Decreto Rettore Università di Roma “La Sapienza” n. 1927/2018 del 25.07.18

GIAN MARIA FIMIA
Curriculum Vitae

Part I – General Information

Full Name	Gian Maria Fimia
Spoken Languages	Italian (native), English (excellent)

Part II – Education

Type	Year	Institution	Notes (Degree, Experience,…)
University graduation	1991	**University of Rome Sapienza, Italy.**	Degree in Biological Sciences. Thesis title: Inhibition of in vitro myogenic differentiation by a polyomavirus. Tutor: Prof. Paolo Amati
Ph.D.	1996	**University of Rome Sapienza, Italy.**	Ph.D. Degree in Human Biology: Cellular and Molecular Basis. Thesis title: The activity of differentiation factors induces apoptosis in polyomavirus large T expressing myoblasts. Tutor: Prof. Paolo Amati
Post-doctorate studies	1996-2000	**Institute of Genetics and Molecular and Cellular Biology Illkirch, Strasbourg France.**	Post-doc fellow with fellowship from EU Program Training and Mobility of Researchers (2 years), and from Ernst Schering Foundation Research (2 years). Research project: Regulation of germ cell differentiation by the transcription factor CREM. Supervisor: Prof. Paolo Sassone-Corsi
Licensure 01	1993	Qualification to exercise the profession of Biologist	
Licensure 02	2010	Eligibility for Associate Professor in S.D. BIO/06 “Anatomia Comparata e Citologia”.	Announcement D. R. n. 1757 del 27 giugno 2008 - Università degli Studi di Padova.
Licensure 03	2013	Italian National Scientific Habilitation as Full Professor in S. C. 05/B2 – “Anatomia Comparata e Citologia”.	Announcement 2012 (DD n. 222/2012)
Licensure 04	2017	**Italian National Scientific Habilitation as Full Professor in S. C. 05/F1 - Biologia**	Announcement 2016 (DD n. 1532/2016)

Applicata.

Part III – Appointments

III-A – Academic Appointments

Start	End	Institution	Position
2013	**ongoing**	**University of Salento (Lecce, Italy), Department of Biological and Environmental Sciences and Technologies (DiSTeBA)**	**Associate Professor - S.D. BIO/06 "Anatomia Comparata e Citologia".**
2017	**ongoing**	**PhD school in "Nanotechnology" University of Salento (Lecce, Italy)**	**Member of Scientific Board**

III-B – Other Appointments

Start	End	Institution	Position
2015	**2017**	**Federal University of São Paulo, Brazil**	**Visiting Researcher. Science without Borders Program (1month/each year).** Research topic: Regulation of autophagy by the lysosomal proteins TCP in astrocytes
2013	**ongoing**	**INMI L. Spallanzani IRCCS Cell Biology laboratory Rome, Italy**	**Principal Investigator (Co.Co.Co. contract).** Research topics: Study of the molecular mechanisms regulating autophagy in immune cells in physiological and pathological conditions.
2008	2013	INMI L. Spallanzani IRCCS Cell Biology laboratory Rome, Italy	"Dirigente Biologo" (fixed-term contract). Research topics: Study of the molecular mechanisms regulating autophagy in immune cells in physiological and pathological conditions.
2004	2007	INMI L. Spallanzani IRCCS Cell Biology laboratory Rome, Italy	Research scientist (Co.Co.Co. contract). Research topics: Study of molecular mechanisms regulating cell death in infected cells.
2004	2004	INMI L. Spallanzani IRCCS Cell Biology laboratory Rome, Italy	"Dirigente Biologo" (3 months fixed-term contract). Research topics: Study of molecular mechanisms regulating cell death in immune cells in infected cells..
2001	2004	INMI L. Spallanzani IRCCS Cell Biology laboratory Rome, Italy	Research scientist (Co.Co.Co. contract). Research topics: Study of molecular mechanisms regulating cell death in infected cells..

