

CV Maria Letizia Trincavelli



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ACADEMIC CAREER and ACADEMIC POSITIONS

- 2020 - today Director of Department of Pharmacy, University of Pisa.
- 2019 – 2020 Coordinator of PhD Program in Science of Drug and Bioactive substances, University of Pisa, Department of Pharmacy.
- 2019-today Co-director of the Italian node of SAPRK Global Translational research (international network for translational research in medical and pharmaceutical field).
- 2016 - today Full Professor of Biochemistry Department of Pharmacy, University of Pisa, BIO/10 (Research and didactic activity in biochemistry and molecular biology)
- 2016 - 2020 Vice-Director of Department of Pharmacy, University of Pisa
- 2016 - 2018 Vice-CAI (International coordinator) of the Department of Pharmacy, University of Pisa
- 2014 - 2016 Associate Professor of Molecular Biology Department of Pharmacy, University of Pisa, BIO/11
- 2001 - 2014 Researcher of Biochemistry Department of Pharmacy, University of Pisa, BIO/10
- 1998 - 2000 Post Doc fellowship in Biochemistry Department of Psychiatry, Neurobiology, Pharmacology and Biotechnologies, University of Pisa, BIO/10

EDUCATION AND TRAINING

- 1998 PhD degree in "Disegno, Sviluppo e Biosperimentazione del Farmaco" University of Pisa, Faculty of Pharmacy
- 1993 Laurea" degree "summa cum laude" in Pharmacy with a Thesis in Biochemistry, University of Pisa, Faculty of Pharmacy

WORK ACTIVITIES

Editorial activity Guest Editor for two special issue of the International Journal of Molecular Science
Ad hoc reviewer for journals of the ACS, Elsevier, Wiley, Plos, MDPI publishing groups (average of ~ 30 manuscripts annually in the last 20 years)
Grant reviewer for MIUR and MUR (member of REPRISE); FISM Foundation, Italy.

Invited presentations -"Invited speaker" al al 6th Joint German-Italian Purine Club Meeting tenutosi ad Hamburg (Germany) dal 22 al 22-25 July, 2015 " Role of adenosine receptors in survival and differentiation of glioblastoma stem cells".
-"Invited Chaiperson" of section "Purinergic signalling in neural development", 4th Joint German-Italian Purine Club Meeting, Bonn (Germany) 22 - 25 June, 2011.
-"Invited speaker" at 4th Joint German-Italian Purine Club Meeting, Bonn (Germany) 22 - 25 June , 2011, "Adenosine A2A receptors in psychiatric disorders".

