Curriculum vitae et studiorum ANNALUCIA SERAFINO Ph.D.

PERSONAL INFORMATION:
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ANNALUCIA SERAFINO Ph.D.
ORCID number: 0000-0002-1142-4752; RESEARCH ID: AAC-1719-2019; Scopus ID: 7003832003
Bibliometric Indexes: H-index: 40 (Scopus); Total citations (Scopus): 4514 (last access: 01/08/2024)

WORK EXPERIENCE AND POSITIONS

01/01/2010 and current position: Senior Researcher profile, at the Inst. of Translational Pharmacology (IFT), National Research Council (CNR)

Jan 26, 2016 – March 2024: Member elected as representative of the Researchers and Technologists of the Institute Council (CdI) at the IFT-CNR

Oct 2010 and current position: Head the Laboratory of "Cytomorphometry and molecular analyses in pre-clinical experimentation" at the IFT-CNR

Jan 2011 to Sep 2012: Appointment as Responsible for supporting the technical and scientific coordination of IFT-CNR, with power to sign on behalf of the Director IFT-CNR

2005 to 2015: Head Unit "Molecular target, preclinical model and immunotherapy" of the CNR Departmental Project: "Application of new knowledge and technologies in oncology", at the IFT-CNR

2002: Head Unit "Immunocytochemistry and Ultrastructure" Cellular Physiopathology Division of the Inst. of Neurobiology and Molecular Medicine (INMM)

2001: Research position at the Institute of INMM-CNR, Rome, Italy

27/7/1997 - 2001: Research position at Research Area of Rome Tor Vergata- CNR and appointment as Head of Confocal and Electron Microscopy Facility (Biomedical Field)

EDUCATION, TRAINING, AND COURSES

2005: Post-graduate theoretical course "Basic cytometric techniques"

2005: Post-graduate course "Advanced techniques in fluorescence microscopy"

2003: Post-graduate course "Update on HCV virus hepatitis and new potentially hepatic viruses - diagnosis, epidemiology, prevention, and therapy "

2000: Post-graduate course " Biology and Clinic of Pharmacoresistance"

2000: Theoretical and practical course "Microscopic techniques in the study of structural and functional features of cells in culture"

1999: Course "Internet and digital images in microscopy"

1997: "Workshop with hands-on LSM 510" on Confocal Microscopy and Two-Photon emission

1995: Course "Modern technologies in microscopy"

1994: Course "Ultrastructural Pathology and Biology"

1993-1994: Fellowship of the National Council of Research, Project "FATMA", at the Institute of Experimental Medicine, C.N.R. Rome, Italy

1991-1993: Fellowship on AIDS of the National Institute of Health at the Institute of Experimental Medicine, CNR Rome, Italy

1989-1990: Fellowship on "Biomedical Research by Electron Microscopy" at the Institute of Experimental Medicine, C.N.R. Rome, Italy.

1988: "School of Electron Microscopy in Biomedical Science"

27/3/1984: Degree in Biological Science at University of Rome, "La Sapienza" (grade, 108/110)

1978: Admitted to faculty of "Biological Science" at the University of Rome La Sapienza

REVIEWING ACTIVITY and MEMBERSHIP IN SCIENTIFIC SOCIETIES

From 2019: Editorial Board member of Frontiers in Molecular Neuroscience

2018: Evaluator for a project proposal presented at the University of Verona as part of the "Joint Projects 2018" University Call, for the realization of joint research, innovation, and development projects with companies and public and/or private entities

2017: Evaluator for a project proposal on Parkinson's Disease **–** Call launched by University of Sassari - Research Grant funded by Fondazione Sardegna

2014-2017 Editorial Board Member of ***World Journal of Gastroenterology***

2012-2013 Member of the ***New York Academy of Sciences***

From 2010-today Editorial Board Member of ***Journal of Carcinogenesis***
From 2009, Editorial Board Member of ***Journal of Clinical Medicine Research***
2003-today Referee for dozens of Scientific Journal including Oncotarget, World Journal of Gastroenterology, World Journal of Clinical Oncology, Molecular and Cellular Biochemistry, PlosOne, International Journal of Pharmaceutics, Molecular Cancer, Recent Patents on Anti-Cancer Drug Discovery

TEACHING and TRAINING ACTIVITIES
2003-Today: Member of the examining board of more than 40 Public Competitions at the National Research Council (CNR), at the Italian Medicines Agency (AIFA), and at the Istituto Superiore di Sanità (ISS)
Academic years 2002-today: Co-supervisor of dozens of Degrees and PhD Theses