III-C – Meetings, Conferences, Seminars

Year	Object	Role
2017	**1° Workshop on Molecular Mechanisms of Autophagy and Their Application to Diseases, Sao Paulo, Brasil.**	**Organizer and Speaker**
2017	IRCCS Fondazione Policlinico Universitario A. Gemelli, Rome, Italy.	Seminar (invited by Prof. Giovanni Delogu)
2016	**Black Forest Winter Conference on "Autophagic membrane trafficking and dynamics in ageing and disease" Saig, Germany**	**Organizer and Speaker**
2015	**Les Treilles Foundation Conference "Autophagy: Moving from Molecular and Cellular Characterization towards Applications in Health and Diseases", Tourtour, France**	**Invited Speaker**
2015	IRCCS Policlinico San Donato, Milan, Italy.	Seminar (invited by Dr. Fabio Martelli)
2015	University of Rome, Tor Vergata, Faculty of Medicine and Surgery, Rome Italy.	Seminar (invited by Prof. Gerry Melino)
2014	**International Cell Death Society Conference on "Cell Death and Diseases", Stellenbosch Wineland district, Cape Province, Sud Africa.**	**Invited Speaker**
2014	First Joint Meeting of Nordic, Spanish and French Autophagy Networks, Toulouse, France.	Selected Oral Presentation
2014	Gordon Research Conference on "Autophagy in Stress, Development and Diseases", Il Ciocco, Lucca, Italy.	Selected Oral Presentation
2014	**XIII Congress of Italian Federation of Life Science, Pisa, Italy.**	**Invited Chair**
2013	EMBO Conference on "Autophagy: Molecular mechanism, physiology and pathology "Hurtigruten MS Trollfjord, Norway.	Selected Oral Presentation
2013	**International Cell Death Society Conference on "Mechanism of Cell Death" Fungirola, Spain.**	**Invited Chair**
2013	First National Conference on beta-Sarcoglyocanopathy, Milan, Italy.	Invited Speaker
2013	University of Rome, Sapienza - Istituto di Biologia e Patologia Molecolari CNR, Rome, Italy.	Seminar (invited by Prof. Patrizia Lavia)
2013	National Cancer Institute Regina Elena IRCCS, Rome, Italy.	Seminar (invited by Dott. Maurizio Fanciulli)
2012	CSS Mendel Institute IRCCS, Rome, Italy.	Seminar (invited by Prof. Enza Maria Valente)
2011	**International Cell Death Society Conference on "Signaling in cell death survival, proliferation and degeneration", São Paulo Brazil.**	**Invited Speaker**
2011	EMBO Conference On Autophagy In Health And Disease Ma'ale Hachamisha, Israel.	Selected Oral Presentation
2009	**Third International Symposium on Molecular**	**Invited Speaker**

	Technology on "Manipulation of Cell Pathways in Drug Development", Teheran, Iran.	
2009	International Symposium on Autophagy Otzu, Japan	Selected Oral Presentation
2007	**Workshop on "The role of Autophagy in Infectious Diseases and Cancer", INMI Spallanzani, Rome, Italy.**	**Organizer and Speaker**

Part IV – Teaching experience

IV-A Most of the teaching activities of Prof. Fimia refers to the topics of cell biology and developmental biology that are indicated in the declaratory of the scientific disciplinary sector BIO/13.

Year	Institution	Lecture/Course
2016-now	University of Salento (Lecce, Italy), Master's Degree in Medical Biotechnology and Nanobiotechnology	Course: **Developmental Biology** (6 credits), Role: Professor
2013-now	University of Salento (Lecce, Italy), Bachelor's degree in Biological Sciences	Course: **Citology and Histology** (8 credits), Role: Professor
2015-2017	Federal University of São Paulo, Brazil	Lectures on **cell death and survival pathways**. Science without Borders Program Role: Visiting Researcher (1month/each year)
2011	Federal University of São Paulo, Brazil.	Lectures on "**Regulation of Autophagy and its application in Biomedicine**" 3 days.
2009-2011	University of Rome Tor Vergata, Master's Degree in Molecular and Cellular Biology	Course: Cellular and Molecular Proteomics - (2 credits). Role: teaching assignment.
2008	Federal University of São Paulo, Brazil.	Lectures on "**Molecular and Cellular Basis of Cell Death**" 3 days
2005-2008	University of Rome Tor Vergata, Master's Degree in Molecular and Cellular Biology	Course on "Methods of Proteomics" (4 credits). Role: teaching assignment.
2005	Center of Molecular Immunology, Havana (Cuba).	Lectures on "**Molecular and Cellular Basis of Programmed Cell Death**" 3 days

IV-B Tutorial Activity for the Thesis of University Students and Phd Students

- **University Tutor** for the following students of the **Bachelor's Degree** in Biological Sciences, University of Salento. 2015: Isabella Gennaro, Maria Immacolata Arrivabene. 2016: Veronica Chiri. 2017: Maria Palazzo, Lavinia Macchioro, Chiara Nappi, Martina Gigante. 2018: Marina De Vitis, Francesca Surano, Valeria Melpignano, Emanuele D'Amato, Valentina Greco.
- **University Tutor** for the following students of the **Master's Degree** in Biology, University of Salento. 2018: Francesca Persano.
- **External Tutor** for the following students of the **Master's Degree** in Cellular and Molecular Biology, University of Rome "Tor Vergata". 2009: Nicola Daniele, Tiziana Vescovo, Paolo Bernardoni. 2010: Giulia Refolo, Francesca Rapino. 2012: Martina Di Rienzo. 2013: Marco D'Agostino. 2014: Fiammetta Biagiarelli.

