Enrico M. Bucci, PhD

Current Positions:

- SHRO Cancer Systems Biology & eHealth Programs director
- Adjunct Professor, Biology Dept, Temple University
- Esperto ad Acta del CNR per l'Integrità nella Ricerca Scientifica
- Resis Srl – C.E.O

D.o.B.: 30-08-1972 (Naples - Italy)

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Summary

Enrico Bucci was born in Naples, Italy, in 1972. He graduated summa cum laude in Biology in 1997 (University of Naples "Federico II," Italy). After four years as a Ph.D. student, comprising two years in Germany (Institut für Molekulare Biotechnologie, Jena, now called the Leibniz Institute on Aging – Fritz Lipmann Institute), he earned a Ph.D. in Biochemistry and Molecular Biology in 2001 by the Naples University "Federico II" (Italy). The same year he was appointed full researcher at the Institute for Biostructures and Bioimages of Italy's National Research Council (CNR).

In 2006, he founded his first start-up, BioNucleon Srl, which won the "2006 Best Young and Innovative Italian company" and was dedicated to nucleic acid-based drugs. It was incubated at the Canavese Bioindustry Park. Enrico Bucci then became CSO of the Park, heading a group of about 20 scientists which filed more than ten patent applications and published several research papers, while still running Bionucleon. By the end of 2008, after honoring all commitments related to its previous role, Enrico Bucci moved to become CSO of Biodigitalvalley Srl, his second start-up, dedicated to bioinformatics. In January 2013, he was appointed CEO.

In 2012, he got the Italian abilitation for a position of Associate Professor in Biochemistry (Abilitazione Nazionale 2012 – Settore Concorsuale 05/E1 – II Fascia -2012 – valid until 16/06/2023).

In July 2014, he voluntarily resigned from the CNR, since at the time he was investigating a high-profile case of scientific misconduct involving that institution.

In June 2016, he was appointed Adjunct Professor of Biology and Director of the System Biology program of the Sbarro Health Research Organization at the College of Science and Technology, Temple University (Philadelphia, US).

In July 2016, Bucci left Biodigitalvalley and founded Resis Srl, a company dedicated to research integrity.

Since May 2017, he has served as an advisor to the CNR in a project to develop a software screening pipeline to foster the integrity and correctness of all research published by the CNR's 7000 or so researchers.

Prof. Bucci's current research interests include:

1. Research integrity, scientific fraud detection, and analysis
2. Image Analysis;
3. Network & Systems biology;
4. Biological data mining and analytics;
5. Big Data and social network analytics in the pharmaceutical field.

Enrico Bucci has co-authored more than 90 papers in peer-reviewed international journals, ranging from quantitative paleontology to structural biology and image analysis, and led several research projects, many of which included both academic and industrial partners, in Italy and abroad.

He is a co-author of chapters in scientific books, and he is the author of a book dedicated to scientific fraud, published in September 2015 (second, revised edition: June 2020). His work on detecting scientific fraud has been covered by several national and international magazines, including Nature (2013, 2015, 2016, 2017,2018,2019,2020), and has been broadcast by the Italian State TV (RAI).

For the years 2017-2018, he has been vice-chair for the evaluation of FET-OPEN H2020 European Research Projects.

Since 2020, he is member of the international advisors of IAP (Inter Academy Partnership, an Organization reuniting more than 140 scientific academies worldwide, including the Italian Accademia dei Lincei) in a project dealing with Predatory Publishing.

Education

Università degli Studi di Napoli 'Federico II'

PhD, Biochemistry and Molecular Biology, 1997 – 2001

Final Score: graduated with mention of excellence

Università degli Studi di Napoli 'Federico II'

Diploma, Biology, 1991 - 1997

Final Score: 110/110 cum Laude

Liceo Antonio Genovesi - Napoli

Secondary School Diploma, Classical Studies, 1986 – 1991

Final Score: 60/60

Career

Adjunct Professor of Biology and Director of the System Biology program of the Sbarro Health Research Organization at the College of Science and Technology, Temple University (Philadelphia, US).

July 2016 – present

In charge of activities related to data analytics in different projects; in charge of Systems Biology research.

Adjunct External Professor, System Biology, Ph.D. School in Biology and Biotechnologies (Università degli Studi di Milano-Bicocca)

June 2015 – July 2016

In charge of teaching Network and Big Data Analytics to Ph.D. Students in a large Italian University, which started a large initiative for fostering research and collaboration in the area of System Biology (SYSBIO).

Full researcher at IBB-CNR

January 2001 - May 2014 (13 years five months)

Full researcher at the Istituto of Biostrutture e Bioimmagini - Naples.

The Institute of Biostructure and Bioimaging (IBB) was founded in 2001 in Naples by merging the previous "Centro di Studio di Biocristallografia," the Centro di Medicina Nucleare and the Catania section of the "Istituto per lo Studio delle Sostanze Naturali di Interesse Alimentare e Chimico Farmaceutico." The IBB is a member of the Italian National Research Councill (CNR). CNR Institutes work predominantly as public research centers and partners of universities.

