PROCEDURA VALUTATIVA PER LA COPERTURA DI N.1 POSTO DI PROFESSORE UNIVERSITARIO DI PRIMA FASCIA, PER IL SETTORE CONCORSUALE 05/E1-SETTORE SCIENTIFICO DISCIPLINARE BIO/10 PRESSO IL DIPARTIMENTO DI SCIENZE BIOCHIMICHE "A. ROSSI FANELLI" FACOLTA' DI FARMACIA E MEDICINA (codice concorso 2019POR016)

ALLEGATO B

Decreto Rettore Università di Roma "La Sapienza" n. 2560/2019 del 20/08/2019

Candidate: **MARIA LUISA MANGONI**

Curriculum Vitae

Rome, September 11, 2019

Part I – General Information

Full Name: Maria Luisa MANGONI
ORCID: 0000-0002-5991-5868
Scopus Author ID: 7003873029

Part II – Education

Type	Year	Institution	Notes (Degree, Experience)
University graduation	1996	Department of Biochemical Sciences, Sapienza University of Rome.	Doctor in Biological Sciences (*summa cum laude*). Thesis Title: "Rapporti struttura-funzione di peptidi antimicrobici da pelle di anfibio" Tutor: Prof. Francesco Bossa
PhD	2003	Department of Biochemical Sciences, Sapienza University of Rome.	Doctorate (Ph.D.) in Biochemistry. Ph.D. Thesis Title: Antimicrobial peptides from amphibian skin and their role in innate immunity Research Mentor: Prof. Donatella Barra

Part III – Appointments

IIIA – Academic Appointments

Start	End	Institution	Position
1.03.1999	29.02. 2000	Department of Biomedical Sciences, G. D'Annunzio University, Chieti.	Research Contract. Project Title "Ruolo dei peptidi antimicrobici nell'immunità innata"

1.11.2002	26.12.2012	Department of Biochemical Sciences, Faculty of Pharmacy and Medicine, Sapienza University of Rome	Assistant Professor of Biochemistry (S.S.D. BIO/10, Ricercatore confermato dal 1.11.2005)
27.12.2012	present	Department of Biochemical Sciences, Faculty of Pharmacy and Medicine, Sapienza University of Rome	Associate Professor of Biochemistry (S.S.D. BIO/10)
16.06.2014	16.06.2020	Ministero dell'Istruzione dell'Università e della Ricerca (MIUR)	National Scientific Qualification as Full Professor of General Biochemistry and Clinical Biochemistry (settore concorsuale 05/E1)
28.03.2018	28.03.2024	MIUR	National Scientific Qualification as Full Professor of General Biochemistry (settore concorsuale 05/E1)

III B - Other Academic Assignments (*Collegiate Activities "Attività Collegiali" and Organizational tasks*) at Sapienza and other National Universities

Start	**End**	**Institution**	**Position**
2006	2009	Sapienza University of Rome, II Faculty of Medicine (current Faculty of Medicine and Psychology)	Elected Member of the Faculty Committee (Giunta di Facoltà)
11.2012	10.2013	Sapienza University of Rome	Member of the Teaching Board of Doctoral School in Pasteurian Sciences (XXVIII cycle)
11.2013	present	Sapienza University of Rome	Member of the Teaching Board of Doctoral School in Biochemistry

Member of Competition or Final Doctoral Examination Commissions

Start	**End**	**Institution**	**Position**
19.09. 2009	10.10.2009	Tor Vergata University, Rome	Member of the Commission for the Comparative Evaluation Competition to assign 1 permanent Researcher

			position, Faculty of Engineering (S.S.D. BIO/10-Biochimica) D.R. 1005 del 21.12.2007 (G.U. N. 102 del 28.12.2007)
2009	2016	University of L'Aquila, L'Aquila; University of Trieste, Trieste; University of Tor Vergata, Rome; University of Udine, Udine	Member of the Commission ("Board of Examiners") for awarding the Doctor of Philosophy (Ph.D) in: (i) Biochemical Sciences and Neuroscience (2009, L'Aquila University, XXI Cycle, L'Aquila) (ii) Molecular Biomedicine (2010, Trieste University, XXIII Cycle, Trieste); (iii) Chemical Sciences (2016, Tor Vergata University, Rome); (iv) Biomedical and Biotechnological Sciences (2016, Udine University, XXVIII Cycle, Udine);
1.09.2016	30.09.2016	University of Trieste	Member of the Commission for the Comparative Evaluation Competition to assign 1 temporary Researcher position (art. 24 legge 30 dicembre 2010 n. 240) S.C. 05/E1, S.S.D. BIO/10-Biochimica at the Department of Life Science, Trieste University (D.R. N. 307 del 27.05.2016)
4.07.2017	10.07.2017	Sapienza University of Rome	Member of the Judging Commission to assign 1 Research Grant (cat. A tip I, bando A/1/2017) at the Department of Biochemical Sciences
7.03.2019	25.03.2019	Sapienza University of Rome	Member of the Evaluation Commission for 1 Associate Professor position (upgrade) Sapienza University- C.C. 2018PAR041 Department of "Neuroscienze, salute mentale e organi di senso", Facolty of Medicine and Psychology S.C. 05/E1 S.S.D. BIO/10 Biochemistry

Other " Organizational Tasks" (Compiti Organizzativi)

Start	**End**	**Institution**	**Position**
4.09.2013	-	Sapienza University of Rome	"Responsabile Docente d'Aula" for the Admission Competition to Degree Courses in Health Professions

13.09.2017	-	Sapienza University of Rome	"Presidente della Commissione d'Aula" for the Admission Competition to Degree Courses in Health Professions
2012	present	Sapienza University Department of Biochemical Sciences	Person in Charge of Waste Disposal Management (Gestione Smaltimento Rifiuti) at the Departmental Venue in via degli Apuli
2017	present	Sapienza University Department of Biochemical Sciences	Member of the Commission for the executive Disposal Project of the Departmental Venue in Via degli Apuli and its transfer to the new CU20/CU27 buildings

III C –Research/Teaching Assignments at Qualified Research/Academic Institutions Abroad

Start	**End**	**Institution**	**Position**
1.01.1998	30.11.1998	Microbiology and Tumor Biology Center, Karolinska Institutet, Stockholm, SWEDEN. Research Mentor: Prof. Hans G. Boman	Research Fellow to conduct studies aimed at characterizing the structure and function of amphibian skin antimicrobial peptides as well as their roles in the host immune system.
21.09.2002	26.09.2002	Department of Physiological Sciences, laboratories of Prof. Elisabeth N. Ferroni Schwartz University of Brasilia, Brasilia-BRASIL	Invited Visiting Scientist for daily seminars on the structural/functional properties of antimicrobial peptides to undergraduate and Ph.D. students in Biology and for Lab training.
3.02.2003	28.02.2003	Centro de Investigaciónes Biológicas, CSIC, Madrid, SPAIN. Laboratories of Dr. Luis I. Rivas Lopez	Visiting Researcher to develop experimental procedures to assay the anti-leishmania activity of natural products
01.07.2004	15.07.2004	CSIC, Madrid, SPAIN. Lab of Dr. Luis I. Rivas Lopez	Visiting Researcher to perform mode of action studies on the anti-leishmania activity of frog skin peptides
06.05.2009	08.05.2009	Laboratories of Prof. Anne Ulrich, Karlsruhe Institute of Technology, GERMANY	Invited Visiting Lecturer to discuss NMR studies and to give a seminar on antimicrobial peptides
09.06.2011	11.06.2011	Laboratories of Prof. Monier Tadros, The Fraunhofer Institute for Biomedical Engineering IBTM, GERMANY	Invited Visiting Lecturer to discuss collaborative studies and to give a seminar on amphibian antimicrobial peptides