- **External Tutor** for the following **PhD students** in Cellular and Molecular Biology, University of Rome "Tor Vergata". 2010: Ariel Basulto, Gaia Lisi, Vittoria Pagliarini. 2011 Manuela Antonioli. 2013: Vescovo Tiziana, 2014: Giulia Refolo, Federica Albiero, 2015: Claudia Marsella, 2016 Martina Di Rienzo.

Part V - Society memberships, Awards and Honors

Year	Title
2016	**Participant of trans-national cooperation programs between European researchers: European Network of Multidisciplinary Research and Translation of Autophagy knowledge (TRANSAUTOPHAGY, Cost Action CA15138).**
2014	**Participant of trans-national cooperation programs between European researchers: European Network of Chemistry and Molecular Sciences and Technologies (NATCHEMDRUGS, Cost Action CM1407)**
2013-now	**Academic Editor for the journal "Cell Death and Disease"**
2014-2016	**Academic Editor for the journal "Autophagy"**
2009-2014	**Academic Editor for the journal "Plos One"**
Last 10 years	Ad Hoc Reviewer for the following journals: Nature Communications, Oncogene, Cell Death and Differentiation, Frontiers in Oncology, Proteome Science, Journal of Proteome Research, Journal of Innate Immunity, Journal of Infection, Journal of Investigative Dermatology, Journal of Experimental & Clinical Cancer Research, Molecular Neurobiology, Molecular Neurodegeneration.
Last 10 years	Ad Hoc Reviewer for the following funding agencies: EU TMR (Training and Mobility of Researchers), University of Leuven (BE), AFM Telethon, PRIN (Progetti di Rilevante Interesse Nazionale).
2002	Member of the National Register of Biologists (Ordine Nazionale dei Biologi)

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

Year	Title	Program	Grant value
2016	Ubiquitin E3 ligases as critical sensors in physiological and pathological conditions	MIUR **PRIN2015** 20152CB22L. **PI Project Coordinator.**	Euro 89.740
2015	Evaluating the tumor suppressor role of the proautophagic protein Ambra1 in hepatocellular carcinoma.	Italian Cancer Research Foundation (**AIRC**) IG17404 **Project PI.**	Euro 270.000
2014	Role of IP-10 and its truncated form in the pathogenesis of tuberculosis	**Italian Ministry of Health**; RF-2011-02349395 **PI of Unit 2.**	Euro 80.000
2012	From steatohepatitis to hepatocarcinoma in Hepatitis C: is the impairment of lipophagy playing a role?	Italian Cancer Research Foundation (**AIRC**) IG17404. **Project PI.**	Euro 240.000

2011	Is the limb-girdle muscular dystrophy type 2H a defective autophagy disease?	Italian **Telethon** Foundation, Exploratory Project GEP12072. **Project PI.**	Euro 50.000
2010	Autophagy in the immune response against Mycobacterium tuberculosis	**Italian Ministry of Health**; RF-IMI-2010-230199 **PI of Unit 2.**	Euro 70.000
2009	Multidisciplinary and comprehensive knowledge on bone disorders in HIV infection	**Italian Ministry of Health**; 228/RF-2009-1549885. **PI of Unit 4.**	Euro 15.000
2009	Interfering with HIV infection by modulating host cell pathways: a phosphoproteomic approach	**Italian Ministry of Health**; RF-IMI-2009-1301561. **Project PI.**	Euro 60.000
2007	The role of the autophagic process in the pathogenesis of tuberculosis: from bench to bedside.	**Italian Ministry of Health**; RF-IMI-2007-658048. **PI Project Coordinator.**	Euro 145.000
2006	Neoangiogenesis in hepatoma and other tumors: novel therapeutical targeting of endothelial precursors	**Italian Ministry of Health**; RF-IMI-2006-411189. **PI of Unit 6.**	Euro 120.000
2004	Sviluppo di modelli per il controllo delle infezioni virali tramite l'impiego di materiali raccolti presso un polo centralizzato per la crioconservazione di cellule e tessuti	**Italian Ministry of Health**; "Banca Biologica" **PI of Unit 9.**	Euro 80.000
2004	Sviluppo di una piattaforma tecnologica per la diagnosi precoce del vaiolo ed altri agenti utilizzabili a fini di bioterrorismo, applicabile anche per altri microrganismi responsabili nell'uomo di malattie infettive ad elevata pericolosità	**Italian Ministry of Health**, Progetto 528/C3 **Unit PI**	Euro 20.000
2003	Meccanismi di interazione virus-ospite in corso di terapia antivirale cronica e sviluppo di strategie terapeutiche innovative	**Italian Ministry of Health**, RF03.119. **PI of Unit 2.**	Euro 20.000