Technology transfer expert at University of Naples Federico II

April 2008 - December 2008 (9 months)

TT expert, writing down a full proposal for improving the way the University transfers its knowledge to the industry.

Head of Research at Bioindustry Park del Canavese SpA

February 2006 - December 2008 (2 years 11 months)

Bioindustry Park Canavese is a science and technology park located in Canavese, near Turin in the north of Italy. The Park promotes and develops research in biotechnologies and life sciences, hosting

enterprises of the chemical, pharmaceutical, diagnostic, bioengineering, and information science fields. It offers research facilities, scientific and support services, such as technology transfer, patent support, tutoring/mentoring of start-ups and spin-offs.

Contract professor in General Chemistry at University of Naples Federico II

September 2004 - June 2005 (10 months)

In charge for teaching General Chemistry at the Naples University “Federico II” – Biotechnology Faculty.

External Scientist at Leibniz Institut for Age Research - formerly IMB - Jena (DE)

January 1999 - January 2001 (2 years one month)

Elucidation of the NMR structure of a non-coding region of Coxsackievirus B3 under the supervision of dr. M. Goerlach

Internship at Istituto di Ricerca di Biologia Molecolare "P. Angeletti" - Pomezia (Roma)

January 1996 - September 1996 (9 months)

Sequencing and the expressing a nonstructural protein of the virus HGV, a model for HCV, under the direction of dr. C.Traboni.

Positions in the private sector

Owner at Resis Srl

July 2016 - present

Resis Srl is a consultancy company dedicated to data analysis. It serves its customers providing services and applications in 3 main areas, i.e.:

Research Integrity and Misconduct Analysis;

Real-world big data analytics;

Systems Biology Research

C.E.O. at BioDigitalValley

January 2013 - July 2016 (3 years 6 months)

Main duties:

1. to lead, in conjunction with the Board, the development of the business strategy, overseeing the implementation of the Company's long and short term plans;

2. to staff the company appropriately;

3. to manage the annual budget and to reach our financial milestones;

4. to develop our services and products.

Founder and C.S.O. at BioDigitalValley (RGI Group)

December 2008 - July 2016 (7 years 7 months)

Biodigitalvalley is a start-up company, part of the R.G.I. group, born to exploit the group competencies in the bioinformatics sector.

Founder and C.S.O. at Bionucleon Srl

June 2005 - December 2008 (3 years 6 months)

Bionucleon is a Start-up company funded initially by Eporgen Venture S.p.A., started in 2005 with the aim to develop a new technology to improve oligo-based ligands as Drugs.

Professional achievements in the Research Integrity Field

As a recognized international expert in the field of data manipulation and research integrity, Enrico Bucci was involved in several investigations of alleged research misconduct in Italy and abroad, both for Academic and other public entities (including the Italian Police, the Hawaii University, the University of Edinburgh, the Italian CNR and others).

He is currently holding the following positions:

Consultant for the BRIC - Copenhagen
January 2021 - Present

Responsible for the technical analysis of manuscripts to submit

Consultant for the Helmholtz Zentrum München
January 2021 - Present

Responsible for the technical analysis of manuscripts to submit

Consultant for FMP – Berlin
January 2021 - Present

Responsible for the technical analysis of manuscripts to submit

Esperto ad acta della Commissione per l'Etica e l'Integrità nella Ricerca del CNR
November 2019 – Present

External expert in the field of research integrity

Consultant for IFO – Regina Elena (Rome)
September 2019 - Present

Responsible for the technical analysis of manuscripts to submit; in charge for the technical evaluation of a high-profile misconduct case

Consultant for Springer Nature
September 2019 - Present

Responsible for the technical analysis of manuscripts approved for publication for the journals Cell Death Discovery, Cell Death and Diseases and Cell Death and Differentiation

Advisor for The Leibniz Institute on Aging – Fritz Lipmann Institute – Jena (Germany)
October 2017 - Present

Responsible for the technical analysis of manuscripts and PhD Thesis to submit; in charge for the technical evaluation of a high-profile misconduct case

Advisor for the Italian National Research Council (C.N.R.)
April 2017 - Present

Advisor in a project aimed to foster the integrity and correctness of published research and grant/position applications by the CNR's 7000 or so researchers. Activities include the screening of papers connected to misconduct allegations, the pre-publication analysis of papers on a voluntary basis and the analysis of publications connected to public competition for granting and career advancements.