15.04. 2014	18.04.2014	Laboratories of Prof. Ralf Paus, University of Manchester, UNITED KINGDOM	Invited Visiting Researcher to conduct "wound healing" experiments on amphibian skin and to give a seminar on antimicrobial peptides
1.05.2016	8.05.2016	Laboratories of Prof. Y. Peter Di, University of Pittsburgh, Health and Environmental Department, Pittsburgh, USA	Invited Visiting Researcher to perform *in vivo* efficacy studies of antimicrobial peptides in murine models of pneumonia
7.10.2018	10.10.2018	Laboratories of Prof. Karl Lohner, University of Graz, Department of Biophysics, AUSTRIA	Invited Visiting Researcher to perform biophysical studies on model membranes and to give a seminar on antimicrobial peptides

Part IV – Teaching Experience at National Academic Institutions

Year	Institution	Lecture/Course
1999-2000	G. D'Annunzio University, Chieti, Faculty of Medicine	Practical Courses of Biochemistry/Degree Course in Medicine
2003-2011	Sapienza University of Rome, Faculty of Medicine and Psychology (ex-II Faculty of Medicine)	Lecturer of Biochemistry (2 CFU)/ Teaching course of "Bases of Cellular Functioning" (Basi del Funzionamento Cellulare)/Degree Course in Nursing (S. Andrea and S. Pietro Hospital)
2005-2013	Sapienza University of Rome, Faculty of Medicine and Psychology (ex-II Faculty of Medicine)	Practical Courses ("Attività Didattica Interattiva" 2CFU) of Biochemistry/Degree Course in Medicine (S. Andrea Hospital)
2005-2012	Sapienza University of Rome, Faculty of Medicine and Psychology (ex-II Faculty of Medicine)	Member of the Examination Commission of Biochemistry and Molecular Biology/ Degree Course in Medicine (S. Andrea Hospital)
2006-2011	Sapienza University of Rome, Faculty of Medicine and Psychology (ex-II Faculty of Medicine)	Lecturer of Biochemistry (1 CFU)/ Teaching course of "Biology, Biochemistry and Medical Genetics" (Biologia, Biochimica e Genetica Medica)/Degree Course in Obstetrician (S. Andrea Hospital)
2011-2012	Faculty of Medicine and Psychology (ex-II Faculty of Medicine)	Lecturer of Biochemistry, 2 CFU)/ Teaching course of "Morphological and Functional Bases of the Cell" (Basi Morfologiche e Funzionali della Cellula)/Degree Course in Nursing (S. Andrea Hospital)

2011-present	Sapienza University of Rome, Faculty of Medicine and Psychology	Lecturer of Biochemistry (4 CFU)/ Teaching course of "Biochemical and Biological Sciences" (Scienze Biochimiche e Biologiche)/Degree Course in Prevention Techniques in the Environment and in the Workplace
2012-present	Sapienza University of Rome, Faculty of Medicine and Psychology	Lecturer of Biochemistry, 3 CFU (3 CFU + + 2 CFU per attività seminariali dal 2018) /Teaching course of "Bases of Cellular Functioning" (Basi del Funzionamento Cellulare)/ Degree Course in Biomedical Laboratory Techniques. Coordinator of the Teaching Course and President of the Examination Commission up to 2018
2014-2015	Sapienza University of Rome Faculty of Medicine and Dentistry	Lecturer of Biochemistry (2 CFU)/ Teaching course of "Molecular and Cellular Basis of Life" (Basi Molecolari e Cellulari della Vita)/Degree Course in Nursing ASL H (Nettuno). Coordinator of the Teaching Course and President of the Examination Commission
2015-present	Sapienza University of Rome, Faculty of Pharmacy and Medicine & Faculty of Medicine and Dentistry	Lecturer of Biochemistry, 2 CFU (2 CFU + 2 CFU per ADE dal 2017)/Teaching course of "Molecular and Cellular Basis of Life" (Basi Molecolari e Cellulari della Vita)/Degree Course in Nursing T (Isernia). Coordinator of the Teaching Course and President of the Examination Commission
2017-present	Sapienza University of Rome, Faculty of Pharmacy and Medicine & Faculty of Medicine and Dentistry	Lecturer of Biochemistry (2 CFU)/ Teaching course of "Molecular Basis of Life" (Basi Molecolari della Vita)/Degree Course in Psychiatric Rehabilitation Technique. Coordinator of the Teaching Course and President of the Examination Commission
2007-present	Sapienza University of Rome, Faculty of Pharmacy and Medicine	Member of numerous Commissions for Master's Degree in Cellular Biology, Medicine, Pharmaceutical Biotechnology and for Bachelor's Degree in Nursing

***"Tutoring Activities"* at Sapienza University**

Year	Institution	Position
2006-present	Sapienza University of Rome, Department of Biochemical Sciences Faculty of Pharmacy and Medicine	Supervisor of Master's Degree Thesis in Cell Biology, Pharmaceutical Biotechnology, Pharmaceutical Chemistry and Technology (more than 10 theses)
2010-present	Sapienza University of Rome, Department of Biochemical Sciences Faculty of Pharmacy and Medicine	Tutor of 4 Ph.D Thesis in Biochemistry (XXVI, XXIX, XXX, XXXII cycles)
2017-2019	Sapienza University of Rome, Department of Biochemical Sciences, Faculty of Pharmacy and Medicine	Tutor of students from Higher Education Institutions within the Project "Alternanza Scuola-Lavoro" (80 hours per year)

Part V - Awards and Honors

Year	Title
1995-1996	Annual collaboration scholarship to assist undergraduate students of Biological Sciences Degree Course, during practical laboratory exercises of Biochemistry.
1998	International Fellowship financed by Sapienza University for 1 year of research period abroad (Karolinska Institute, Stockholm).
1999-2000	Research Grant at "G. D'Annunzio" University of Chieti, Department of Biomedical Sciences, Chieti
2001	McGraw Hill Prize for the best scientific work of young scientists.
2011	"Atomium Culture" selection for publication of an article in the main European newspapers: http://www.elpais.com/articulo/sociedad/Salvemos/ranas/salvar/seres/humanos/elpepusoc/20100913elpepusoc_9/Tes http://www.faz.net/s/RubCEA270411FF84533BCAF137CD8BFB763/Doc~E596E59DC516D4AF985BDD33D903BE31C~ATpl~Ecommon~Scontent.html
2017-2018	Recipient of "Fondo di Ateneo per la Premialità" ai sensi dell'art. 9 della Legge n. 240/10 from Sapienza University of Rome

EDITORIAL ACTIVITIES:

2009-2012: EDITORIAL BOARD MEMBER of "*Open Journal of Biochemistry"* and "*World Journal of Biological Chemistry*"

2015-present: EDITORIAL BOARD MEMEBR of "*Current Protein & Peptide Science"* ISSN:1389-2037. Publisher: Bentham Science https://benthamscience.com/journals/current-protein-and-peptide-science/editorial-board/

2018-present: EDITORIAL BOARD MEMBER of "*Biochimica et Biophysica Acta-Biomembranes"* ISSN: 0005-2736. Publisher: Elsevier https://www.journals.elsevier.com/biochimica-et-biophysica-acta-biomembranes/editorial-board

2015-present: ASSOCIATE EDITOR of "*Frontiers in Chemistry, Section Chemical Biology"*, ISSN:2296-2646. Publisher: Frontiers Media S.A. https://www.frontiersin.org/journals/chemistry/sections/chemical-biology

2015-2017: SECTION EDITOR of *Biochimica et Biophysica Acta-Biomembranes* ISSN: 0005-2736. Publisher: Elsevier

2019- SECTION EDITOR of "*Antibiotics*" section "Antimicrobial Peptides" ISSN: 2079-6382.
Publisher:MDPI AG. https://www.mdpi.com/journal/antibiotics/sectioneditors/Antimicrobial_Peptides