Professional Society	<p>-She is member of the Italian Society of Biochemistry and Molecular Biology.</p> <p>-She has been a Directive member and Secretary of the Purine Club, a no-profit scientific association gathering all research interested to the pathophysiology of purines and pyrimidines.</p>
Grants (last 10 years)	<p>- PNRR, Missione 4, Componente 2, Investimento 1.5, THE – Tuscany Health Ecosystem (Ecosistema dell'innovazione sulle scienze e le tecnologie della vita in Toscana)Spoke 8 - Sub-project 5 - Neurodegenerative diseases;</p> <p>- Bando Ricerca Salute 2018: 2020-2022, Partecipant, "SmarT bioactive peRsonalised and Implatable 3d prinTed scaffold for tendOn regeneration", acronimo "TRITONE". Unit budget: 400.000 EU;</p> <p>-FISM 2018 cod. 2018/R/21: Coordinator "Struttura cristallografica e caratterizzazione funzionale del recettore GPR17: un bersaglio innovativo per terapie di rimielinizzazione nella Sclerosi Multipla". Total 235.000 EU, local budget 95.000 EU</p> <p>-PRIN 2015: 2017-2020, Area 05, Unit PI, Microglia-cell communication in ischemia and glioblastoma (Mechanism). 24.812 EU</p> <p>-FISM 2015 cod. 2015/R/11: Local PI, "Characterization of the GPR17 receptor, a novel pharmacological target for remyelination therapy in multiple sclerosis". 70.000 EU</p> <p>-UVAR Dipint, University of Pisa 2015: Partecipant, Neurodegenerative diseases: the development of a new diagnostic test detecting α-synuclein complexes with β-amyloid or Tau in human blood. 10.500 EU</p> <p>-POR CReO FESR 2007-2013, Bando Unico R&S anno 2012 (Regione Toscana): Partecipant, Sviluppo di un nuovo preparato a base di Immunoglobuline G umane plasma-derivate per uso endovenoso. Total project budget1.124.502,96 EU</p> <p>-Ministerial Project PRIN 2012: 2014-2017, Area 05, Project coordinator. Il controllo dell'osteoblastogenesi quale nuova strategia terapeutica per le patologie ossee. 353.445 EU</p>
Patents	<p>2017 Method for the diagnosis of neurodegenerative diseases. WO2017198554A1</p> <p>2010 GPR17-modulating compounds, diagnostic and therapeutic uses thereof. WO 2012059869.</p> <p>2004 GPR17 modulators, method of screening and uses thereof. WO2006045476A3</p>
Other language(s)	English, C1 level
Job-related skills	Good organizational, communication and managerial skills acquired through a) the coordination of several national research projects as local and national manager; b) tutoring / supervisor of PhD students and undergraduates; c) institutional positions.
Digital skills	Daily use of software such as Windows Office (Word, Excel, PowerPoint) Excellent command of digital image processing programs (Adobe Photoshop) Excellent command in the use of data analysis and statistical analysis software (ImageJ, Origin and Graph-Pad Prism)
RESEARCH AREA	<p>Trincavelli's research has been focused on basic mechanisms underlying G protein coupled receptor-ligand interaction and receptor functioning in normal and pathological cells and tissues. Research activity was focused on the investigation of a) intracellular signalling pathways coupled to receptor proteins and the molecular mechanisms involved in the regulation of receptor functional responses, such as internalization and desensitization; b) the study of intracellular signalling pathways involved in mitogenesis, cell differentiation, cell survival/death; c) stem cell differentiation processes for regenerative medicine.</p> <p>From several years she has been working in the G protein coupled research field, in particular on P1/P2 receptors, their transduction systems and regulatory pathways in physiological and pathological processes, such as demyelinating diseases. Recently, the PI research has been focused on the molecular mechanisms involved in pathogenesis of neurodegenerative and inflammatory disease for the identification of molecular target of pathology and the development of new therapeutic strategies.</p>

Currently, a particular focus is on the study of stem cell differentiation towards tenocyte and osteoblasts on biocompatible scaffolds for tendon regeneration.

ADDITIONAL INFORMATION

Publications *Number of total publications in peer-review journals: 162*
Number of publication last 10 years: 58
Total number of citations (scopus): 4981
H index (scopus): 40

For the complete list of publications see:

https://arpi.unipi.it/simple-search?query=trincavelli&location=&sort_by=score&order=desc&rpp=10&etal=0&filtername=author&filterquery=rp00038&filtertype=authority#.YAhYwOhKjIU

Relevant Publications last 5 years

Marchetti L, Nifosi R, Martelli PL, Da Pozzo E, Cappello V, Banterle F, Trincavelli ML, Martini C, D'Elia M. Quantum computing algorithms: getting closer to critical problems in computational biology. *Brief Bioinform.* 2022 Nov 19;23(6):bbac437. doi: 10.1093/bib/bbac437. Erratum in: *Brief Bioinform.* 2023 Mar 20; PMID: 36220772; PMCID: PMC9677474.

Cirri D, Massai L, Giacomelli C, Trincavelli ML, Guerri A, Gabbiani C, Messori L, Pratesi A. Synthesis, chemical characterization, and biological evaluation of a novel auranofin derivative as an anticancer agent. *Dalton Trans.* 2022 Sep 13;51(35):13527-13539. doi: 10.1039/d2dt00836j. PMID: 36000524.