Moreover, since 2013 Prof. Fimia is responsible for the project "Study of the cellular and molecular mechanisms of the innate immune response towards Mycobacterium tuberculosis able to counteract the occurrence of the chronic infection" of the Institutional Research Line 4 (Ricerca Corrente) of the National Institute for Infectious Diseases" Lazzaro Spallanzani "IRCCS.

Part VII – Research Activities

The past and current research activity of Prof. Fimia has deepened most of the themes of the scientific disciplinary sector BIO/13 related to the basic mechanisms involved in the regulation of gene expression, cell proliferation, differentiation, development, biogenesis and function of organelle/cell structure. These studies have been performed by means of several DNA recombinant

technologies, including plasmid transfection, retroviral and lentiviral transduction, transient or stable RNA interfere approaches, CRISPR-CAS9-mediated inactivation, site specific mutagenesis, as well as by using of knock-out or gene trap mutated mice.

VII-A CURRENT RESEARCH ACTIVITIES

In particular, the current research projects coordinated by Prof. Fimia has dealt with the regulation of autophagy process, a main catabolic intracellular process that requires the formation of specific sequestering vesicles called autophagosomes, and the crosstalk of this process with cell proliferation, differentiation, development, cell survival and cell death, in physiological and pathological conditions.

Keywords	Brief Description
Autophagy Neural development Ambra1 Proliferation Transgenic mice	**Role of the autophagy regulator Ambra1 in the development of the central nervous system.** This project is focused on the characterization of the role of the Ambra1 protein in the regulation of the autophagic process. Ambra1 was initially identified using a "Gene Trap" approach in mice with the aim of identifying genes important for the development of the central nervous system. The inactivation of Ambra1 causes death of mouse embryos associated with the presence of central nervous system defects, such as exencephaly and spina bifida, which are due to an uncontrolled growth of neural precursors. The work of Prof. Fimia has allowed the elucidation of the function of Ambra1 by using a functional proteomics approach that allowed the identification of Ambra1-interacting proteins in the brain. To this purpose, Prof. Fimia has performed a yeast two-hybrid screening, a technology learnt during his post-doc in Strasbourg (France). This analysis has revealed that Ambra1 interacts with Beclin-1, an essential regulator of the initial steps of the autophagy that are required for the formation of the autophagosome vesicles. The interaction of Ambra1 with Beclin-1 is essential to both stimulate the autophagic activity of Beclin-1 and mediate the crosstalk between autophagy and cell proliferation during neural development. Most relevant publications related to this project are: Fimia et al. **Nature** 2007 447:1121-5. Di Bartolomeo et al. **J Cell Biol**.2010 191:155-68. Fimia at al. **Oncogene**. 2013 32:3311-8. Cianfanelli et al. **Nat Cell Biol.** 2015 17:20-30.

Keywords	Brief Description
Autophagy dynamics Ambra1 Ubiquitination E3 ubiquitin ligases Proteomics	**Regulation of the autophagic response by the ubiquitin signaling.** This project is focused to the characterization of the molecular mechanisms that regulate the induction of autophagy in response to stress stimuli. To this aim, Prof. Fimia's group has characterized the interactome of Ambra1 in normal and stress conditions using a functional proteomic approach. This analysis has allowed to define that Ambra1 interacts with the two main upstream autophagy regulators, Beclin 1 and the ULK1. This interaction is required to stimulate the activity of these proteins by mediating the binding of a series of E3 ubiquitin ligases to regulate the autophagy process including Traf6, which mediates regulative ubiquitination of autophagy proteins, and Cullin 4, which is important for the temporal regulation of the autophagic response. Most relevant publications related to this project are: Antonioli et al. M

Trends Biochem Sci. 2017 42:28-41. Antonioli et al. **Dev Cell.** 2014 31:734-46. Nazio et al. **Nature Cell Biol.** 2013 15:406-16.

