovese, M. Allione, M. Moretti, S. Lopatin, **L. Tirinato**, G. Das, B. Torre, A. Giugni, F. Cesca, F. Benfenati and E. Di Fabrizio, *Imaging and structural studies of DNA–protein complexes and membrane ion channels*, **Nanoscale** 2017 (Doi: 10.1039/C6NR07958J) (3 Citations)
- 1.3 I. Patel, V. P. Rajamanickam, A. Bertoncini, F. Pagliari, **L. Tirinato**, S. P. Laptенок, and C. Liberale, *Quantum cascade laser infrared spectroscopy of single cancer cells*, **Optical Trapping Applications** 2017 (ISBN: 978-1-943580-25-5)
- 1.4 M. Marini, M. Allione, B. Torre, M. Moretti, T. Limongi, **L. Tirinato**, A. Giugni, G. Das and E. Di Fabrizio, *Raman on suspended DNA: Novel super-hydrophobic approach for structural studies*, **Microelectronic Engineering** 2017 (Doi.org/10.1016/j.mee.2016.12.016) (1 Citation)
- 1.5 T. Limongi, L. Lizzul, A. Giugni, **L. Tirinato**, F. Pagliari, H. Tan, G. Das, M. Moretti, M. Marini, G. Brusatin, A. Falqui, B. Torre, C. Di Benedetto and E. Di Fabrizio, *Laboratory injection mold for the fabrication of polymeric porous poly-epsilon-caprolactone scaffolds for preliminary mesenchymal stem cells tissue engineering applications*, **Microelectronic Engineering** 2017 (doi.org/10.1016/j.mee.2016.12.014)
- 1.6 M. Marini, T. Limongi, M. Moretti, L. Tirinato and E. Di Fabrizio, *The structure of DNA by direct imaging and related topics*, **Rivista del Nuovo Cimento** 2017 (DOI: 10.1393/ncr/i2017-10135-7)
- 1.7 T. Limongi, **L. Tirinato**, F. Pagliari, A. Giugni, M. Allione, G. Perozziello, P. Candeloro and E. Di Fabrizio, *Fabrication and applications of micro/nanostructured devices for tissue engineering*, Review, **Nano-Micro Letters** 2017 (Doi: 10.1007/s40820-016-0103-7) (5 Citations)
- 1.8 T. Limongi, A. Giugni, H. Tan, E.M. Bukhari, B. Torre, M. Allione, M. Marini, **L. Tirinato**, G. Das, M. Moretti, A. Falqui and E. Di Fabrizio, *Fabrication, mercury intrusion porosimetry characterization and in vitro qualitative analysis of biocompatibility of various porosities polycaprolactone scaffolds*, **Journal of Tissue Science & Engineering** 2015 (Doi: 10.4172/2157-7552.1000159)
- 1.9 G. Perozziello, P. Candeloro, A. De Grazia, F. Esposito, M. Allione, M.L. Coluccio, R. Tallerico, I. Valpapuram, **L. Tirinato**, G. Das, A. Giugni, B. Torre, P. Veltri, U. Kruhne, G. Della Valle, and E. Di Fabrizio, *Microfluidic device for continuous single cells analysis via Raman spectroscopy enhanced by integrated plasmonic nanodimers*, **Optics Express** 2016 (Doi: 10.1364/OE.24.00A180) (5 Citations)
- 1.10 M. Marini, A. Falqui, M. Moretti, T. Limongi, M. Allione, A. Genovese, S. Lopatin, **L. Tirinato**, G. Das, B. Torre, A. Giugni, F. Gentile, P. Candeloro and E. Di Fabrizio, *The structure of DNA by direct imaging*, **Science Advances** 2015 (Doi: 10.1126/sciadv.1500734) (8 Citations)
- 1.11 S. D. Darekar, M. Mushtaq, S. Gurrapu, L. Kovalevska, C. Drummond, M. Petruchek, **L. Tirinato**, E. Di Fabrizio, E. Carbone and E. Kashuba, *Mitochondrial ribosomal protein S18-2 evokes chromosomal instability and transforms primary rat skin fibroblasts*, **Oncotarget** 2015 (DOI: 10.18632/oncotarget.4123) (9 Citations)
- 1.12 **L. Tirinato**, C. Liberale, S. Di Franco, P. Candeloro, A. Benfante, R. La Rocca, L. Potze, R. Marotta, R. Ruffilli, V. P. Rajamanickam, M. Malerba, F. De Angelis, A. Falqui, E. Carbone, M. Todaro, J. P. Medema, G. Stassi, E. Di Fabrizio, *Lipid droplets: A New Player in Colorectal Cancer Stem Cells Unveiled by Spectroscopic Imaging*, **Stem Cells** 2015, (Doi: 10.1002/stem.1837) (43 Citations)
- 1.13 T. Sibillano, L. De Caro, D. Altamura, D. Siliqi, M. Ramella, F. Boccafocchi, G. Ciasca, G. Campi, **L. Tirinato**, E. di Fabrizio, C. Giannini, *An Optimized Table-Top Small-Angle X-ray Scattering Set-up for the Nanoscale Structural Analysis of Soft Matter*, **Scientific Reports** 2014 (Doi: 10.1038/srep06985) (13 Citations)
- 1.14 R. Tallerico, M. Todaro, S. Di Franco, C. Maccalli, C. Garofalo, R. Sottile, C. Palmieri, **L. Tirinato**, P. N. Pangigadde, R. La Rocca, O. Mandelboim, G. Stassi, E. Di Fabrizio, G. Parmiani, A. Moretta, F. Dieli, K. Karre, E. Carbone, *Human NK cells selective targeting of Colon Cancer-Initiating cells: a role for natural cytotoxicity receptors and MHC-I molecules*, **The Journal of Immunology** 2013, (Doi: 10.4049/jimmunol.1201542) (79 Citations)