MAIN RESEARCH COMPETENCIES AND ACTIVITIES
Dr. Serafino has been involved, since more than 30 years, in the study of mechanisms underlying cancer development and progression, aiming to discover new diagnostic/therapeutic targets. Her group has long-standing expertise in the use of in vitro and in vivo preclinical models of cancer, and in particular of CRC. Besides the expertise in the oncological field, Dr. Serafino has a long-time skill in the in vitro screening of new therapeutic molecules for a wide range of pathological conditions including viral, fungal and bacterial infections, immunodeficiency disorders, autoimmune and neurodegenerative diseases. In the last years, her research activity mainly focused on the involvement of the Wnt/β-catenin pathway in oncological and neurodegenerative diseases
Her main research activities have concerned the study of:
- Role of the Wnt/β-catenin signaling in Parkinson's Disease (PD) and of the neuroprotective ability of molecules targeting this pathway
- Molecular events occurring during the carcinogenetic process, with particular attention to the Wnt/β-catenin pathway activation
- Novel markers of tumor development during cancer progression and metastatization
- Inflammatory disease and cancer: Identification of possible targets for new therapeutic treatment and drug delivery
- Influence of the microenvironmental pH on the Wnt/β-catenin pathway during tumor development
- In vitro and in vivo testing of bioconjugated drugs useful for drug delivery
- Evaluation of the differentiating, antitumor, and immunostimulating activity of natural and synthetic molecules
- Study on the involvement of endogenous retroviruses in melanoma onset and progression
- Study of virus replication in cultured cells, with particular regard to viruses associated with neoplastic pathologies (HCV, HHV-8, EBV)
- Study on the toxicity and biocompatibility of carbon nanotubes for nano-technological applications and drug delivery

MAIN TECHNICAL SKILLS
- Morphological analyses of cells and tissues by confocal, microscopic, and ultramicroscopic techniques
- Histological and immunohistochemical analyses of normal and tumor tissues
- *In vitro* morphological-functional analyses and molecular imaging by confocal microscopy
- Analysis of data on biomarker expression, obtained by basic molecular biology methods quantitative Real Time RT-PCR

PROJECTS as P.I.
2024-2026. Project CNR "InvAt-Invecchiamento attivo e in salute"; Subtask "Disfunzione mitocondriale nell'invecchiamento e nella neurodegenerazione". **Funding 50.000 Euro**
2023-2025. Project funded by Intesa Sanpaolo S.p.A. " Targeting di sequenze retrovirali endogene per lo sviluppo di terapie innovative per la malattia di Parkinson". **Financed Funding 84.900 Euro**
2023-2025. Project CNR DSB.AD007.295. Title: "Meccanismi patogenetici coinvolti in malattie neoplastiche e neurodegenerative per identificare nuovi marcatori con valore diagnostico, prognostico e teragnostico, e quali possibili target terapeutici di molecole sintetiche e di derivazione naturale". **Funding 10.000 Euro**
2022-2025. Subproject PRR.AP011.001.004 - SPOKE 1 "Applied research, technology development and innovation", within PNRR Project "Rome Technopole Ecosystem" – Biopharma & Health. **Subproject Funding: 100.000 Euro**
2016-2019: P.I. for CNR scientific contribution for Grant from FONDAZIONE ROMA, Investigating the cellular endogenous Reverse Transcriptase (RT) as a novel therapeutic target and an early tumor marker. (Resp. of funding Dr. C. Spadafora). **FUNDING: 350.000,00 Euro**
2016-2017. Grant from Special Product's Line S.p.A., Evaluation of anti-psoriatic activity of new molecules on *in vitro* model of human keratinocytes. **FUNDING: 10.000,00 Euro**
2014-2015. Proponent P.I. of the technology "Development of a multiparametric platform useful for the diagnosis, prevention and treatment of colorectal cancer, using components of the Wnt/β-catenin pathway and CD44 as biomarkers", selected as technology of industrial interest in the BioTTasa Project, CNR project funded by MISE to transfer technologies to industry. Link describing the technology:
http://biottasadb.cbm.fvg.it/tecnologie?title=&scheda_id=&page=1&f[0]=field_tematica%3A54