Pettinari R, Marchetti F, Tombesi A, Duan F, Zhou L, Messori L, Giacomelli C, Marchetti L, Trincavelli ML, Marzo T, La Mendola D, Balducci G, Alessio E. Ruthenium(II) 1,4,7-trithiacyclononane complexes of curcumin and bisdemethoxycurcumin: Synthesis, characterization, and biological activity. *J Inorg Biochem.* 2021 May;218:111387. doi: 10.1016/j.jinorgbio.2021.111387. Epub 2021 Feb 20. PMID: 33721720.

Barresi E, Giacomelli C, Marchetti L, Baglini E, Salerno S, Greco G, Da Settimo F, Martini C, Trincavelli ML, Taliani S. Novel positive allosteric modulators of A_{2B} adenosine receptor acting as bone mineralisation promoters. *J Enzyme Inhib Med Chem.* 2021 Dec;36(1):286-294. doi: 10.1080/14756366.2020.1862103. PMID: 33334192; PMCID: PMC7751416.

Iannuzzi AM, Giacomelli C, De Leo M, Pietrobono D, Camangi F, De Tommasi N, Martini C, Trincavelli ML, Braca A. Antioxidant Activity of Compounds Isolated from *Elaeagnus umbellata* Promotes Human Gingival Fibroblast Well-Being. *J Nat Prod.* 2020 Mar 27;83(3):626-637. doi: 10.1021/acs.jnatprod.9b01030. Epub 2020 Feb 7. PMID: 32031808; PMCID: PMC7997630.

Daniele S, Saporiti S, Capaldi S, Pietrobono D, Russo L, Guerrini U, Laurenzi T, Ataie Kachoie E, Palazzolo L, Russo V, Abbracchio MP, Eberini I, Trincavelli ML. Functional Heterodimerization between the G Protein-Coupled Receptor GPR17 and the Chemokine Receptors 2 and 4: New Evidence. *Int J Mol Sci.* 2022 Dec 23;24(1):261. doi: 10.3390/ijms24010261. PMID: 36613703; PMCID: PMC9820414.

Amodeo R, Nifosi R, Giacomelli C, Ravelli C, La Rosa L, Callegari A, Trincavelli ML, Mitola S, Luin S, Marchetti L. Molecular insight on the altered membrane trafficking of TrkA kinase dead mutants. *Biochim Biophys Acta Mol Cell Res.* 2020 Feb;1867(2):118614. doi: 10.1016/j.bbamcr.2019.118614. Epub 2019 Nov 21. PMID: 31760089.

Russo L, Giacomelli C, Fortino M, Marzo T, Ferri G, Calvello M, Viegi A, Magri A, Pratesi A, Pietropaolo A, Cardarelli F, Martini C, Rizzarelli E,

Marchetti L, La Mendola D, Trincavelli ML. Neurotrophic Activity and Its Modulation by Zinc Ion of a Dimeric Peptide Mimicking the Brain-Derived Neurotrophic Factor N-Terminal Region. *ACS Chem Neurosci*. 2022 Dec 7;13(23):3453-3463. doi: 10.1021/acscchemneuro.2c00463. Epub 2022 Nov 8. PMID: 36346920; PMCID: PMC9732821.

Barresi E, Martini C, Da Settimo F, Greco G, Taliani S, Giacomelli C, Trincavelli ML. Allosterism vs. Orthosterism: Recent Findings and Future Perspectives on A_{2B} AR Physio-Pathological Implications. *Front Pharmacol*. 2021 Mar 24;12:652121. doi: 10.3389/fphar.2021.652121. PMID: 33841166; PMCID: PMC8024542.

Baldacci F, Daniele S, Piccarducci R, Giampietri L, Pietrobono D, Giorgi FS, Nicoletti V, Frosini D, Libertini P, Lo Gerfo A, Petrozzi L, Donadio E, Betti L, Trincavelli ML, Siciliano G, Ceravolo R, Tognoni G, Bonuccelli U, Martini C. Potential Diagnostic Value of Red Blood Cells α -Synuclein Heteroaggregates in Alzheimer's Disease. *Mol Neurobiol*. 2019 Sep;56(9):6451-6459. doi: 10.1007/s12035-019-1531-4. Epub 2019 Mar 2. PMID: 30826968.