- 1.15 Accardo, **L. Tirinato**, D. Altamura, T. Sibillano, C. Giannini, C. Riekkel, E. Di Fabrizio *Superhydrophobic surfaces allow probing of exosome self-organization using X-ray scattering*, **Nanoscale** 2013 (Doi: 10.1039/c3nr34032e) (15 Citations)
- 1.16 F. Gentile, M. L. Coluccio, N. Coppedè, F. Mecarini, G. Das, C. Liberale, **L. Tirinato**, M. Leoncini, G. Perozziello, P. Candeloro, F. De Angelis, E. Di Fabrizio, *Superhydrophobic surfaces as smart platforms for the analysis of diluted biological solutions* **ACS Applied Materials e Interfaces** 2012, (Doi: 10.1021/am300556w) (56 Citations)
- 1.17 F. Gentile, M. L. Coluccio, A. Accardo, G. Marinaro, E. Rondanina, S. Santoriello, S. Marras, G. Das, **L. Tirinato**, G. Perozziello, F. De Angelis, C. Dorigoni, P. Candeloro, E. Di Fabrizio, *Tailored Ag nanoparticles/nanoporous superhydrophobic surfaces hybrid devices for the detection of single molecule*, **Microelectronics Engineering**, 2012, (Doi: 10.1016/j.mee.2012.03.025) (10 Citations)
- 1.18 G. Perozziello, R. La Rocca, A. Anichini, G. Cojoc, C. Liberale, N. Malara, P. Candeloro, **L. Tirinato**, F. Gentile, M. Coluccio, E. Carbone and E. Di Fabrizio, *Microfluidic devices module tumor cell line susceptibility to NK cell recognition* **Small**, 2012, (Doi: 10.1002/sml.201200160) (11 Citations)
- 1.19 **L. Tirinato**; F. Gentile; D. Di Mascolo; G. Das; M. L. Coluccio; C. Liberale; S. A. Pullano; G. Perozziello; M. Francardi; A. Accardo; F. De Angelis; P. Candeloro and E. Di Fabrizio *SERS Analysis On Exosomes Using Super-Hydrophobic Surfaces* **Microelectronics Engineering**, 2012, (Doi: 10.1016/j.mee.2012.03.022) (19 Citations)
- 1.20 F. De Angelis, F. Gentile, F. Mecarini, G. Das, M. Moretti, P. Candeloro, M. L. Coluccio, G. Cojoc, A. Accardo, C. Liberale, R. P. Zaccaria, G. Perozziello, **L. Tirinato**, A. Toma, G. Cuda, R. Cingolani and E. Di Fabrizio *Breaking the diffusion limit with super-hydrophobic delivery of molecules to plasmonic nanofocusing SERS structures*, **Nature Photonics**, 2011, (Doi: 10.1038/nphoton.2011.222) (326 Citations)
- 1.21 P. Candeloro, **L. Tirinato**, N. Malara, E. Casals-Mercadal, V. Puentes, G. Perozziello, F. Gentile, M.L. Coluccio, G. Das, C. Liberale, F. De Angelis, E. Di Fabrizio *Nanoparticles Microinjection and Raman spectroscopy as tools for nanotoxicology studies* **The Analyst**, 2011, (Doi: 10.1039/c1an15313g) (27 Citations)
- 1.22 G. Perozziello, G. Simone, P. Candeloro, F. Gentile, N. Malara, R. Larocca, M. Coluccio, S.A. Pullano, **L. Tirinato**, O. Geschke and E. Di Fabrizio *A Fluidic Motherboard for Multiplexed Simultaneous and Modular Detection in Microfluidic Systems for Biological Application* **Micro And Nanosystems**, 2010, (Doi: 10.2174/1876402911002040227) (12 Citations)
- 1.23 F. Gentile, **L. Tirinato**, E. Battista, C. Liberale, F. Causa, E. M. Di Fabrizio, P. Decuzzi *On the Mechanics of Cell Adhesion and Proliferation on Fractal Surfaces* **Biophysical Journal**, 2010 (Doi: 10.1016/j.bpj.2009.12.4002)
- 1.24 F. Gentile, **L. Tirinato**, E. Battista, C. Liberale, F. Causa, E. M. Di Fabrizio, P. Decuzzi *Cells preferentially grow on moderately rough substrates*, **Biomaterials** 2010 (Doi: 10.1016/j.biomaterials.2010.06.016) (144 Citations)
- 1.25 Gentile F., Das G., Coluccio M.L., Mecarini F., Accardo A., **Tirinato L.**, Tallerico R., Cojoc G., Liberale C., Candeloro P., Decuzzi P., De Angelis F. and Di Fabrizio E. *Ultra Low Concentrated Molecular Detection Using Superhydrophobic Surface Based Biophotonic Devices*, **Microelectronics Engineering** 2009 (Doi: 10.1016/j.mee.2009.11.083) (56 Citations)