2019- APPOINTED AS SECTION EDITOR of "*Current Protein & Peptide Science"* ISSN: 1389-2037 and "*Protein and Peptide Letters"* ISSN:0929-8665. Publisher: Bentham Science

2018- present APPOINTED AS BENTHAM BRAND AMBASSADOR

INVITED GUEST/CO-GUEST EDITOR:

2009 for a special issue on "Amphibian Antimicrobial Peptides", published in *Biochimica et Biophysica Acta-Biomembranes* (ISSN 0005-2736) vol. 1788, issue 8 (Guest Editor)

2011 for a "Multi-Author Review" on "Host-defence peptides: from biology to therapeutic strategies" published in *Cellular and Molecular Life Sciences* (ISSN 1420-682x) vol. 88 issue 13 (Guest Editor)

2016 for a special issue on "Antimicrobial Peptides in Medicinal Chemistry: Advances and Applications" published in *Current Topics in Medicinal Chemistry*"(ISSN 1568-0266) vol 16 issue 1 (Co-Guest Editor)

2019 for a special issue on "Peptide nanomaterials for drug delivery applications" for *Current Protein and Peptide Science*"(ISSN 1389-2037) (CPPS-2019-HT8-668-X, in progress) (Co-Guest editor)

EXTERNAL TUTOR OF FOREIGN STUDENTS FOR EXPERIMENTAL WORK/THESIS

Start	End	Institution	Description
01.03.2007	15.06.2007	Department of Biochemical Sciences, Faculty of Pharmacy and Medicine Sapienza University of Rome	"External Tutor" of the Ph.D. student Olfa Tabbene from "Laboratoire des Interactions Légumineuses-Microorganismes, Centre de Biotechnologie", Technopole Borj-Cedria (**TUNISIA**) for the experimental work and Ph.D. thesis
23.02.2012	15.07.2012	Department of Biochemical Sciences, Faculty of Pharmacy	"External Tutor" of an Erasmus student (Gerard Terradas Rius) from

		and Medicine, Sapienza University of Rome	**University of Barcelona, SPAIN** for the experimental work and Bachelor's Degree Thesis in Biotechnology.
13.01.2014	06.06.2014	Department of Biochemical Sciences, Faculty of Pharmacy and Medicine Sapienza University of Rome	"External Tutor" of an undergraduate student (Georgina Ivette López Cortés) from the **University of Guadalajara, MEXICO** (Degree Course in Biology), for Lab training period
01.05.2018	31.05.2018	Department of Biochemical Sciences, Faculty of Pharmacy and Medicine Sapienza University of Rome	"External Tutor" of an undergraduate student (Lærke Maria Damsted Holmlund) from the **University of Copenhagen, DENMARK** (Degree Course in Cell Biology) for a Lab training period within the Project "Antimicrobial Peptides – Potential Therapeutic Agents"

INVITED REVIEWER/EXAMINER OF Ph.D. THESIS PRESENTED AT NATIONAL UNIVERSITIES OR FOREIGN INSTITUTIONS:

2009/2010 **"External Advisor**"of a Ph.D. student (Chiara Pelillo), Doctorate Course in Molecular Biomedicine, **Trieste University**

2016 "**REVIEWER"** of a Ph.D. Thesis in Chemistry. Title: Enhancing the activity of the proline-rich antimicrobial peptide Chex1-Arg 20 by chemical multimerization. University of Melbourne, MELBOURNE, **AUSTRALIA.**

2016 **"REVIEWER"** of a Ph.D. Thesis in Biochemistry. Title: "Optimised bacterial production and characterization of natural antimicrobial peptides with potential application in agriculture". University of Stellenbosch, **SOUTH AFRICA**.

2016 **"REVIEWER"** of a Ph.D. Thesis in School of Optometry and Vision Science. Title: "Enhancing the activity of the proline-rich antimicrobial peptide Chex1-Arg 20 by chemical multimerization". University of New South Wales, UNSW SYDNEY NSW 2052 **AUSTRALIA.**

2016 **"REVIEWER"** of a Ph.D. Thesis in Biochemistry and Molecular Biology. Title: Characterization and development of the antimicrobial peptide SET-M33 for the identification of novel antibiotics against MDR-bacteria. **University of Siena**

2017 **"REVIEWER"** of a Ph.D. Thesis in Biotechnology. Title: "Structural Insights into de-novo designed antimicrobial peptides: mechanistic analysis against plant and animal pathogens". University of Calcutta, **INDIA.**

2018 **"REVIEWER"** of a Ph.D. Thesis in Molecular Biomedicine, (XXXI Cycle) Title: "Optimization of BMAP18-an antiinfective peptide for the treatment of pulmonary infections", **University of Trieste**

2018 **"REVIEWER"** of a Ph.D. Thesis in Chemical and Pharmaceutical Science.s Title: "Polyalkylguanidines:new weapons to tackle bacterial resistance". **University of Siena**

MEMBER OF THE "EXPERT BOARD" FOR AWARDING THE DOCTOR OF PHILOSOPHY'S DEGREE AT FOREIGN INSTITUTIONS:

2011 **"External Examiner**" of the oral dissertation of Anusha P. Subasinghage to award the Doctor of Philosophy's in Biochemistry. Thesis title: "Structural studies of antimicrobial peptides". University College of Dublin, **IRLAND.**

2019 **"REVIEWER" and Member of the"Expert Board"** for Assessment and Defending the Ph.D. Thesis in Biophysics of Tomislav Rončević. Title: Identification, redesign and characterization of anuran antimicrobial peptides. *From targeted DNA sequencing and database analyses to peptide antibiotics*, University of Split, **CROATIA**

INVITED MEMBER OF SCIENTIFIC/ORGANIZING COMMITTEE FOR THE FOLLOWING INTERNATIONAL CONFERENCES:

2010: First International Conference on Antimicrobial Research (November, 3-5), Valladolid (**Spain**).
2012: Second International Conference on Antimicrobial Research (November, 21-23), Lisbon (**Portugal**)
2018: V International Conference on Antimicrobial Research (May, 24-25), Torremolinos **Málaga (Spain)**
2018: 35th European Peptide Symposium (August, 26-31) **Dublin** (**Irland)**
2019: 9th International Meeting on Antimicrobial Peptides (August 28-30), **Utrech, The Netherlands**

INVITED CHAIR FOR THE FOLLOWING INTERNATIONAL CONFERENCES:

2006: 2nd International Congress Natural Peptides to Drugs, 18-21 April, Zermatt, **Swizerland.**
2012: 2nd New Antimicrobials Workshop, 25-26 May, **Trieste**.
2014: 3rd International Conference on Antimicrobial Research, October 1-3, Madrid, **Spain.**
2018: 35th European Peptide Symposium (August, 26-31) **Dublin** (**Irland)**
2019: 9th International Meeting on Antimicrobial Peptides, (August 28-30), **Utrecht, The Netherlands**

INVITED LECTURER FOR A MASSIVE ONLINE COURSE (MOOC) BY PASTEUR INSTITUTE (PARIS, FRANCE)

2016: Lecture on "Antimicrobial Peptides" for the MOOC on "Innate Immunity and Infectious Diseases" (30.11.2016). This MOOC targets people (medical students, scientific Master, Ph.D. students and all scientists) with a medical or scientific training background who are interested in all aspects of innate immunity **https://www.fun-mooc.fr/courses/course-v1:pasteur+96004+session01/about**

INVITED VISITING PROFESSOR at University of Brasilia, at the Toxinology Laboratory and Brazilian Center for Protein Research, BRASIL, to give courses/seminars on antimicrobial peptides to Ph.D. students for two weeks, on March 2020

SCIENTIFIC DISCLOSURE on "il Blog de Il Fatto Quotidiano" (2018)
https://www.ilfattoquotidiano.it/2018/09/06/antibiotici-la-scoperta-alcuni-li-produce-lorganismo-umano-ma-possono-essere-una-terapia/4607521/