Positions held in the past:

Advisor for IUF – Leibniz Research Institute for Environmental Medicine – Dusseldorf (Germany)
January 2020 – December 2020

Responsible for the technical analysis of manuscripts to be submitted; in charge for the technical evaluation of potential misconduct cases

Advisor for The Princess Margaret Cancer Centre – Toronto (Canada)
January 2020 – December 2020

Responsible for the technical analysis of manuscripts to be submitted; in charge for the technical evaluation of potential misconduct cases

Advisor for The Luxembourg Agency for Research Integrity (LARI)– Luxembourg
October 2018 – October 2019

Responsible for technical investigation of selected allegations of Research Misconduct

Advisor for the CERM foundation - Pisa
July 2018 – July 2019

Responsible for the technical analysis of manuscripts to be submitted.

Advisor for the IMT - Lucca
September 2017 – December 2018

Responsible for technical support in potential misconduct cases and for teaching Research Integrity to about 200 PhD students

Expert Member of the Bioethics Committee European Society for Cardiovascular and Endovascular Surgery
July 2016 – December 2017

The European Society of CardioVascular Surgery (ESCVS) was founded May 31st, 1951, in the city of Turin, Italy, with statutes in Strasbourg, France, under the name of "Société Européenne de Chirurgie CardioVasculaire". It is the oldest European Society in Cardiovascular Surgery, counting far more than

1000 surgeons as members. Very recently, the Society decided to set up a committee dedicated to preserve its high ethical standards. I was appointed as expert member in research integrity.

Editor for the detection of potential image manipulations in the following scientific journals:

- Molecular Cell (Elsevier)
- Spectrochimica Acta Part A (Elsevier)
- Cancer Letters (Elsevier)
- BBRC (Elsevier)
- BCP (Elsevier)
- FEBS Letters

Consultant or appointed expert in high profile cases of alleged misconduct

I worked as an appointed expert in the following investigations of high-profile cases (including allegations of fabrication, falsification and plagiarism – please note that only for cases gon public names are disclosed):

JJJ, Institute director, Germany

LLL, Professor and Cancer Institute Director, Spain

Marianna Madia, minister of the Italian Republic, Italy

XXX, professor at Columbus University - Ohio

YYY, researcher at Edinburgh University – UK

WWW, professor at Milan University, Italy

CCC, professor and medical doctor at Naples University, Italy

Federico Infascelli, professor at Naples University - Italy

ZZZ, professor at Padua University – Italy

Alfredo Fusco, professor at Naples University – Italy

Publications in Peer-Reviewed Journals

1997

1. Calogero, R. A. & Lener, D; Antico, G; Andrè, A; Aulicino, A; Bucci, E; Darlix, JL; Calogero, R. A. IN VITRO CHARACTERIZATION OF PEPTIDES INTERFERING WITH THE HIV-1 NUCLEOCAPSID PROTEIN (NCp7) FUNCTIONS. Protein Pept. Lett. 4, 299 (1997).

1998

2. Iazzetti, G., Santini, G., Rau, M., Bucci, E. & Calogero, R. A. VIRTLAB: a virtual molecular biology laboratory. Bioinformatics 14, 815–6 (1998).

1999

3. Benedetti, E. et al. Synthesis and conformation of dipeptide taste ligands containing homo-ß-amino acid residues. J. Phys. Org. Chem. 12, 577–587 (1999).
4. Bucci, E. et al. A new ferrocenemethyl-thymidine nucleoside: Synthesis, incorporation into oligonucleotides and optical spectroscopic studies on the resulting single strand, duplex and triplex structures. Tetrahedron 55, 14435–14450 (1999).
5. De Napoli, L. et al. A new solid-phase synthesis of oligonucleotides 3'-conjugated with peptides. Bioorg. Med. Chem. 7, 395–400 (1999).
6. Saviano, M., Bucci, E., Romanelli, A. & Pedone, C. Conformational features of Peptidic Nucleic Acids for the rational design of biologically active PNAs and hybrid PNA-oligonucleotides. Minerva Biotecnol. 11, 175–186 (1999).
7. Benedetti, E., Bucci, E. & De Napoli, L. Homo-beta-Amino Acid Residues: Synthesis and Conformation of New Dipeptide Taste Ligands. Pept. Symp. 344–345 (1999).

2000

8. Rossi, F. et al. Effect of lengthening of peptide backbone by insertion of chiral ß-homo amino acid residues: Conformational behavior of linear peptides containing alternating L-leucine and ß-homoL-leucine residues. Biopolymers 53, 140–149 (2000).
9. Saviano, M. et al. Computational procedures to explain the different biological activity of DNA/DNA, DNA/PNA and PNA/PNA hybrid molecules mimicking NF-kappaB binding sites. J. Biomol. Struct. Dyn. 18, 353–62 (2000).
10. Sorrentino, S. et al. The two dimeric forms of RNase A. FEBS Lett. 466, 35–9 (2000).

2001

11. Fattorusso, R. et al. Structural NMR studies of zinc finger domains. In J. Inorg. Biochem. 86, 45 (2001).

2002

12. Zell, R., Sidigi, K., Bucci, E., Stelzner, A. & Görlach, M. Determinants of the recognition of enteroviral cloverleaf RNA by coxsackievirus B3 proteinase 3C. RNA 8, 188–201 (2002).