Keywords	Brief Description
Autophagy Hepatocytes Lipid metabolism Steatosis Hepatitis c virus	**Role of autophagy in the metabolism of lipids in human hepatocytes.** This project aims to characterize the role of autophagy in regulating lipid metabolism in hepatocytes and the impact of a defective autophagic process on the presence of steatosis upon HCV infection. Experiments carried out on hepatocyte cell lines have shown that cells infected with HCV have high levels of autophagy, and the genetic and pharmacological blockade of the autophagic process leads to a significant increase in levels of intracellular lipids. In light of these data, the levels of autophagy were analysed in HCV patients with different degrees of steatosis and an inverse correlation was observed between the levels of the autophagy marker LC3II and the levels of microsteatosis. These studies demonstrate that autophagy plays an important role in preventing excessive accumulation of lipids in cells infected with HCV.
	Most relevant publications related to this project are: Vescovo et al. **Gastroenterology**. 2012 142:644-653. Vescovo et al. **Clin Microbiol Infect.** 2016 22:853-861.

Keywords	Brief Description
Autophagy Macrophages Dendritic cells T cells Mycobacterium Tuberculosis	**Role of autophagy in antibacterial defenses of macrophages and dendritic cells.** The project aims to understand how Mycobacterium tuberculosis (MTB) is able to establish a chronic infection in macrophages and dendritic cells by evading the autophagic response. Recent studies coordinated by Prof. Fimia have shown how the fusion between autophagosomes and lysosomes is inhibited in cells infected with MTB. This inhibition is mediated by the ESX1 secretion system, one of the virulence factors of the bacterium. Importantly, autophagosome maturation is rescued when infected cells are cultured in the presence of MTB-specific T lymphocytes. These studies provided new experimental evidence of how MTB can survive within the infected cells, opening the possibility of identifying new regulatory pathways to stimulate autophagy and eliminate chronic infection.
	Most relevant publications related to this project are: Petruccioli et al. **J. Infect.** Diseases 2012, 205:1425-35. Romagnoli et al. **Autophagy**. 2012 8:1357-70. Goletti et al. **Cytokine Growth Factor Rev.** 2013 24:335-43. Romagnoli et al. **Cell Death Dis.** 2018 9:624.

Keywords	Brief Description
Autophagy Hepatocytes Mitochondria Type I Interferon HCV Proteomics	**Defining molecular mechanisms that regulates the Type I Interferon response gene expression.** In this study, we performed functional proteomic screening to better clarify the mechanisms by which HCV NS5A interacts with host proteins to subvert the interferon-mediated innate immune response and alter the autophagic process. To this end, we have created a modified version of the HCV replicon in order to purify the NS5A protein in a replication context and perform a mass spectrometric analysis of the proteins interacting with the host using experimental conditions that preserve the complexes associated with the membrane. This screening

	identified the LRPPRC protein as an NS5A interactor, a mitochondrial factor known to inhibit autophagy. The functional characterization of this interaction allowed us to elucidate a new antiviral response regulator and a previously uncharacterized mechanism through which NS5A inhibits activation of the IFN response after infection. The main results achieved in this study are: 1) NS5A protein localizes to the mitochondria where it binds LRPPRC; 2) the expression of LRPPRC is necessary for the inhibition of the IFN response during the infection, 3) LRPPRC directly inhibits the antiviral response by interacting with MAVS and preventing its association with TRAF3 and TRAF6. 4) LRPPRC is involved in the inhibition of autophagic response during infection, 5) NS5A is able to inhibit MAVS signaling by interacting with LRPPRC.
	Most relevant publications related to this project are: Refolo et al. **Hepatology**. 2018 [Epub ahead of print]. Perdomo et al **J Proteome Res.** 2012 11:717-27.

VII-B PAST RESEARCH ACTIVITIES

During the course of his scientific training and his period of specialization, the research activity of Prof. Fimia has been dedicated to the study of the regulation of cell proliferation and differentiation, with particular attention to the molecular mechanisms that regulate the signal transduction pathways and gene expression. These research activities have involved different tissue districts over the years as briefly described below:

Keywords	Brief Description
Muscle differentiation Proliferation Viral Oncogenes Tumor suppressors 	During his doctoral thesis in the laboratory of prof. Paolo Amati at Sapienza University of Rome, Prof. Fimia has been involved in the study of the regulation of gene expression during muscle differentiation. In particular, he has investigated the molecular mechanisms through which important regulators of cell proliferation, such as the oncogene Retinoblastoma (RB), control the correct expression of specific differentiation markers. The experimental system used for these studies was murine myoblasts in which the differentiation state is altered by the expression of Polyomavirus Large T, a viral oncogene able to bind and inactivate the RB antioncogene. These studies have helped to highlight the role of RB in the activity of muscular transcription factor MyoD.
	Most relevant publications related to this project are: Maione et al. **Oncogene** 1992 7:85-93. Fimia et al. **J Biol Chem** 1996 271:15575-15579. Fimia et al. **Mol Biol Cell** 1998 9:1449-1463.