INVITED MEMBER OF MOLECULAR BIOLOGY CLUSTER NETWORK Potsdam-Germany
2011: (MOBiCLUP, http://www.mobiclup.de/?lang=1)

SOCIETY MEMBERSHIP

Since 1997 The Italian Society of Biochemistry and Molecular Biology
Since 2004 The American Society for Biochemistry and Molecular Biology (ASBMB)
Since 2005 The American Chemical Society (ACS)
Since 2012 The European Peptide Society
Since 2016 The Italian Peptide Society
2014-2016 The American Society of Microbiology

ELECTED MEMBER OF THE SCIENTIFIC COMMITTEE OF THE ITALIAN PEPTIDE SOCIETY

SINCE 2016: http://www.italianpeptidesociety.it/it/organizzazione

APPOINTED AS NATIONAL REPRESENTATIVE OF ITALY AT THE EUROPEAN PEPTIDE SOCIETY (EPS COUNCIL)

SINCE 2018: for the four years period 2018-2022 https://www.eurpepsoc.com/eps-council/

INVITED SPEAKER AT THE FOLLOWING INTERNATIONAL CONFERENCES:

2005 ***The V Gordon Research Conference*** *on Antimicrobial Peptides*, **Ventura, CA**. **USA**. March 6-11. Title: "Temporins exert a potent leishmanicidal activity on both promastigote and amastigote stages"

2006 ***The 2nd International Congress on Natural Peptides to drugs***, **Zermatt**, **Switzerland**. April, 18-21. Title: "Short-host defence peptides from frog skin"

2007 ***The 51st Annual Meeting of the American Biophysical Society*****, Baltimore, MD, USA.** March, 3-7. Title: "Short and unique membrane-active antimicrobial peptides from frog skin"

2007 ***The VI Gordon Research Conference on Antimicrobial Peptides***, il Ciocco, **(Lu) Italy**. May, 15-20. Title: "A synergistic effect between temporins controls bacterial resistance due to lipopolysaccharide layer"

2008 ***The 1st Italy-Korea Symposium on Antimicrobial Peptides***, **Gwangju-Korea**. July, 24-25. Title: "Anti-infective and anti-endotoxin membrane-active short peptides from frog skin"

2008 ***The 30th European Peptide Symposium***, **Helsinki, Finland**. 31 August-5 September. Title: "Synergism Between Temporins in Killing Gram-negative bacteria and in Neutralizing LPS Activation of Macrophages"

2009 ***The First International Workshop on Antimicrobial Peptides*****, Cagliari, Italy.** September, 9. Title: "Temporins, esculentins and bombinins H: host-defence

peptides from amphibian with potent antimicrobial activities and synergistic effects"

2010 ***The 455th Wilhelm und Else Heraeus-Seminar on Biophysics of Membrane-Active Peptides*, Bad Honnef, Germany.** April, 11-14. Title: "Antimicrobial Peptides of the Temporin Family: Features, Biological Activities and Membrane-Interactions"

2012 ***2nd New Antimicrobials Workshop***, **Trieste**. May 25-26. Title: "Short membrane-active peptides from amphibian skin to fight microbial pathogens"

2012 ***56th National Meeting of the Italian Society of Biochemistry and Molecular Biology,* Chieti (Italy).** September, 26-29. Title: "A lesson from amphibian skin for the development of new anti-infective agents"

2013 ***The IX Gordon Research Conference** on Antimicrobial Peptides*, **Ventura (LA), CA, USA**, February 24-March 1. Title:"Fighting microbial infections: membrane-active peptides isolated from amphibian skin"

2014 ***The 3rd International Conference on Antimicrobial Research***, **Madrid, Spain,** October 1-3. Title: "A frog skin-derived antimicrobial peptide against *Pseudomonas aeruginosa*-induced mucosal infections"

2016 ***International Regulatory Peptide Society***, **Rouen, France**, July, 12-14. Title: "Esculentin-1a(1-21) and its diastereomer: frog skin-derived peptides with anti-*Pseudomonal* activities"

2016 ***Institut Pasteur International Network***. From Basic Science to Biomarkers & Tools in Global Health. Scientific Symposium, **Paris, France,** November 29-December 2. Title: "Frog-skin derived peptides: are they new weapons against *Pseudomonas aeruginosa*-induced infections ?"

2017 "***Boulder Peptide Symposium".* Boulder, Colorado (USA)-** September 25-28, Title:"Derivatives of the Frog Skin Peptide Esculentin-1a with Promising activity Against Infections Induced by Pseudomonas Aeruginosa"

2018 ***Cost Action CM1407, 5th MC/WG,* Malta**, March, 1-2. Title: "How to struggle Pseudomonas aeruginosa-associated infections? A lesson from the amphibian skin-derived peptide Esculentin(1-21) and its diastereomer".

2018 ***World Ophthalmology Congress,* Barcelona, Spain**. June, 16-19. Title: Esculentin-1a derived Peptides: Promising anti-Pseudomonal Drugs for the Development of Antimicrobial Contact Lenses

2018 ***XV Congress of the Italian Federation of Life Sciences (FISV),*** Rome, 18-21 September, 2018. Title: "How to control *Pseudomonas aeruginosa*-induced pneumonia? A lesson from derivatives of the amphibian skin peptide esculentin-1a"

2018 ***Cost Action CM1407,* Tenerife,** December 13-14. Title: "Esculentin-1a derived peptides: Potential new drugs to target *Pseudomonas aeruginosa* pulmonary infection?

2019 ***Gordon Research Conference on Antimicrobial Peptides*,** il Ciocco, (**Lucca**), 24 February 24- March 1. Title: How to control Pseudomonas aeruginosa-induced pneumonia ? A lesson from the amphibian skin derived peptide Esculentin(1-21) and its diastereomer"

2020 **The Seventh International Symposium on Antimicrobial Peptides (AMP 2020), Paris,** June 3-5th, **France (**https://research.pasteur.fr/en/event/7th-international-symposium-on-antimicrobial-peptides-amp2020/) *Title to be announced*

Since 1997 *Poster presenter in more than 50 National and International Meetings*

INVITED GUEST FOR SEMINARS

2000 Title: "Frogs make short peptides with antibacterial and antiparasitic activity. The importance of a D amino acid" - Karolinska Institutet (MTC), May 5, **Stockholm- Sweden**.

2000 Title: "Antimicrobial peptides from frog skin and their role in innate immunity." Oftalmic Industry of SIFI, June 5, **Catania, Italy.**

2006 Title: "Frog skin peptides in the antimicrobial defence mechanisms". University of L'Aquila, July 5, **L'Aquila**, **Italy.**

2008 Title: "Role of natural peptides in the defence mechanims against microbes and in the antibiotic-resistance. February 22, University of Roma Tre", **-Rome**

2009 Title: "Temporins: short membrane-active peptides from frog skin with anti-infective and anti-endotoxin properties". May 7-**Karlsruhe Institute of Technology, Germany**

2011 Title: "Antimicrobial Peptides from frog skin: novel anti-infective agents with expanding properties". June 10 -The Fraunhofer Institute for Biomedical Engineering IBMT **Potsdam, Germany**

2014 Title: "Amphibian Skin Peptides: potential candidates for the development of new anti-infective agents" April 16, Stopford Building, University of Manchester Medical School **Manchester**, **United Kingdom**

2018 Title: "How to squash the "superbug" *Pseudomonas aeruginosa*? A lesson from the amphibian skin-derived Esculentin(1-21) and its diastereomer". January 18th, **Pasteur-Italia Fondazione Cenci Bolognetti Institute, Rome**

2018 Title: "Efficacy of Esculentin peptides against Pseudomonas-induced pneumonia and keratitis" October 9, **University of Graz, Austria**

2019 Title: "Unravelling antimicrobial peptides for treatment of Pseudomonas infections: efficacy studies and nanotechnology approaches for their delivery" within the seminar series of "I seminari del Dì di Venere" , PhD Course in Biochemistry. April 12, **Sapienza University of Rome**.