2003

13. Esposito, S. et al. FUNCTIONAL AND STRUCTURAL CHARACTERIZATION OF SINGLE ZINC FINGER DNA BINDING DOMAINS. Ital. J. Biochem. 52, 14 (2003).
14. Isernia, C. et al. NMR structure of the single QALGGH zinc finger domain from the Arabidopsis thaliana SUPERMAN protein. Chembiochem 4, 171–80 (2003).
15. Wiesehan, K. et al. Selection of D-amino-acid peptides that bind to Alzheimer's disease amyloid peptide abeta1-42 by mirror image phage display. Chembiochem 4, 748–53 (2003).
16. Zaccaro, L. et al. Synthetic peptides mimicking the interleukin-6/gp130 interaction: a two-helix bundle system. Design and conformational studies. J. Pept. Sci. 9, 90–105 (2003).

2004

17. Ohlenschlager, O. et al. The structure of the stemloop D subdomain of coxsackievirus B3 cloverleaf RNA and its interaction with the proteinase 3C. Structure 12, 237–248 (2004).
18. Musumeci, D. et al. New synthesis of PNA-3'DNA linker monomers, useful building blocks to obtain PNA/DNA chimeras. Biopolymers 76, 535–42 (2004).
19. Musumeci, D. et al. TARGETING OF PNA TO A CYTOPLASMIC VIRUS. In J. Pept. Sci. 10, 196 (2004).

2005

20. Bucci, E. et al. On the thermal stability of the two dimeric forms of ribonuclease A. Biophys. Chem. 116, 89–95 (2005).

2006

21. Roviello, G. N. et al. Synthesis, characterization and hybridization studies of new nucleo-gamma-peptides based on diaminobutyric acid. J. Pept. Sci. 12, 829–35 (2006).
22. Musumeci, D. et al. A short PNA targeting coxsackievirus B3 5'-nontranslated region prevents virus-induced cytolysis. J. Pept. Sci. 12, 161–70 (2006).
23. Signore, M., Pede, C., Bucci, E. & Barbera, C. First report of the genus Cladocyclus in the Lower Cretaceous of Pietraroja (Southern Italy). BOLLETTINO-SOCIETA Paleontol. Ital. 45, 141 (2006).

2007

24. Salvatore, A. et al. Haptoglobin binding to apolipoprotein A-I prevents damage from hydroxyl radicals on its stimulatory activity of the enzyme lecithin-cholesterol acyl-transferase. Biochemistry 46, 11158–68 (2007).
25. Roviello, G. N. et al. dabPNA: design, synthesis, and DNA binding studies. Nucleosides. Nucleotides Nucleic Acids 26, 1307–10 (2007).

26. Moccia, M. et al. Thermodynamic studies on PNA and PNA/DNA dendrimer formation. Nucleosides. Nucleotides Nucleic Acids 26, 1173–6 (2007).
27. Bucci, E. M. et al. ODN-based Drugs for targeting of extracellular proteins. Nucleosides. Nucleotides Nucleic Acids 26, 1047–50 (2007).

2008

28. Roviello, G. N. et al. Evidences for complex formation between L-dabPNA and aegPNA. Bioorg. Med. Chem. Lett. 18, 4757–60 (2008).
29. Roviello, G. N. et al. Further Studies On Nucleopeptides With DABA-based Backbone. In IBIC 14, 393–400 (2008).
30. Roviello, G. N., Musumeci, D., Pedone, C. & Bucci, E. M. Synthesis, characterization and hybridization studies of an alternate nucleoe/c-peptide: complexes formation with natural nucleic acids. Amino Acids (2008).
31. Oliviero, G. et al. Synthesis of 4- N-alkyl and ribose-modified AICAR analogues on solid support. Tetrahedron 64, 6475–6481 (2008).
32. Mancardi, D. et al. Fractal parameters and vascular networks: facts & artifacts. Theor. Biol. Med. Model. 5, 12 (2008).