Keywords	Brief Description
Transgenic mice Spermatogenesis Transcriptional regulation Yeast two-hybrid CREM transcription factor 	At the end of his doctorate, Prof. Fimia has carried out a post-doctoral research activity in the laboratory of Prof. Paolo Sassone-Corsi at the Institute of Genetics and Molecular and Cellular Biology (IGBMC) of Strasbourg (France). Here, his studies in cell and developmental biology have continued focusing mainly on the regulation of gene expression in the male germline. In particular, he has investigated the regulation of the activity of the transcription factor CREM, a fundamental gene for male germ cell differentiation. Through the method of the double hybrid in yeast, Prof. Fimia has isolated a new transcription coactivator, called ACT, specifically expressed in spermatocytes and spermatids. ACT is able to bind

CREM and stimulate its transcriptional activity independently of phosphorylation by protein kinase A, highlighting for the first time a mechanism of regulation of the factors of the CREB family independent of the cyclic AMP pathway. ACT is a protein with 4 LIM domains belonging to a family of proteins that includes other 4 members (FHL 1-4) with high sequence homology and each with specific specific tissue expression. These factors are also able to bind CREB and CREM and therefore regulate their activity in specific tissue districts.
Most relevant publications related to this project are: Fimia et al. **Nature** 1999 398:165-169. De Cesare et al. **Trends Biochem Sci.** 1999 24:281-5. Fimia et al. **Mol Cell Biol** 2000 20:8613-8622. Martianov et al. **Mol Cell** 2001 7:509-515. Macho et al **Science** 2002 298:2388-90.

VII-C COLLABORATIVE RESEARCH ACTIVITIES

Parallel to these studies, Prof. Fimia has performed several experimental works in **collaboration with other laboratories at national and international level**:

- Prof. Guido Kroemer, Université Paris Descartes (France) to study the molecular mechanisms underlying the immunogenicity of apoptotic tumor cells, highlighting how the exposure of Calreticulin on the plasma membrane of apoptotic cells is a fundamental step for the recognition of these cells by part of the immune system. (Obeid et al. **Nature Med** 2007 13:54-61. Senovilla et al. **Science**. 2012 337:1678-84)
- Prof. Penny E. Lovat, University of Newcastle Upon Tyne (UK), for studies aimed at characterizing the role of autophagy in neuroblastoma and melanoma cells. (Armstrong et al. **Clin Cancer Res.** 2011 17:2216-26. Corazzari et al. **Br J Cancer.** 2007 96:1062-71. Corazzari et al. **Cell Death Differ.** 2015 22:946-58).
- Prof. Guillermo Velasco, Complutense University of Madrid (Spain), for a study aimed at the role of autophagy in cell death induced by cannabinoids in glioblastoma tumor cells. (Salazar et al. **J Clin Invest.** 2009 119:1359-72).
- Prof. Joern Dengjel, University of Friburg (Switzerland), for a study aimed at the characterization of the changes in the interactivity and post-translational modifications of autophagic proteins under stress conditions (Antonioli et al. **Methods Enzymol.** 2017 587:429-445)
- Dr. Oreste Lo Iacono, Hospital del Tajo, Aranjuez of Madrid (Spain), and Carmelo García-Monzón Hospital Universitario Santa Cristina, Madrid (Spain), for a collaborative study aimed at studying the role of autophagy in lipid dysfunctions associated with metabolic diseases of the liver. (González-Rodríguez et al. **Cell Death Dis.** 2014 5:e1179)
- Prof. Soraya Smaili, Universidade Federal de São Paulo (Brazil), for a study on the role of two-pore channel proteins in the regulation of autophagy in neural cells. (Pereira et al. **J Biol Chem.** 2011 286:27875-81. Pereira GJ et al. **Oncotarget**. 2017 8:12730-40)
- Dr. Eugenia Dogliotti, National Institute of Health (Istituto Superiore di Sanità, Italy), for a study on the role of autophagy in the Cockayne Syndrome. (Pascucci et al. **Oncotarget** 2016 8:102852-67)
- Dr. Eliana Coccia, National Institute of Health (Istituto Superiore di Sanità, Italy), for a study on the role of autophagy in the response of dendritic cells to mycobacterium tuberculosis infection. (Etna et al. **PLoS Pathog.** 2018 14:e1006790)
- Dr. Giuseppe Merla, IRCCS Casa Sollievo Della Sofferenza (Italy), for a study on the role of the E3 ubiquitin ligase TRIM50 in the regulation of autophagy (Fusco et al. **Biochim Biophys Acta**. 2018 1865:908-919)