2019 Title: "Antipseudomonal activity of esculentin peptides: efficacy studies and nanotechnology approaches for their delivery" April 25, **University of Split, Croatia**

PATENTS:

2018 US patent n. 10059752. Title of invention: ESCULENTIN 1A DERIVATIVES AND USES THEREOF. Inventors: Alison McDermott (USA) and Maria Luisa Mangoni (50%) (IT). Ownership: Sapienza University (IT) and Houston University (US) (50%) https://www.uniroma1.it/it/brevetto/us201414506383 granted on August, 28th, 2018

2018 US pending divisional application N. 16/16112741 filed on August 26, 2018

2019 A new application is going to be filed at Sapienza University. Inventors: Maria Luisa Mangoni (Sapienza) and Dr. Loretta Ferrera (G. Gaslini Institute of Genoa). On June 24 2019, the Technical Patent Committe at Sapienza University has approved the presentation of this new patent application in Italy. Ownership: Sapienza University (50%); Fondazione per la Ricerca sulla Fibrosi cistica - onlus (25%) and Istituto G. Gaslini (25%).

REFEREE ACTIVITY

2004-present **For scientific publications in international peer-reviewed journals.** Among the most recent journals: *FEBS Journal*; *FEBS Letters*; *Journal of Infectious Disease*; *Nature Protocols*; *Aquaculture*; *Peptides*; *Biochimie*; *Biochimica et Biophysica Acta-Biomembranes; Biochimica et Biophysica Acta-General Subjects*; *Antimicrobial Agents and Chemotherapy*; *Developmental and Comparative Immunology*; *Regulatory Peptides*; *Experimental Dermatology*; *Journal of Peptide Science*; *Journal of Visualized Experiments; Journal of Peptide Research; Current Protein and Peptide Science; Current Medicinal Chemistry; Biochemistry; European Journal of Microbiology, PloSOne; Journal of Medical Microbiology, Bioinformatics; Scientific reports;Nanoscale; Drug Development and Industrial Pharmacy; Chemical Biology;Nanomaterials; Frontiers in Chemistry; European Journal of Medicinal Chemistry; Scientific Reports; Nano Biomedicine and Engineering; Acta Biomaterialia; British Journal of Pharmacology; Frontiers in Microbiology; Journal of Pathogen; Nanoscale; ACS Chemical Biology; Peer J; Virulence;Frontiers in Pharmacology.*

2004-present **For Research Projects presented to Foreign Research Institutes:**

(i) "*International Foundation for Science*" (2004)
(ii) "*National Science Foundation*" (2006)
(iii) "*Austrian Science Fund"* (FWF) (2014)
(iv) "*Swedish Research Funding Foundation*" (Knowledge Foundation), 2019

2011-present **For Research Projects presented to Italian Institutes:**

(i) University of Trieste (years 2011 and 2013)
(ii) SIR Project funded by MIUR (2014)

Part VI - Funding Information [grants as PI-principal investigator]

Year	Title	Program	Grant value
2005	Title:“Biological activity and mechanism of action of antimicrobial peptides from amphibian skin secretions”. **PI of Operative Unit.** Collaborative Project involving 4 Research Units coordinated by Prof. Giovanna Batoni, University of Pisa	Italian Ministry of Education, University and Research (MIUR)/PRIN 2005 Prot.2005062410_004	MIUR cofunding assigned to the Project: 79,000 euro. MIUR cofunding assigned to Mangoni’s Unit: 19,000 euro (total funding of the Unit, 27,200 euro) for 2 years
2007	Title:"Studies on the structure-function relationships of antimicrobial peptides and their potential therapeutic application” **PI**	Sapienza University/Ricerche di Ateneo Federato di Scienze delle Politiche Pubbliche e Sanitarie SPPS. Prot. 26F078XYK	4,000 euro for 1 year
2008	Title:"Natural antimicrobial peptides and their synthetic analogs: mechanism of action and therapeutic efficacy” **PI**	Sapienza University/Ricerche di Ateneo Federato di Scienze delle Politiche Pubbliche e Sanitarie SPPS. Progetto di Ricerca di Facoltà. Prot. C26F08H85S	8,875 euro for 1 year
2008	Title:“Structure-function relationships and mechanism of action of natural and synthetic antimicrobial peptides in the defense against antibiotic-resistant pathogens and LPS-induced shock” **PI (National coordinator)** Collaborative Project involving 4 units	MIUR/ PRIN 2008. Prot. 2008KCLR7M	MIUR cofunding assigned to the Project: 76,740 euro (total funding, 120,381). MIUR cofunding assigned to Mangoni’s Unit: 26,740 euro (total funding of the Unit, 38.237 euro) for 2 years
2009	Title: "Natural antimicrobial peptides and their synthetic analogs: mechanism of action and therapeutic efficacy” **PI**	Sapienza University/Ricerche di Ateneo Federato di Scienze delle Politiche Pubbliche e Sanitarie. Progetto di Ricerca di Facoltà-Prot. C26F095HL2	9,015 euro for 1 year
2011	Title: “Development of new host-defence like peptides and	Italian Cystic Fibrosis Foundation/ FFC#14/2011	Total funding, 70,000 euro for 2

	lipopeptides against lung pathogens: in vitro and in vivo studies" **PI**		years
2012	Title: "Development of short-sized native peptides and their synthetic analogues for the treatment of mucosal surfaces-associated infections" **PI**	Sapienza University. Progetto Ricerca Università. Prot. C26A12NPXZ	7,000 euro for 1 year
2013	Title: "Antimicrobial peptides as novel strategies for treatment of lung bacterial infections and development of inhalable dry podwers" **PI**	Sapienza University. Progetto Ricerca Università. Prot. C26A13PBXJ	2,000 euro for 1 year
2014	Title: "Fighting microbial infections: a multidisciplinary strategy to develop short-sized native peptide-based antimicrobials" **PI**	Istituto Pasteur Fondazione Cenci-Bolognetti	60,000 euro for 3 years
2014	Title: "Development and preclinical testing of a novel antimicrobial peptide to treat Pseudomonas aeruginosa-induced lung infections" **PI**	Italian Cystic Fibrosis Foundation/ FFC#11/2014	53,000 euro for 2 years
2014	Title: "Derivatives of naturally-occurring peptides as novel drugs for treatment of P. aeruginosa lung infections: in vitro studies and preclinical testing" **PI**	Sapienza University. Progetto Ricerca Università. Prot. C26A14STJZ	6,000 euro for 1 year
2016	Title: "Derivatives of a naturally-occurring peptide for the development of a novel "antibiotic therapy" against bacterial lung infections" **PI**	Sapienza University. Progetto Ricerca Università RM116154C8434109	10,500 euro for 1 year
2017	Title: "Frog skin-derived peptides for treatment of Pseudomonas aeruginosa lung infection and bronchial epithelial repair: advanced in vitro and in vivo characterization and development of polymeric nanoparticles for lung delivery" **PI**	Italian Cystic Fibrosis Foundation/ FFC#15/2017	60,000 euro for 1 year

2018	Title: “Development of novel peptide-based formulations and nano/bio-materials against pulmonary and ocular surface microbial infections” **PI**	Istituto Pasteur Italia Fondazione Cenci-Bolognetti	60,000 euro for 3 years
2018	Finanziamento attività base di ricerca **PI**	Italian Ministry of Education, University and Research (MIUR)	3,000 for 1 year
2018	Title: Novel peptide-based therapeutic approaches for treatment of bacterial pulmonary infections **PI**	Sapienza University. Progetto Ricerca Università RM11816436113D8A.	10,000 for 1year
2019	Antimicrobial peptides from amphibian skin for treatment of lung pathology in cystic fibrosis: advanced in vitro and in vivo functional characterization. **PI**	Italian Cystic Fibrosis Foundation FFC 8/2019	105.000 euro for 2 years