2009

33. Salvatore, A. et al. Haptoglobin binds apolipoprotein E and influences cholesterol esterification in the cerebrospinal fluid. J. Neurochem. 110, 255–63 (2009).
34. Roviello, G. N. et al. Alternate dab-aegPNAs: synthesis, nucleic acid binding studies and biological activity. Mol. Biosyst. 6, 199–205 (2009).
35. Roviello, G. N. et al. Evidences of complex formation between DABA-based nucleo-gamma-peptides with alternate configuration backbone. J. Pept. Sci. 15, 147–54 (2009).
36. Roviello, G. N. et al. Solid phase synthesis and RNA-binding studies of a serum-resistant nucleo-epsilon-peptide. J. Pept. Sci. 15, 155–160 (2009).
37. Moccia, M. et al. Preliminary studies on noncovalent hyperbranched polymers based on PNA and DNA building blocks. J. Pept. Sci. 15, 647–53 (2009).
38. Mila, S. et al. Lymphocyte proteomics of Parkinson's disease patients reveals cytoskeletal protein dysregulation and oxidative stress. Biomark. Med. 3, 117–28 (2009).
39. Bongioanni, P. et al. CD45 expression in peripheral T cells of amyotrophic lateral sclerosis patients during disease progression. in Eur. J. Neurol. 16, 211 (2009).
40. Acquadro, E. et al. Matrix-assisted laser desorption ionization imaging mass spectrometry detection of a magnetic resonance imaging contrast agent in mouse liver. Anal. Chem. 81, 2779–84 (2009).
41. Roviello, G. N., Musumeci, D., Castiglione, M. et al. Solid phase synthesis and RNA-binding studies of a serum-resistant nucleo-e-peptide. J. Pept. Sci (2009).

2010

42. Roviello, G. N. et al. Synthesis, spectroscopic studies and biological activity of a novel nucleopeptide with Moloney murine leukemia virus reverse transcriptase inhibitory activity. Amino Acids 38, 1489–96 (2010).
43. Roviello, G. N. et al. Synthesis of a novel Fmoc-protected nucleoaminoacid for the solid phase assembly of 4-piperidyl glycine/L-arginine-containing nucleopeptides and preliminary RNA: interaction studies. Amino Acids 39, 795–800 (2010).
44. Roviello, G. N., Benedetti, E., Pedone, C. & Bucci, E. M. Nucleobase-containing peptides: an overview of their characteristic features and applications. Amino Acids 39, 45–57 (2010).
45. Roviello, G. N., Musumeci, D., Pedone, C. & Bucci, E. M. Synthesis, characterization and hybridization studies of an alternate nucleo epsilon/gamma-peptide: complexes formation with natural nucleic acids. Amino Acids 38, 103–111 (2010).
46. Natale, M. et al. A meta-analysis of two-dimensional electrophoresis pattern of the Parkinson's disease-related protein DJ-1. Bioinformatics 26, 946–52 (2010).
47. Moccia, M. et al. Synthesis of a l-lysine-based alternate alpha,epsilon-peptide: a novel linear polycation with nucleic acids-binding ability. Int. J. Pharm. 397, 179–83 (2010).
48. Maresca, B. et al. Quantitative determination of haptoglobin glycoform variants in psoriasis. Biol. Chem. 391, 1429–39 (2010).
49. Alberio, T. et al. Changes in the two-dimensional electrophoresis pattern of the Parkinson's disease related protein DJ-1 in human SH-SY5Y neuroblastoma cells after dopamine treatment. IUBMB Life 62, 688–92 (2010).

2011

50. Sala, V. et al. New mouse models to study HGF/Met role in postnatal heart development and heart disease pathogenesis. in FEBS J. 278, 477 (2011).
51. Roviello, G. N., Ricci, A., Bucci, E. M. & Pedone, C. Synthesis, biological evaluation and supramolecular assembly of novel analogues of peptidyl nucleosides. Mol. Biosyst. 7, 1773–8 (2011).
52. Roviello, G. N., Musumeci, D., Bucci, E. M. & Pedone, C. Synthesis and characterization of a novel ester-based nucleoamino acid for the assembly of aromatic nucleopeptides for biomedical applications. Int. J. Pharm. 415, 206–10 (2011).
53. Roviello, G. N. N. et al. RNA-binding and viral reverse transcriptase inhibitory activity of a novel cationic diamino acid-based peptide. J. Med. Chem. 54, 2095–101 (2011).
54. Natale, M., Maresca, B., Abrescia, P. & Bucci, E. M. Image Analysis Workflow for 2-D Electrophoresis Gels Based on ImageJ. Proteomics Insights 4, 37–49 (2011).
55. Musumeci, D. et al. DNA-based strategies for blocking HMGB1 cytokine activity: design, synthesis and preliminary in vitro/in vivo assays of DNA and DNA-like duplexes. Mol. Biosyst. 7, 1742–52 (2011).
56. Musumeci, D., Bucci, E. M., Pedone, C. & Roviello, G. N. Evidences for supramolecular organization of nucleopeptides: synthesis, spectroscopic and biological studies of a novel dithymine L-serine tetrapeptide. Mol. Biosyst. 7, 1073–80 (2011).

57. Malgieri, G. et al. Zinc to cadmium replacement in the A. thaliana SUPERMAN Cys2His2 zinc finger induces structural rearrangements of typical DNA base determinant positions. Biopolymers 95, 801–810 (2011).
58. Bellizzi, G., Bucci, E. M. & Bucci, O. M. Analysis and Design of Magnetically Driven Nanomachines. Nanotechnology, IEEE Trans. 10, 1131–1140 (2011).