Book Chapters

- 2.1 G. Perozziello, A. Giugni, M. Allione, B. Torre, G. Das, M.L. Coluccio, M. Marini, **L. Tirinato**, M. Moretti, T. Limongi, P. Candeloro and E. Di Fabrizio, *Nanoplasmonic and Microfluidic Devices for Biological Sensing*, NATO Science for Peace and Security Series B: Physics and Biophysics, 2017
- 2.3 Giugni, B. Torre, M. Allione, F. Gentile, P. Candeloro, M. L. Coluccio, G. Perozziello, T. Limongi, M. Marini, R. Raimondo, **L. Tirinato**, M. Francardi, G. Das, R. Proietti Zaccaria, A. Falqui, E. Di Fabrizio, *Novel Plasmonic Probes and Smart Superhydrophobic Devices, New Tools for Forthcoming Spectroscopies at the Nanoscale*, **Nano-Structures for Optics and Photonics**, Springer Netherlands 2014
- 2.3 F. Gentile, M.L. Coluccio, A. Toma, A. Alabastri, R. Proietti Zaccaria, G. Das, F. De Angelis, P. Candeloro, C. Liberale, G. Perozziello, **L. Tirinato**, M. Leoncini, E. Di Fabrizio, *Plasmonics and*

Super-Hydrophobicity: A New Class of Nano-Bio-Devices Plasmonics: Theory and Applications, Springer Netherlands 2013

- 2.4 G. Das, C. Liberale, F. De Angelis, P. Candeloro, F. Gentile, M. L. Coluccio, A. Pujia, G. Cojoc, L. Tirinato, F. Mecarini, G. Perozziello, A. Accardo and E. Di Fabrizio. *Handbook of Nanofabrication* edited by S. Cabrini and S. Kawata 2010

International Conferences and Topical Meetings:

- 3.1 **Invited Oral Presentation** at the "*VIII Meeting Stem Cell Research Italy*", Chieti – Italy 2017.
- 3.2 Oral Presentation at EMBO "*Cancer stem cells 20 years later: Achievements, Controversies, emerging concepts and technologies*", Catanzaro – Italy, October 2014.
- 3.3 Oral Presentation at the "*3rd International Workshop at the interface between Applied Physics and Medicine*", Stockholm – Sweden, 2014.
- 3.4 **Selected Oral Presentation** at the "*1st International Summer School in Data Acquisition and Analysis in Metabolomics*", Pula (Cagliari) – Italy, 2014.
- 3.5 Poster Presentation at the "*KAUST Winter Enrichment Program 2014*", Thuwal – Saudi Arabia, 2014.
- 3.6 Poster Presentation at the "*Global Collaborative Research (GCR) Symposium*", Thuwal – Saudi Arabia, 2014.
- 3.7 Poster Presentation at the "*Cell Symposia: Hallmarks of Cancer*", San Francisco – California, 2012.
- 3.8 Oral Presentation at the "*2nd Workshop at the interface between Applied Physics and Medicine*", Stockholm – Sweden, 2012.
- 3.9 Oral Presentation at the "*Nanobiotech Department Retreat - Istituto Italiano di Tecnologia*", Genova – Italy, 2012.
- 3.10 **Invited Oral Presentation** at the "*Micro and Nano Engineering International Conference*", Berlin – Germany, 2011.
- 3.11 Oral Presentation at the "*Italian Society of Immunology, Clinic Immunology and Allergology Retreat*", Napoli – Italy, 2011.
- 3.12 Oral Presentation at the "*1st Workshop at the interface between Applied Physics and Medicine*", Stockholm – Sweden, 2011.
- 3.13 Poster Presentation at the "*National Nanomedicine Conference*", Pavia – Italy, 2009.
- 3.14 Poster Presentation at the "*National Nanomedicine Conference*", Pavia – Italy, 2008.

I hereby state that the information contained in the present document is correct to the best of my knowledge and authorize the use of my personal details according to the Italian Legislative Decree n°196/2003

Luca Tirinato