2014 **Scientific Responsible of the Project** funded by Sapienza University of Rome for research activity in collaboration with the Visiting Professor Tabbene Olfa, Center of Biotechnology, Ecopark of Borj Cedria, Hammam-Lif, Tunisia (from March 15-June 15, 2014). Grant value 8.100 euro

- **PARTICIPANT TO THE FOLLOWING PROJECTS**:

Project funded by Istituto Pasteur Fondazione Cenci-Bolognetti in the period 2001-2002. Title: "Defense mechanisms in innate immunity" PI: Prof. Donatella Barra. The project has been done in collaboration with Prof. Günther Kreil (Austrian Academy of Sciences, Salzburg, Austria); Prof. David Andreu (Universitat Pompeu Fabra, Barcelona, Spain); Prof. Ylva Engstrom (Stockholm University, Sweden), Prof. Andrea Rinaldi (Università di Cagliari) Prof. Yechiel Shai (Weizmann Institute of Science)

PRIN 2003 Title: "Analisi proteomica dell'espressione e del ruolo di mediatori peptidici dell'immunità innata su linfociti di soggetti affetti da patologie neurodegenerative". PI: Prof. Maurizio Simmaco (Università La Sapienza). Funding: 55.800 euro for 2 years. The project has been done in collaboration with Prof. Piero Pucci (Università di Napoli Federico II), coordinator of the Project.

Project funded by Sapienza University (ATENEO 2008). Title: Caratterizzazione strutturale e funzionale di peptidi dotati di proprietà antimicrobiche e/o farmacologiche. PI: Prof. Donatella Barra, Dipartimento di Scienze Biochimiche -Prot. C26A08AS2B.

Project funded by Istituto Pasteur Fondazione Cenci-Bolognetti (01-07-2009 to 30-06-2012) Title: "Peptide effectors of innate immunity". PI: Prof. Donatella Barra, Dipartimento di Scienze Biochimiche

Project funded by Sapienza University (ATENEO 2009) Title: Caratterizzazione strutturale e funzionale di peptidi dotati di proprietà antimicrobiche e/o farmacologiche. PI: Prof. Donatella Barra, Dipartimento di Scienze Biochimiche - Prot. C26A09AS9Z.

Project funded by Sapienza University (ATENEO 2010) Title: "Peptidi antimicrobici naturali e loro analoghi di sintesi: meccanismo d'azione e ruolo nell'interazione ospite-patogeno". PI: Prof. Donatella Barra, Dipartimento di Scienze Biochimiche-Prot. C26A10FENR.

Project funded by Sapienza University (ATENEO 2011) Title: Caratterizzazione strutturale e funzionale di peptidi bioattivi e loro ruolo nei processi immunitari. PI: Prof. Donatella Barra, Dipartimento di Scienze Biochimiche. Prot. C26A11HHB5

Project funded by Sapienza University (ATENEO 2015) Title: Evaluation of antiviral activity of frog skin antimicrobial peptides and derivatives. PI: Prof. Lucia Nencioni. Dipartimento di Sanità Pubblica e Malattie Infettive. Prot. C26A15PH4A.

FILAS RU-2014-1020 (funded by Regione Lazio) Title: "Piattaforma di sistemi cellulari eucarioti per l'espressione di proteine eterologhe e per lo screening tossicologico di interferenti alimentari, microambientali e bioattivi" from 29-07-2015 to 29-07-2017. PI: Prof Paolo Sarti. Grant value: 218.750 euro

Progetto Grandi Attrezzature Scientifiche 2016. Ateneo La Sapienza. Title: Platform for the Hypoxic Analysis of Cell Behaviour (Hyp-ACB). PI: Prof. Francesca Cutruzzolà. Numero protocollo: GA116154C8A94E3D. Grant value: 440.000 euro

Progetto Grandi Attrezzature Scientifiche 2018. Ateneo La Sapienza. Title: Platform for a precision mass measurement in sequencing of therapeutic proteins. PI: Prof. Alberto Boffi Numero protocollo: GA118164897F9CB1. Grant value: 512.000 euro

Part VII – Research Activities

Keywords: Antimicrobial peptides; peptide-membrane interactions; antibiotic resistance; innate immunity, drug delivery systems; cystic fibrosis

Brief Description

The Research activity of Prof. Mangoni (see **http://www.marialuisamangoni.it/**) mainly refers to Bioactive Peptides and falls within the ***research line of Applied Biochemistry and Biotechnology of the Department of Biochemical Sciences***, Sapienza University. During the past 10 years, she has being focusing on the structure-function characterization of amphibian skin-derived antimicrobial peptides (AMPs) *or de-novo* designed analogs for the development of new therapeutic agents against the worldwide alarming threat of multidrug-resistant infections.
As shown by her studies, in contrast with traditional antibiotics, amphibian skin AMPs have: (i) a rapid killing mechanism based on the perturbation of the microbial plasma-membrane, causing irreparable damage that hardly induces resistance; (ii) an anti-biofilm activity and (iii) additional biological properties including the neutralization of the toxic effect of the bacterial lipopolysaccharide as well as the promotion of wound healing activity.
Together with the team of Prof. Alison M. McDermott (Houston University, US), a frog-skin derived peptide i.e. Esc(1-21) was found to display a significant *in vivo* efficacy in a mouse model of keratitis induced by the bacterium *Pseudomonas aeruginosa.* Note that so far only a few *in vivo*

experiments have provided signs of clinical benefit of AMPs against keratitis. Remarkably, these encouraging results led to the filing of a patent which was granted last year (N.10059752). At the same time, Prof. Mangoni discovered how the presence of only two L-to D amino acids substitution within Esc(1-21) is sufficient to improve the peptide's selectivity index, biostability, wound healing activity and *in vivo* therapeutic efficacy. In parallel, she demonstrated how this selective epimerization can affect the peptide's ability to interact with the bacterial lipopolysaccharide (LPS) or model membranes (liposomes) as well as with nucleotides (i.e. guanosine pentaphosphate, ppGpp) preventing biofilm formation. Furthermore, in collaboration with Prof. Peter Di (Pittsburgh University, US), Mangoni's group was able to show the *in vivo* ability of these peptides to significantly reduce pulmonary Pseudomonas infection after a single intra-tracheal instillation at a very low dosage without provoking an inflammatory response. However, a key step for AMPs development is a proper delivery system to target them at the site of infection at effective concentration, with minimal off-target effects. In this context, by means of nanotechnology approaches, Prof. Mangoni has shown, for the first time, how encapsulation of these peptides inside engineered biodegradable polymeric nanoparticles is an excellent strategy (i) to overcome lung barriers (i.e. the sticky mucus lying the airways epithelia, mostly in cystic fibrosis sufferers) that usually interfere with the antibiotic treatment and (ii) to prolong the antimicrobial efficacy of the encapsulated peptide.

Consistent with the above goals, the main objectives of her current scientific research include:

- The development of new inhalable formulations to optimize the pulmonary delivery of peptides and to provide their controlled release over time;
- The development of antimicrobial medical devices, such as peptide-immobilized contact lenses, to prevent microbial colonization of the lenses and the incidence of ocular surface infections.
- The development of peptide-based nano-formulations to apply locally in a suitable solution or through the use of nanoparticulate systems, in order to accelerate wound-healing of the corneal/bronchial epithelium or the skin.
- Design and characterization of peptide analogs for SAR studies

Finally, together with Prof. Stella (Tor Vergata University, Rome), by using experimental conditions that allow both the determination of microbicidal activity and the measurement of peptide/membrane association directly in bacteria, she successfully bridged the gap between biological and physicochemical studies and identified the amount of cell-bound peptide molecules needed for killing a bacterium. Studies aimed at assessing the exact site of association of peptides to bacterial cells are in progress.