2012

59. Roviello, G. N. G. N. G., Musumeci, D., Bucci, E. M. & Pedone, C. Dakin-West reaction on 1-thyminyl acetic acid for the synthesis of 1,3-bis (1-thyminyl)-2-propanone, a heteroaromatic compound with nucleopeptide-binding properties. Amino Acids 43, 1615–23 (2012).
60. Roviello, G. N., Mottola, A., Musumeci, D., Bucci, E. M. & Pedone, C. Synthesis of a diaminopropanoic acid-based nucleoamino acid and assembly of cationic nucleopeptides for biomedical applications. Amino Acids 43, 1465–70 (2012).
61. Roviello, G. N., Mottola, A., Musumeci, D., Bucci, E. M. & Pedone, C. Synthesis and aggregation properties of a novel enzymatically resistant nucleoamino acid. Amino Acids 43, 1465–70 (2012).
62. Roviello, G. N., Mottola, A., Musumeci, D., Bucci, E. M. & Pedone, C. Synthesis and aggregation properties of Anovel enzymatically resistant nucleoamino acid. Amino Acids 43, 1465–1470 (2012).
63. Natale, M., Caiazzo, A., Bucci, E. M. M. & Ficarra, E. A Novel Gaussian Extrapolation Approach for 2D Gel Electrophoresis Saturated Protein Spots. Genomics. Proteomics Bioinformatics 10, 336–344 (2012).
64. Musumeci, D. et al. G-quadruplex-forming oligonucleotide conjugated to magnetic nanoparticles: synthesis, characterization, and enzymatic stability assays. Bioconjug. Chem. 23, 382–91 (2012).
65. Bucci, O. & Bucci, E. M. Electromagnetism, Nanotechnologies and Biology: New Challenges and Opportunities. Radio Sci. Bull. 341, 10–22 (2012).
66. Giordano, M. et al. iMole, a web based image retrieval system from biomedical literature. Electrophoresis 34, 1965–68 (2013).

2013

67. Gatti, S. et al. Gene expression profiling of HGF/Met activation in neonatal mouse heart. Transgenic Res. 22, 579–593 (2013).
68. Alberio, T. et al. Parkinson's Disease plasma biomarkers: An automated literature analysis followed by experimental validation. J. Proteomics 90, 107–114 (2013).
69. Musumeci, D. et al. Hairpin ODN-based ligands as potential inhibitors of HMGB1 cytokine activity. RSC Adv. (2013).

2014

70. Bucci, E. M., Bucci, O. M. & Sorrentino, R. Nanotechnology and Life: An Engineer' s Perspective. Proc. IEEE 102, 930–935 (2014).

71. Benso, A., Bucci, E. & Carlo, S. Di. Alice in “Bio-land”: engineering challenges in the world of Life-Sciences. IT Pro, 38–47 (2014).
72. Acquadro, E. *et al.* Human SOD1-G93A specific distribution evidenced in murine brain of a transgenic model for Amyotrophic Lateral Sclerosis by MALDI Imaging Mass Spectrometry. *J. proteome res* **13,** 1800–1809 (2014).

2015

73. C. Petti, G. Picco, M. L. Martelli, E. Trisolini, E. Bucci, T. Perera, C. Isella, and E. Medico, “Truncated RAF kinases drive resistance to MET inhibition in MET-addicted cancer cells.,” *Oncotarget*, vol. 6, no. 1, pp. 221–33, (2015).

2017

74. A. Chirico, S. Serpentini, T. Merluzzi, L. Mallia, P. Del Bianco, R. Martino, L. Trentin, E. Bucci, M. De Laurentiis, E. Capovilla, F. Lucidi, G. Botti, and A. Giordano, “Self-efficacy for Coping Moderates the Effects of Distress on Quality of Life in Palliative Cancer Care.” *Anticancer Res.*, vol. 37, no. 4, pp. 1609–1615, (2017).
75. E. Bucci, “On the new ethical text proposed by the Fondazione Veronesi to researchers,” *Futur. Sci. Ethics*, vol. 2, no. 1, pp. 170–172, (2017).
76. E. M. Bucci and E. Carafoli, “What is scientific fraud?” *Futur. Sci. Ethics*, vol. 2, no.2, pp. 16–35, (2017).

2018

77. E. M. Bucci, “Automatic detection of image manipulations in the biomedical literature,” *Cell Death Dis.*, vol. 9, no. 3, p. 1.9, (2018).
78. Bucci, E. M. “Xylella fastidiosa, a new plant pathogen that threatens global farming: Ecology, molecular biology, search for remedies”. *Biochem. Biophys. Res. Commun.* 502, 173–182 (2018).
79. Bucci, E. “Xylella, fatti e misfatti.” *Riv. Giuridica dell’Ambiente* 3, 437–448 (2018).