2007-2012. P.I. for CNR scientific contribution for Grant from MIUR (art. 9 DM 593/2000), Innovative strategies of active immunization and of immunomodulation for protocol of combined therapy against cancer (Resp. of funding Prof. P. Sinibaldi-Vallebona). **FUNDING: 495.000,00 Euro**
2008-2011. Grant from Ministry of Health, Novel tools and strategies for the development of cancer vaccines based on dendritic cells and for the effective combination of immunotherapy and chemotherapy. **FUNDING: 125.000,00 Euro**
2008-2009. Grant from Fidia Farmaceutici, Study of antitumor activity of ONCOFID bioconjugates (OF-S, OF-D e OF-P) on cell lines of solid tumors (gastric, oesophageal, lung and breast cancer). **FUNDING: 87.500,00 Euro**
2007-2008. Grant from Fidia Farmaceutici, In vitro evaluation of antitumor efficacy of new hyaluronic acid bioconjugates on preclinical model of colon adenocarcinoma and gastric carcinoma. **FUNDING: 87.500,00 Euro**
2006-2007. Grant from TECNOGEN S.p.A, In vitro effect of pentraxine3 (PTX3) on phagocytosis of Aspergillus conidia by human macrophages. **FUNDING: 50.000,00 Euro**
2006-2007. Grant from Fidia Farmaceutici S.p.A., In vitro evaluation of antitumor efficacy of hyaluronic acid bioconjugates on preclinical model of colon adenocarcinoma and melanoma. **FUNDING: 87.500,00 Euro**
2004-2005: Grant from Ministry of Health, Development of new antitumor strategies: discovery subcellular targets applying advanced methodologies. Research Unit: Study of modifications induced on melanoma experimental models by natural product, for the development of innovative preventive and therapeutic strategies. **FUNDING: 16.103,00 Euro**
2001-2002: Grant from Ministry of Health, HCV effect on B lymphocytes on UROGEN-DC and molecular and cellular mechanisms of pathogenesis. Research Unit: HCV infection: microscopic analysis of in vitro and in vivo experimental models. **FUNDING: 101.650.000 Lire (equal to about 52.500,00 Euro)**
TOTAL FINANCED FUNDING AS PRINCIPAL INVESTIGATOR: 1.256.000,00 Euro

From 1997-today, Dr. Serafino has also been also involved as a Research Collaborator at more than fifty Projects aimed to diagnostic/therapeutic target discovery and to develop innovative therapeutic approaches not only for neoplastic diseases but also for a wide range of pathological conditions including infection, immunodeficiency disorders, autoimmune and neurodegenerative diseases for a **total FINANCED FUNDING of more than 3.000.000,00 Euro**

From 1986-today, Dr. Serafino has published N°139 Papers (N°131 Articles published on ISI journals + N°4 Book Chapters, + N°4 Full Articles published on Proceedings of International Congress) and has been an inventor for 1 Patent with PCT extension.
ORCID number: 0000-0002-1142-4752; RESEARCH ID: AAC-1719-2019; Scopus ID: 7003832003.
Bibliometric Indexes: H-index: 40 (Scopus); Total citations (Scopus): 4514 (last access: 01/08/2024)

Published Papers (Last 5 years):

1. **Original Article.** De Gregorio A, **SERAFINO A**, Krasnowska EK, Superti F, Di Fazio MR, Fuggetta MP, Hammarberg Ferri I, Fiorentini C. Protective Effect of Limosilactobacillus fermentum ME-3 against the Increase in Paracellular Permeability Induced by Chemotherapy or Inflammatory Conditions in Caco-2 Cell Models. INTERNATIONAL JOURNAL OF MOLECULAR SCIENCES 2023. DOI: 10.3390/ijms24076225.
2. **Original Article.** Manni L, Leotta E, Mollica I, **SERAFINO A**, Pignataro A, Salvatori I , Conti G, Chiaretti A, Soligo M. Acute intranasal treatment with nerve growth factor limits the onset of traumatic brain injury in young rats. BRITISH JOURNAL OF PHARMACOLOGY 2023. DOI 10.1111/bph.16056.
3. **Original Article.** Marino F, Klett A, Papaianni E, Drago SF, Macchi B, Rincón M, Andreola F, **SERAFINO A,** Grelli S, Mastino A, Borner C. Caspase-8 is required for HSV-1-induced apoptosis and promotes effective viral particle release via autophagy inhibition. CELL DEATH AND DIFFERENTIATION 2023
4. **Perspective. SERAFINO A,** Cozzolino M. The Wnt/beta-catenin signaling: a multifunctional target for neuroprotective and regenerative strategies in Parkinson's disease. NEURAL REGENERATION RESEARCH 2023**;** DOI: 10.4103/1673-5374.343908.
5. **Original Article.** Temperini ME, Di Giacinto F, Romanò S, Di Santo R, Augello A Polito R , Baldassarre L, Giliberti V, Papi M, Basile U, Niccolini B, Krasnowska EK, **SERAFINO A**, De Spirito M, Di Gaspare A , Ortolani M, Ciasca G. Antenna-enhanced mid-infrared detection of extracellular vesicles derived from human cancer cell cultures. JOURNAL OF NANOBIOTECHNOLOGY. 2022. DOI: 10.1186/s12951-022-01693-2.
6. **Original Article.** Zonfrillo M, Andreola F, Krasnowska EK, Sferrazza G, Pierimarchi P, **SERAFINO A.** Essential Oil from Eucalyptus globulus (Labill.) Activates Complement Receptor-Mediated Phagocytosis and Stimulates Podosome Formation in Human Monocyte-Derived Macrophages. MOLECULES 2022. DOI: 10.3390/molecules27113488.
7. **Original Article.** Romano, S; Di Giacinto, F; Primiano, A; Gervasoni, J; Mazzini, A; Papi, M; Urbani, A; **SERAFINO, A**; De Spirito, M; Krasnowska, EK; Ciasca, G. Label-free spectroscopic characterization of exosomes reveals cancer cell differentiation. ANALYTICA CHIMICA ACTA 2022. DOI:10.1016/j.aca.2021.339359
8. **Original Article.** Giovannini, D; Andreola, F; Spitalieri, P; Krasnowska, EK; Baldeschi, AC; Rossi, S; Sangiuolo, F; Cozzolino, M; **SERAFINO, A**. Natriuretic peptides are neuroprotective on in vitro models of PD and promote