- Prof. Claudio Sette, Fondazione Policlinico Universitario A. Gemelli, IRCCS (Italy), for a study of the role of the splicing factor SAM68 in the Spinal muscular atrophy. (Cappellari et al. **Oncogene**. 2014 33:3794-802)
- Prof. Enza Maria Valente, University of Pavia (Italy), for a study on the role of Pink1 in the regulation of mitophagy. (Gelmetti et al. **Autophagy**. 2017 13:654-669)

VII-D PATENTS
Prof. Fimia has registered 2 patents in 2007:
n. RM2007 A 000350 in Italia " Gene codificante la proteina Ambra 1 avente attività regolatoria dell'autofagia e della rimozione dei patogeni cellulari"
n. RM2007 A 000351 in Italia "Gene codificante la proteina Ambra 1 avente attività regolatoria dell'autofagia e dello sviluppo del sistema nervoso"

Part VIII – Summary of Scientific Achievements

Product type	Number	Data Base	Start	End
Papers [international]	130	Scopus (https://www.scopus.com/authid/detail.uri?authorId=6701502915)	1992	2018
Papers [international] last 10 years	89	Scopus (https://www.scopus.com/authid/detail.uri?authorId=6701502915)	2008	2018

Total Impact factor	1001,5
Total Impact factor last 10 years	677,4
Average Impact factor per Publication	7,7
Total Citations (29-08-2018)	10917
Average Citations per Product	84
Hirsch (H) index	42
Normalized H index*	1,5

*****H index divided by the academic seniority.

Full List of Publications:

Publication highlights: In the course of 26 years of research activity, most relevant studies of Prof. Fimia were published in high ranked scientific journals: **Nature (twice first author), Science, Nature Medicine, Nature Cell Biology, Molecular Cell, Trends in Biochemical Sciences, Proc Natl Acad Sci U S A, J. Clinical Investigation, Gastroenterology, EMBO Journal, Journal of Cell Biology**.

1. Maione R., Fimia G.M. and P. Amati. Inhibition of *in vitro* myogenic differentiation by a polyomavirus early function. 1992 **Oncogene** 7:85-93.
2. Maione R., Fimia G.M. and P. Amati. Inhibition of *in vitro* muscle differentiation by the immortalizing oncogene Py LT-ag. 1992 **Symp Soc Exp Biol.** 46:53-71.
3. Maione R., Fimia G.M., Holman P., Schaffhausen B. and P. Amati. Retinoblastoma antioncogene is involved in the inhibition of myogenesis by polyomavirus large T antigen. 1994 **Cell Growth & Differentiation** 5:231-237.

4. Fimia G.M., Ferreira R., Passananti C. and P. Amati. A polyomavirus enhancer mutant confers ubiquitous high transcriptional efficiency to the SV40 late promoter. 1995 **Biochem.Biophys.Res.Com.** 207:339-347.
5. Fimia G.M., Gottifredi V., Passananti C. and R. Maione. Double-stranded internucleosomal cleavage of apoptotic DNA is dependent on the degree of differentiation in muscle cells. 1996 **Journal of Biological Chemistry**: 271:15575-15579.
6. Fimia G.M., Gottifredi V., Bellei B., Ricciardi M.R., Tafuri A., Amati P. and R. Maione. The activity of differentiation factors induces apoptosis in polyomavirus largeT-expressing myoblasts. 1998 **Molecular Biology of the Cell**: 9:1449-1463.
7. Dierich A., Sairam M.R., Monaco L., Fimia G.M., Gansmuller A., LeMeur M. and P. Sassone-Corsi. Targeted disruption of the FSH receptor leads to aberrant gametogenesis and hormonal alterations. 1998 **Proc Natl Acad Sci U S A** : 95:13612-7.
8. Fimia G.M., De Cesare D. and P. Sassone-Corsi. Novel molecular pathways of transcriptional activation by CREB and CREM. 1998 **Cold Spring Harb Symp Quant Biol** 63:631-42.
9. Gottifredi V., Peschiaroli A., Fimia G.M. and R. Maione. p53-independent apoptosis induced by muscle differentiation stimuli in polyomavirus large T-expressing myoblasts. 1999 **Journal of Cell Science** 112:2397-2407.
10. Fimia G.M., De Cesare D. and P. Sassone-Corsi. CBP-independent activation of CREM and CREB by the LIM-only protein ACT. 1999 **Nature** 398:165-169.
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Part IX– Selected Publications

The selected articles of the Prof. Fimia ’research activity during the last 10 years are the most relevant for the topics of the scientific disciplinary sector BIO/13. In particular, they refer to the molecular mechanisms that regulates gene expression (regulation of interferon response gene expression, see article 1); transmission of genetic information (cancer cell ploidy: article 12); cell

proliferation (crosstalk between autophagy and cell proliferation: articles 6, 8, 11); biogenesis and function of organelle/cell structure [mitochondria (article 7), autophagosome formation and function in physiological (articles 3, 5, 9, 10, 15, 16) and pathological conditions (articles 2, 4, 13, 14)].