2019

80. Bucci, E. M. “On zombie papers.” *Cell Death Dis.* Vol. 10, no. 3, 189-190 (2019).
81. Montagna R, Canonico R, Alfano L, et al. “Genomic analysis reveals association of specific SNPs with athletic performance and susceptibility to injuries in professional soccer players*.” J Cell Physiol.* August 2019
82. Bucci E.M. “Effectiveness of the monitoring of X. fastidiosa subsp. pauca in the olive orchards of Southern Italy (Apulia).” *Rend Lincei Sci Fis e Nat*. 1-8 (2019).
83. La Montagna R, Canonico R, Alfano L, Bucci E, Boffo S, Staiano L, Fulco B, D'Andrea E, De Nicola A, Maiorano P, D'Angelo C, Chirico A, De Nicola A, Giordano A. Genomic analysis reveals association of specific SNPs with athletic performance and susceptibility to injuries in professional soccer players. *J Cell Physiol.* 2019;235(3):2139-2148. doi:10.1002/jcp.29118

84. Bassi R, Bucci EM, Calogero RA, Carninci P, Ciliberto G, Conte P, De Luca M, Corbellini G, Giordano A, Marchionni L, Massaro Giordano G, Parini A, Sbardella G. Look for methods, not conclusions. *Cell Death Dis* 2019 1012. 2019;10(12):1-2. doi:10.1038/s41419-019-2179-8
85. Forte IM, Indovina P, Costa A, et al. Blood screening for heavy metals and organic pollutants in cancer patients exposed to toxic waste in southern Italy: A pilot study. *J Cell Physiol*. 2019. doi:10.1002/jcp.29399

2020

86. Carbone M, Green JB, Bucci EM, Lednicky JJ. Coronaviruses: Facts, Myths and Hypotheses. J Thorac Oncol. 2020;0(0). doi:10.1016/J.JTHO.2020.02.024
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Books and Book Chapters

1. J. Veldmeijer, M. Signore and E. Bucci, “Predator-prey interaction of Brazilian Cretaceous toothed pterosaurs: A case example,” in *Predation in Organisms: A Distinct Phenomenon*, Springer, 2007, pp. 295–308.
2. E. M. Bucci, M. Natale, and A. Poli, “Protein Networks: Generation, Structural Analysis and Exploitation,” in *Systems and Computational Biology - Molecular and Cellular Experimental Systems*, N.S. Yang, Ed. InTech, 2011.
3. E. M. Bucci, *Cattivi Scienziati*. Turin, Add Editore, 2015.
4. E. Cattaneo, E. M. Bucci, and D. Falco, “Il finanziamento della ricerca scientifica e le politiche dell’UE,” in *Europa. Le sfide della Scienza*, Rome, Treccani, 2018, pp. 420–428.
5. Bucci EM. “Etica delle vaccinazioni: problemi e approcci”, in *Etica Dei Vaccini. Tra Libertà e Responsabilità*. ed. Donzelli; 2021:35-62.

Leading Responsibility in large scientific projects

SHRO Cancer Systems Biology Program - Director

June 2016 to present

This program relies on the use of (a) collective technologies used to explore the roles, relationships and actions of the various types of molecules that make up the cells of an organism and (b) informatics approaches with the goal to rationally construct an integrated picture to better understand the dynamic behavior and regulation of integrated intra- and intercellular biomolecular networks deregulated in cancer. Special interest is given to new computational approaches, able to get insight on how measurements of global network parameters – such as different types of network entropy – can be related to the experimental determination of cellular deregulated pathways. At the heart of this program, there is a strong emphasis on global frameworks useful to translate quantitative predictions into experimentally validated facts. Our current Systems Biology work in cancer research is divided into three main topics:

- Identification of new computational descriptions of the cancerous cell;
- Prediction of measurable differences among normal and cancerous cells;
- Wet lab pre-clinical validation

The final aim of this program is to get a new, more general and more accurate quantitative description of the cancerous cell, which in turn should provide a better quantitative tool for the preclinical development of new treatments.

Total cost: 150.000 euro

Open Source Drug Discovery Platform – Scientific responsible

January 2013 to January 2015

Members: Enrico Bucci, Dario Bonino, Olivier Terzo, Alfredo Benso

A research project, which aims to:

1. Build a so-called regional "Unità di Ricerca" (Research Unit) dedicated to exploring the paradigm of Open Source Drug Development;

2. Set up a first open-access informatic platform dedicated to the Open Source Drug Development, allowing software and data sharing in a protected, cloud-friendly environment;

3. Attract other research partners, for future funding applications and industrial service set-up

Total cost: about 250.000 euro

ParIS - Parkinson Information System – Scientific responsible

July 2010 to July 2012

Members: Enrico Bucci, Dario Bonino, Andrea Ruffino, Moreno Cornaz, Joey Guidone, Massimo Natale, Manuela Giordano, Mauro Fasano, Tiziana Alberio, Cristina Cereda

A research project devoted to the testing of a new procedure for finding peripheral biomarkers in Parkinson Disease.