Experimental Activities

The following experimental activities are mainly performed by Prof. Mangoni's group:

- Antimicrobial assays on germ forms using peptides alone or in combination with other drugs to evaluate their possible synergistic effect;
- Colorimetric cytotoxicity assays on mammalian cells;
- Mode of action studies on both intact microbial cells and model membranes, including:
  - killing kinetics of peptides under environmental conditions mimicking those found *in vivo*;
  - membrane depolarization/perturbation activity assays on intact cells by measuring the intracellular influx of fluorescent probes or the release of intracellular enzymes;
  - membrane perturbation assays on liposomes loaded with fluorescent markers of different size;
  - membrane-binding assays by fluorescence spectroscopy;
- Lipopolysaccharide neutralization assays along with the underlying molecular mechanism;
- Wound healing assays.

Part VIII – Summary of Scientific Achievements

Product type	Number	*Year Start/End*	*Database*
Articles in peer-reviewed and indexed international Journals	**93**	**1996-2019**	*PubMed.gov /Scopus*
Chapters in Scientific and indexed international Books	**5**	**2010-2017**	*PubMed.gov and/or Scopus*
First author/First author & corresponding author			
calculated on 98 publications (93 articles+5 chapters)	**19**	**1996-2019**	
calculated on 93 articles	18	1996-2019	
Single & corresponding author			
calculated on 98 publications (93 articles+5 chapters)	**4**	**1996-2019**	
calculated on 93 articles	4	1996-2019	
Last author/Last author & corresponding author			
calculated on 98 publications (93 articles+5 chapters)	**31**	**1996-2019**	
calculated on 93 articles	28	1996-2019	
Co-corresponding author			
calculated on 98 publications (93 articles+5 chapters)	**3**	**1996-2019**	
calculated on 93 articles	3	1996-2019	
% first/last/ corresponding author			
calculated on 98 publications	**58.16%**	**1996-2019**	
calculated on 93 articles	57%	1996-2019	
Total publications (articles) in peer-reviewed international Journals with Impact Factor, IF	91	**1996-2019**	*Incites-JCR Journal Citation Reports*
Total IF considering IF of publication year and IF (5-years) for publications in 2019	**332.189**	**1996-2019**	
Mean IF per article	**3.65**		
Total indexed publications in Journals and Books *(91 articles + 5 chapters)*	96	**1996-2019**	*Scopus*
Total citations	**3106**	**1996-2019**	*Scopus*
Average Citations per Product	**32.35**		*Scopus*
Hirsch (H) index	**34**	**1996-2019**	*Scopus*
Normalized H index*	**1.48**		
Articles **(not yet indexed)**	2	**2019-**	*PubMed.gov*

*Divided by the academic seniority

Part IX– Selected Publications for the evaluation

List of 16 publications (last 10 years) selected for the evaluation.

- *Impact Factor*, IF (publication year) is from *Incites-JCR Journal Citation Reports* database https://jcr.clarivate.com/JCRJournalHomeAction.action. For papers published in 2019, IF (5-years) is indicated, as IF (2019) is not available (**n.a**.).
- Citations number **(cit. n.)** is from *Scopus* database
- All scientific publications are from *Medline (PubMed.gov)* & *Scopus* database

1. Uccelletti D, Zanni E, Marcellini L, Palleschi C, Barra D, **Mangoni ML** (2010) Anti-Pseudomonas activity of frog skin antimicrobial peptides in a Caenorhabditis elegans infection model: a plausible mode of action in vitro and in vivo. *Antimicrob Agents Chemother*. 54 (9): 3853-3860 ***(Corresponding Author)*** doi: 10.1128/AAC.00154-10
IF(2010) =4.672, cit. n. 45

2. **Mangoni ML**, Carotenuto A, Auriemma L, Saviello MR, Campiglia P, Gomez-Monterrey I, Malfi S, Marcellini L, Barra D, Novellino E, Grieco P (2011) Structure-activity relationship, conformational and biological studies of temporin L analogues. *J Med Chem*. 54:1298-1307. doi: 10.1021/jm1012853. **IF(2011) = 5.248, cit. n 42**

3. Bhunia A, Saravanan R, Mohanram H, **Mangoni ML**, Bhattacharjya S. (2011) NMR Structures and Interactions of Temporin-1Tl and Temporin-1Tb with Lipopolysaccharide Micelles: mechanistic insights into outer membrane permeabilization and synergistic activity. *J Biol Chem*. 286 (27): 24394-24406 doi: 10.1074/jbc.M110.189662
IF(2011) = 4.773, cit. n. 59

4. Grieco P, Carotenuto A, Auriemma L, Saviello MR, Campiglia P, Gomez-Monterrey IM, Marcellini L, Luca V, Barra D, Novellino E, **Mangoni ML** (2013). The effect of D-amino acid substitution on the selectivity of temporin L towards target cells: Identification of a potent anti-Candida peptide. *Biochim Biophys Acta-Biomembranes*.1828:652-660. ***(Corresponding Author)*** doi: 10.1016/j.bbamem.2012.08.027 **IF(2013)= 3.431, cit. n. 34**

5. Luca V, Stringaro A, Colone M, Pini A, **Mangoni ML** (2013) Esculentin(1-21), an amphibian skin membrane-active peptide with potent activity on both planktonic and biofilm cells of the bacterial pathogen Pseudomonas aeruginosa. *Cell Mol Life Sci.* 70:2773-2786 ***(Corresponding Author)*** doi: 10.1007/s00018-013-1291-7 **IF(2013)= 5.856, cit. n. 56**

6. Luca V, Olivi M, Di Grazia A, Palleschi C, Uccelletti D, **Mangoni ML** (2014) Anti-Candida activity of 1-18 fragment of the frog skin peptide esculentin-1b: in vitro and in vivo studies in a Caenorhabditis elegans infection model. *Cell Mol Life Sci.* 71: 2535-2546 ***(Corresponding Author)*** doi: 10.1007/s00018-013-1500-4 **IF(2014)= 5.808, cit. n. 11**

7. Roversi D, Luca V, Aureli S, Park Y, **Mangoni ML**, Stella L (2014) How many antimicrobial peptide molecules kill a bacterium? The case of PMAP-23. *ACS Chem Biol*. 9: 2003-2007 (*This paper has been advertised on Chem. Res. Toxicol., 2014, 27 (9), pp 1461–1462* ***doi:*** *10.1021/tx500330d*) doi: 10.1021/cb500426r **IF(2014)= 5.331, cit. n. 50**

8. Di Grazia A, Luca V, Segev-Zarko LA, Shai Y, **Mangoni ML** (2014) Temporins A and B Stimulate Migration of HaCaT Keratinocytes and Kill Intracellular Staphylococcus aureus.