dopaminergic differentiation of hiPSCs-derived neurons via the 8,/beta-catenin signaling. CELL DEATH DISCOVERY 2021. DOI: 10.1038/s41420-021-00723-6.

9. **Review.** Sferrazza, G; Corti, M; Brusotti, G; Pierimarchi, P; Temporini, C; **SERAFINO, A**; Calleri, E. Nature-derived compounds modulating Wnt/beta-catenin pathway: a preventive and therapeutic opportunity in neoplastic diseases. ACTA PHARMACEUTICA SINICA B 2020. DOI: 10.1016/j.apsb.2019.12.019.
10. **Original Article.** Bellisai C, Sciamanna I, Rovella P, Giovannini D, Baranzini M, Pugliese GM, Zeya Ansari MS, Milite C, Sinibaldi-Vallebona P, Cirilli R, Sbardella G, Pichierri P, Trisciuoglio D, Lavia P, **SERAFINO A**, Spadafora C. Reverse transcriptase inhibitors promote the remodelling of nuclear architecture and induce autophagy in prostate cancer cells. CANCER LETTERS 2020. DOI: 10.1016/j.canlet.2020.02.029.
11. **Original Article.** Rossi S, Rompietti V, Antonucci Y, Giovannini D, Scopa C, Scaricamazza S, Scardigli R, Cestra G, **SERAFINO A**, Carrì MT, D'Ambrosi N, Cozzolino M. UsnRNP trafficking is regulated by stress granules and compromised by mutant ALS proteins. NEUROBIOLOGY OF DISEASE 2020. DOI: 10.1016/j.nbd.2020.104792.
12. **Review. SERAFINO A,** Giovannini D, Rossi S, Cozzolino M. Targeting the Wnt/β-catenin pathway in neurodegenerative diseases: recent approaches and current challenges. EXPERT OPINION ON DRUG DISCOVERY 2020. DOI: 10.1080/17460441.2020.1746266.
13. **Original Article.** Sferrazza G, Corti M, Andreola F, Giovannini D, Nicotera G, Zonfrillo M, Serra M, Tengattini S, Calleri E, Brusotti G, Pierimarchi P, **SERAFINO A.** Bioassay-Guided Isolation of Nigracin, Responsible for the Tissue Repair Properties of Drypetes Klainei Stem Bark. FRONTIERS IN PHARMACOLOGY – ETHNOPHARMACOLOGY 2020. DOI: 10.3389/fphar.2019.01541.
14. **Review.** Sciamanna I, **SERAFINO A**, Shapiro JA, Spadafora C. The active role of spermatozoa in transgenerational inheritance. PROCEEDINGS OF THE ROYAL SOCIETY B: BIOLOGICAL SCIENCES 2019. DOI: 10.1098/rspb.2019.1263.
15. **Review.** Nicotera G, Sferrazza G, **SERAFINO A**, Pierimarchi P. The Iterative Development of Medicines Through the European Medicine Agency's Adaptive Pathway Approach. FRONTIERS IN MEDICINE (Lausanne) 2019. DOI: 10.3389/fmed.2019.00148.

Rome 01/08/2024
Annalucia Serafino