This project involved the collaboration of 100 patients (50 PD and 50 neurological controls) who donated their blood for protein and DNA analysis.

ParIS was partially funded by the Valle d'Aosta regional government, for a total cost of about 2.100.000 euro

IMAGE - Image Meta Analysis Generation and Exploitation – Scientific Responsible

April 2009 to April 2010

Members: Enrico Bucci, Dario Bonino, Massimiliano Gullusci, Massimo Natale, Luca Montagnoli

A project dedicated to the meta-analysis of proteomic 2D-gel images in the literature.

Total cost: about 830.000 euro, partially funded under the frame of the "Legge regionale n. 84 del 7 dicembre 1993" (Valle d'Aosta region)

iTECHPLAT – Scientific responsible

2007 to November 2008

Members: Enrico Bucci, Fabrizio Conicella

Misura 3.4 Area: Obiettivo 2 del DOCUP 2000 – 2006 Regione Piemonte. Scouting and applied R&D for health care applications.

Total cost: about 700.000 euro

Patenting Activity

Therapeutic agents for the treatment of HMGB1-related pathologies

United States Patent Application 11/631,328

Inventors: Enrico Bucci, Domenico Barone, Marco Bianchi, Silvano Fumero, Margherita Valente, Roberto Sapio, Domenica Musumeci

METHOD FOR SEQUENCING NUCLEIC ACIDS AND ANALOGUES THEREOF

eu Patent Application PCT/EP2006/005188

Inventors: Enrico Bucci, Maria Moccia, Domenica Musumeci, Carlo Pedone, Giovanni Roviello, Roberto Sapio, Margherita Valente

Withdrawn: 08.12.2007

INHIBITION OF HRP-3 USING MODIFIED OLIGONUCLEOTIDES

eu Patent Application PCT/EP2009/004186

Inventors: Enrico Bucci, Valentina Anrò, Sarah Dewilde, Domenico Barone, Nicoletta Minari, Roberto Sapio, Margherita Valente, Sara Tosti, Laura Ricci

Tool and Method for Telediagnostic

United States Patent Application USPTO 61/184,107

Inventors: Enrico Bucci, Dario Bonino, Massimo Natale, Luca Montagnoli, Massimiliano Gullusci, Paolo

Consoli

Withdrawn provisional patent application

DISPOSITIVO GENERATORE DI CAMPO ELETTROMAGNETICO E METODO DI INDUZIONE DI IPERTERMIA

Italy Patent Application ITTO20081011 (A1)

Inventors: Enrico Bucci, Gennaro Bellizzi, Maria Lucia Calabrese, Rita Massa

METODO PER LA DIAGNOSI IN VITRO DELLA RESISTENZA AD UN TRATTAMENTO CON PLATINOIDI IN UN INDIVIDUO CON CANCRO OVARICO

Italy Patent Application ITTO20080917 (A1)

Inventors: Enrico Bucci, Maria Flavia Di Renzo, Annalisa Lorenzato, Cosimo Martino, Martina Olivero

USO DELL'APTOGLOBINA, PEPTIDI LEGANTI L'APTOGLOBINA, POLIMERI CONTENENTI GLI STESSI E LORO USO

Italy Patent Application ITTO20080894 (A1)

Inventors: Enrico Bucci, Paolo Abrescia, Luisa Cigliano, Davide Corpillo, Alfonso Salvatore

BIOMARCATORE, METODO E KIT PER LA DIAGNOSI DELL'INFARTO DEL MIOCARDIO

Italy Patent Application ITTO20080789 (A1)

Inventors: Enrico Bucci, Davide Corpillo, Katarzyna Lys, Massimo Natale

BIOMARKERS FOR DIAGNOSING AND DETECTING THE PROGRESSION OF NEURODEGENERATIVE DISORDERS, IN PARTICULAR OF AMYOTROPHIC LATERAL SCLEROSIS

eu Patent Application PCT/IB2009/007580

Inventors: Enrico Bucci, Chiara Abrescia, Alessandra Giuliano Albo, Paolo Bongioanni, Massimo Natale, Davide Corpillo, Vincenzo De Tata, Lorenza Franciosi, Katarzyna Lis

Biomarkers for diagnosing and detecting the progression of neurodegenerative disorders, in particular of Amyotrophic Lateral Sclerosis

United States Patent WO2010/061283 Issued June 3, 2010

Inventors: Enrico Bucci, Chiara Abrescia, Giuliano Albo A, Bongioanni P, Natale M, Corpillo D, De Tata V, Franciosi L, Lis K

Honors and Awards

Unioncamere Award - the Best Young and Innovative Italian Company, 2006

National Italian American Foundation - Giovan Giacomo Giordano Foundation Lifetime Achievement Award for Ethics and Creativity in Medical Research, 2017

Certifications

Certificate of Appreciation - American Chemical Society - February 2013

30-06-2021