Antimicrob Agents Chemother. 58(5):2520-2527. ***(Corresponding Author)*** doi: 10.1128/AAC.02801-13 **IF(2014)= 4.476, cit. n. 28**

9. Di Grazia A, Cappiello F, Cohen H, Casciaro B, Luca V, Pini A, Di YP, Shai Y, **Mangoni ML** (2015). D-Amino acids incorporation in the frog skin-derived peptide esculentin-1a(1-21)NH_2 is beneficial for its multiple functions. *Amino Acids*. 47; 2505-19 ***(Corresponding Author)*** doi: 10.1007/s00726-015-2041-y. **IF(2015)= 3.196; cit. n. 28**

10. Di Grazia A, Cappiello F, Imanishi A, Mastrofrancesco A, Picardo M, Paus R, **Mangoni ML** (2015) The Frog Skin-Derived Antimicrobial Peptide Esculentin-1a(1-21)NH2 Promotes the Migration of Human HaCaT Keratinocytes in an EGF Receptor-Dependent Manner: A Novel Promoter of Human Skin Wound Healing? *PLoS One*. 10(6):e0128663. ***(Corresponding Author)*** doi: 10.1371/journal.pone.0128663 **IF(2015) = 3.057, cit. n. 35**

11. Kolar SS, Luca V, Baidouri H, Mannino G, McDermott AM, **Mangoni ML** (2015). Esculentin 1a(1-21)NH_2: a frog skin-derived peptide for microbial keratitis. *Cell Mol Life Sci*. 72:617-627 ***(Corresponding Author)*** *This paper has been advertised on Global Medical Discovery https://globalmedicaldiscovery.com/key-drug-discovery-articles/esculentin-1a1-21nh2-a-frog-skin-derived-peptide-for-microbial-keratitis/* doi: 10.1007/s00018-014-1694-0 **IF(2015)= 5.694, cit. n. 17**

12. Cappiello F, Di Grazia A, Segev-Zarko LA, Scali S, Ferrera L, Galietta L, Pini A, Shai Y, Di YP, **Mangoni ML.** (2016) Esculentin-1a-Derived Peptides Promote Clearance of Pseudomonas aeruginosa Internalized in Bronchial Cells of Cystic Fibrosis Patients and Lung Cell Migration: Biochemical Properties and a Plausible Mode of Action. *Antimicrob Agents Chemother*. 60(12); 7252-7262 ***(Corresponding Author)*** doi:10.1128/AAC.00904-16. **IF (2016)= 4.302; cit. n. 20**

13. Casciaro B, Moros M, Rivera-Fernández S, Bellelli A, de la Fuente JM, **Mangoni ML (**2017**).** Gold-nanoparticles coated with the antimicrobial peptide esculentin-1a(1-21)NH_2 as a reliable strategy for antipseudomonal drugs. *Acta Biomater*. 47; 170-181 ***(Corresponding Author)*** doi: 10.1016/j.actbio.2016.09.041. **IF(2017)= 6.383; cit. n. 31**

14. Loffredo MR, Ghosh A, Harmouche N, Casciaro B, Luca V, Bortolotti A, Cappiello F, Stella L, Bhunia A, Bechinger B, **Mangoni ML** (2017). Membrane perturbing activities and structural properties of the frog-skin derived peptide Esculentin-1a(1-21)NH_2 and its Diastereomer Esc(1-21)-1c: Correlation with their antipseudomonal and cytotoxic activity. *Biochim Biophys Acta-Biomembranes*. 1859(12):2327-2339. ***(Corresponding Author)*** doi: 10.1016/j.bbamem.2017.09.009. **IF(2017)= 3.438; cit. n. 10**

15. Chen C, **Mangoni ML***, Di YP*. (2017) In vivo therapeutic efficacy of frog skin-derived peptides against Pseudomonas aeruginosa-induced pulmonary infection. *Sci Rep*. 8548. ***(Co-Corresponding author)*** doi: 10.1038/s41598-017-08361-8 **IF= 4.122; cit. n. 8**

16. Casciaro B, d'Angelo I, Zhang X, Loffredo MR, Conte G, Cappiello F, Quaglia F, Di YP, Ungaro F, **Mangoni ML** (2019). Poly(lactide- co-glycolide) Nanoparticles for Prolonged Therapeutic Efficacy of Esculentin-1a-Derived Antimicrobial Peptides against Pseudomonas aeruginosa Lung Infection: in Vitro and in Vivo Studies. *Biomacromolecules*. 20(5):1876-1888. **(*Corresponding Author*).** doi: 10.1021/acs.biomac.8b01829. **IF (5-years)= 5.826; cit. n. 2.**

Total articles selected for the evaluation: **16**

First author: in **1** of them
Last & corresponding author: in **12** of them
Co-corresponding author: in **1** of them
***% first/last/corresponding/co-corresponding author*: 87.5%**

Total IF: 75.6 (*Incites JCR Journal Citation Reports database*)
Mean IF per article: 4.7

Total Citations: 476 *(Scopus database)*
Mean citations per article: 30

PART X: LIST OF ALL SCIENTIFIC PUBLICATIONS (1996-2019) in peer-reviewed journals used to calculate the bibliometric indeces.

- IF (publication year) is from *Incites-JCR Journal Citation Reports* database **(n.a.,** not available). For papers published in 2019, IF (5-years) is indicated, as IF (2019) is not available.
- Citations number **(cit. n.)** is from *Scopus* database; citations not yet available, **n.a.**
- All scientific publications are from *Medline (PubMed.gov)* & *Scopus* database

1. Simmaco M, Mignogna G, Canofeni S, Miele R, **Mangoni ML,** Barra D (1996) Temporins, antimicrobial peptides from the European red frog *Rana temporaria*. *Eur. J. Biochem*. 242, 788-92 doi: 10.1111/j.1432-1033.1996.0788r.x **IF= n.a.** at the publication year (1996); **cit. n. 248**

2. Simmaco M, Boman A, **Mangoni ML,** Mignogna G, Miele R, Barra D, Boman HG (1997) Effect of glucocorticoids on the synthesis of antimicrobial peptides in amphibian skin. *FEBS Letters* 416, 273-5 doi: 10.1016/s0014-5793(97)01216-7 **IF =3.504; cit. n. 53**

3. Simmaco M, **Mangoni ML,** Boman A, Barra D, Boman HG (1998) Experimental infections of *Rana esculenta* with *Aeromonas hydrophila*: a molecular mechanism for the control of the normal flora. *Scan. J. Immunol*. 48, 357-63 doi: 10.1046/j.1365-3083.1998.00407.x **IF =1.781; cit. n. 59**

4. Ponti D, Mignogna G, **Mangoni ML,** De Biase D, Simmaco M, Barra D (1999) Expression and activity of cyclic and linear analogues of esculentin-1, an antimicrobial peptide from amphibian skin. *Eur. J. Biochem*. 263, 921-7 doi: 10.1046/j.1432-1327.1999.00597.x. **IF= 3.307; cit. n. 50**

5. **Mangoni ML,** Rinaldi AC, Di Giulio A, Mignogna G, Bozzi A, Barra D, Simmaco M (2000) Structure-function relationships of temporins, small antimicrobial peptides from amphibian skin. *Eur. J. Biochem*. 267, 1447-54 doi:10.1046/j.1432-1327.2000.01143.x **IF =2.852; cit. n. 127**

6. **Mangoni ML,** Grovale N, Giorgi A, Mignogna G, Simmaco M, Barra D (2000) Structure-function relationships in bombinins H, antimicrobial peptides from Bombina skin secretions. *Peptides* 21, 1673-79. doi: 10.1016/s0196-9781(00)00316-8. **IF = 1.867; cit. n. 54**

7. **Mangoni ML,** Miele R, Renda TG, Barra D, Simmaco M (2001) The synthesis of antimicrobial peptides in the skin of *Rana esculenta* is stimulated by microorganisms. *FASEB*

J. 15, 1431-2 and online http://www.fasebj.org/cgi/doi/ 10.1096/fj.00-0695fje **IF** = **8.817, cit. n. 61**

8. Rinaldi AC, **Mangoni ML**, Rufo A, Luzi C, Barra D, Zhao HX, Kinnunen PKJ, Bozzi A, Di Giulio A, Simmaco M (2002) Temporin L: antimicrobial, hemolytic, cytotoxic activities and effects on membrane permeabilization in lipid vesicles. *Biochem. J.* 368, 91-100. doi:10.1042/BJ20020806. **IF =4.589; cit. n. 114**

9. Ponti D, **Mangoni ML**, Mignogna G, Simmaco M, Barra D (2003) An amphibian antimicrobial peptide variant expressed in *Nicotiana tabacum* confers resistance to phytopathogens. *Biochem. J.* 370, 121-7 doi: 10.1042/BJ20021444. **IF =4.101; cit. n. 44**

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