Daniele S, Baldacci F, Piccarducci R, Palermo G, Giampietri L, Manca ML, Pietrobono D, Frosini D, Nicoletti V, Tognoni G, Giorgi FS, Lo Gerfo A, Petrozzi L, Cavallini C, Franzoni F, Ceravolo R, Siciliano G, Trincavelli ML, Martini C, Bonuccelli U. α -Synuclein Heteromers in Red Blood Cells of Alzheimer's Disease and Lewy Body Dementia Patients. *J Alzheimers Dis*. 2021;80(2):885-893. doi: 10.3233/JAD-201038. PMID: 33579836.

Daniele S, Giacomelli C, Pietrobono D, Barresi E, Piccarducci R, La Pietra V, Taliani S, Da Settimo F, Marinelli L, Novellino E, Martini C, Trincavelli ML. Long lasting inhibition of Mdm2-p53 interaction potentiates mesenchymal stem cell differentiation into osteoblasts. *Biochim Biophys Acta Mol Cell Res*. 2019 May;1866(5):737-749. doi: 10.1016/j.bbamcr.2019.01.012. Epub 2019 Jan 28. PMID: 30703414.

Pietrobono D, Giacomelli C, Marchetti L, Martini C, Trincavelli ML. High Adenosine Extracellular Levels Induce Glioblastoma Aggressive Traits Modulating the Mesenchymal Stromal Cell Secretome. *Int J Mol Sci*. 2020 Oct 18;21(20):7706. doi: 10.3390/ijms21207706. PMID: 33081024; PMCID: PMC7589183.

Parravicini C, Lecca D, Marangon D, Coppolino GT, Daniele S, Bonfanti E, Fumagalli M, Raveglia L, Martini C, Gianazza E, Trincavelli ML, Abbracchio MP, Eberini I. Development of the first in vivo GPR17 ligand through an iterative drug discovery pipeline: A novel disease-modifying strategy for multiple sclerosis. *PLoS One*. 2020 Apr 22;15(4):e0231483. doi: 10.1371/journal.pone.0231483. PMID: 32320409; PMCID: PMC7176092.

Capelli D, Parravicini C, Pochetti G, Montanari R, Temporini C, Rabuffetti M, Trincavelli ML, Daniele S, Fumagalli M, Saporiti S, Bonfanti E, Abbracchio MP, Eberini I, Ceruti S, Calleri E, Capaldi S. Surface Plasmon Resonance as a Tool for Ligand Binding Investigation of Engineered GPR17 Receptor, a G Protein Coupled Receptor Involved in Myelination. *Front Chem*. 2020 Jan 10;7:910. doi: 10.3389/fchem.2019.00910. PMID: 31998697; PMCID: PMC6966494.

Piccarducci R, Pietrobono D, Pellegrini C, Daniele S, Fornai M, Antonioli L, Trincavelli ML, Blandizzi C, Martini C. High Levels of β -Amyloid, Tau, and Phospho-Tau in Red Blood Cells as Biomarkers of Neuropathology in Senescence-Accelerated Mouse. *Oxid Med Cell Longev*. 2019 Jun 9;2019:5030475. doi: 10.1155/2019/5030475. PMID: 31281579; PMCID: PMC6590616.

Giacomelli C, Natali L, Nisi M, De Leo M, Daniele S, Costa B, Graziani F,

Gabriele M, Braca A, Trincavelli ML, Martini C. Negative effects of a high tumour necrosis factor- α concentration on human gingival mesenchymal stem cell trophism: the use of natural compounds as modulatory agents. *Stem Cell Res Ther.* 2018 May 11;9(1):135. doi: 10.1186/s13287-018-0880-7. PMID: 29751776; PMCID: PMC5948671.

Pisa, 02/05/2023

Prof.ssa Maria Letizia Trincavelli

A handwritten signature in blue ink, appearing to read 'Trincavelli'.