The selected publications are uniformly distributed during the last 10 years. Impact factor of the selected articles are **all > 5**.
Role of Prof. Fimia in these papers is: **last author (8 articles)**, **first author (1 article)**, **corresponding author (but not last author, 2 articles)**. In addition, **5 articles** were included to represent the most relevant **collaborative works** carried out in this period.

1: Refolo G, Ciccosanti F, Di Rienzo M, Perdomo AB, Romani M, Alonzi T, Tripodi M, Ippolito G, Piacentini M, **Fimia GM**.
Negative regulation of MAVS-mediated antiviral signaling by the mitochondrial protein LRPPRC during HCV infection. **Hepatology**. 2018 Aug 2. doi: 10.1002/hep.30149. [Epub ahead of print] PubMed PMID: 30070380.
IF: 14,079. **Citations (Scopus)**: 0.

2: Romagnoli A, Petruccioli E, Palucci I, Camassa S, Carata E, Petrone L, Mariano S, Sali M, Dini L, Girardi E, Delogu G, Goletti D, **Fimia GM**.
Clinical isolates of the modern Mycobacterium tuberculosis lineage 4 evade host defense in human macrophages through eluding IL-1β-induced autophagy. **Cell Death Dis.** 2018 May 24;9(6):624. doi: 10.1038/s41419-018-0640-8. PubMed PMID: 29795378; PubMed Central PMCID: PMC5967325. Scopus ID: 2-s2.0-85047598722.
IF: 5,638. **Citations (Scopus)**: 0.

3: Gelmetti V, De Rosa P, Torosantucci L, Marini ES, Romagnoli A, Di Rienzo M, Arena G, Vignone D, **Fimia GM**, Valente EM.
PINK1 and BECN1 relocalize at mitochondria-associated membranes during mitophagy and promote ER-mitochondria tethering and autophagosome formation. **Autophagy**. 2017 Apr 3;13(4):654-669. doi: 10.1080/15548627.2016.1277309. PubMed PMID: 28368777; PubMed Central PMCID: PMC5388214. Scopus ID: 2-s2.0-85013070354.
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Role of autophagy in HIV infection and pathogenesis. **J Intern Med.** 2017 May;281(5):422-432. doi: 10.1111/joim.12596. PubMed PMID: 28139864. Scopus ID: 2-s2.0-85013335412.
IF: 6,754. **Citations (Scopus)**: 6.

5: Antonioli M, Di Rienzo M, Piacentini M, **Fimia GM**.
Emerging Mechanisms in Initiating and Terminating Autophagy. **Trends Biochem Sci.** 2017 Jan;42(1):28-41. doi: 10.1016/j.tibs.2016.09.008. PubMed PMID: 27765496. Scopus ID: 2-s2.0-85005769276.
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6: Vescovo T, Refolo G, Vitagliano G, **Fimia GM***, Piacentini M. (*Corresponding author)
Molecular mechanisms of hepatitis C virus-induced hepatocellular carcinoma. **Clin Microbiol Infect.** 2016 Oct;22(10):853-861. doi: 10.1016/j.cmi.2016.07.019. PubMed PMID: 27476823. Scopus ID: 2-s2.0-84992731459.
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13: Romagnoli A, Etna MP, Giacomini E, Pardini M, Remoli ME, Corazzari M, Falasca L, Goletti D, Gafa V, Simeone R, Delogu G, Piacentini M, Brosch R, **Fimia GM***, Coccia EM. (*Corresponding author)

ESX-1 dependent impairment of autophagic flux by Mycobacterium tuberculosis in human dendritic cells. **Autophagy**. 2012 Sep;8(9):1357-70. doi: 10.4161/auto.20881. PubMed PMID: 22885411; PubMed Central PMCID: PMC3442882. Scopus ID: 2-s2.0-84866554596.
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In riferimento alla legge 196/2003 il sottoscritto autorizza espressamente l'utilizzo dei dati personali e professionali riportati nel curriculum.

Rome, 31-08-2018

Prof. Gian Maria Fimia