

[Please follow the template below as closely as possible; it may be adapted as necessary]

PERSONAL INFORMATION

Family name, First name: **Ruvo, Menotti**

Researcher unique identifier(s): **Researcher ID: K-2603-2018; Scopus Author ID: 6602155654; ORCID: 0000-0001-5997-756X.**

Date of birth: **April, 20th, 1964.**

Nationality: **Italian**

URL for web site: **<http://www.ibb.cnr.it/?command=viewu&id=386>**

• EDUCATION

1991 Master degree, Department of Chemistry, University of Napoli, Federico II, Italy.

• CURRENT POSITION(S)

2020 –Current Position: Research Director, IBB, CNR, Napoli.

• PREVIOUS POSITIONS

2001-2001 Position held: Associate Director, Xeptagen SpA, Napoli

1991 – 2000 Position held: Senior Scientist, Tecnogen SpA, Caserta

• SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS

2001 – 2021 Number of Postdocs/ PhD/ Master Students: 15 Post-docs; 10 PhD students; 10 Master Students. Department of Chemistry, University of Naples, Federico II; Department of Biological Sciences, University of Napoli, Federico II; Department of Pharmacy, University of Napoli, Federico II; PhD in Biomolecular Sciences, University L. Vanvitelli, Napoli.

• TEACHING ACTIVITIES (if applicable)

1997 – 2001: Teacher. Topics: Chemistry of Peptide Synthesis, Solid Phase Synthesis of Peptide Libraries, Analytical Methods for the Quality Control of Peptide Libraries, Experimental of Solid Phase Synthesis of Peptide Libraries, Experimental of Cleavage and Purification of Peptide Libraries, Experimental of Characterization of Peptide Libraries, Experimental of Screening of Peptide Libraries. Name of Institution: ICS-UNIDO; Countries: Italy (1997), India (1998), South Africa (1998), Hungary (2001).

2016: Teacher. Topics: Library synthesis, screening and combinatorial chemistry techniques. PhD in Biomolecular Sciences University of Campania Luigi Vanvitelli, Coordinator Prof. Andrea Riccio. XXX ciclo.

2003: Teacher. Topics: Library synthesis, screening and combinatorial chemistry techniques. PhD in Biomolecular Sciences University of Campania Luigi Vanvitelli, Coordinator Prof. Augusto Parente. XVII ciclo.

2011: Teacher. Topics: Mass spectrometry; Mass methods for qualitative and quantitative analysis; Synthesis and screening of peptide libraries. Project IFTS organized by Istituto Tecnico Industriale Giordani, NAPOLI.

2006: Teacher. Topics: Mass spectrometry; Protein characterization by mass spectrometry; protein expression and purification; Project “STRUIM” supported by FESR in the framework of Programma Operativo Nazionale “Ricerca Scientifica, Sviluppo Tecnologico, Alta Formazione”

2000-2006 in biostructures and bioimaging.

• ORGANISATION OF SCIENTIFIC MEETINGS (if applicable)

2014, Co-chairman 14th Naples Workshop on Bioactive Peptides; Country: Italy (Naples).

2016, Co-chairman 15th Naples Workshop on Bioactive Peptides; Country: Italy (Naples).

2018, Co-chairman 16th Naples Workshop on Bioactive Peptides; Country: Italy (Naples).

2007, Organizing committee, First Symposium on Combinatorial Science in Biology, Chemistry, Catalysts and Materials. Italy (Florence)

- **REVIEWING ACTIVITIES (if applicable)**

2019-present: Editor and reviewer: International Journal of Molecular Sciences, MDPI
Academic Editor

2019-present: Editor and reviewer: Scientific Report, Springer. Academic Editor

2020-present: Editor and reviewer: Current Pharmaceutical Biotechnologies, Bentham
Academic Editor.

2013-present: Editor and reviewer: Current Drug Discovery technologies, Bentham
Academic Editor. Protein and Peptide Letter, Bentham. Academic Editor.

Evaluator for FET-OPEN projects (2020), FP VII projects (2011); ANF (2017); PRIN, FIRB,
Scientific Cooperation Between Germany And Israel (Israel), Rustaveli Foundation (Georgia), ESF
EUROCORES, European Association for Haemophilia and Allied Disorders.

- **MEMBERSHIPS OF SCIENTIFIC SOCIETIES (if applicable)**

2017 – present Founding Member, Research Network Italian Peptide Network.

2004 –2012 Associated Member: European Peptide Society

2004 – 2009 Associated Member: American Peptide Society

- **MAJOR COLLABORATIONS (if applicable)**

Università del Sannio, Dept Electronic Engineering, Benevento, Prof. Cusano, New Lab-on-Fiber
biosensors.

ISASI-CNR, Napoli, Dr.. Emanuela Esposito, New Infrared Spectroscopy based biosensors.

IPCB-CNR, Napoli, Dr. Ing. Michele Giordano, New Long Period Grating sensing platforms.

King's College, London, Prof. Mauro Giacca, new small molecule inhibitors of COVID-19 infection.

Università degli Studi di Napoli Federico II. Dept Medicine, Prof. Leonardi, new monoclonal antibodies.

Imperial College, London, Prof. Guido Franzoso, development of anti-myeloma compounds.

John Hopkins Univ. Baltimore, Prof. Nazareno Paolocci, development of new therapeutics for
arrhythmogenic cardiomyopathy.

BIOVIII srl, Napoli, new biotherapeutics and drug delivery systems.

Bracco Imaging, Milano, antibodies in imaging applications, Dr. Maiocchi.

DIOGENX, Nice (France), new biotherapeutics, Dr. Botti.

Appendix: All ongoing and submitted grants and funding of the PI and of the Team Members (Funding ID)

On-going Grants (Please indicate "No funding" when applicable):

<i>Project Title</i>	<i>Funding source</i>	<i>Amount (Euros)</i>	<i>Period</i>	<i>Role of PI or Team Member</i>	<i>Relation to current proposal</i>
NEON - ARS01_00769	MUR	438.000 (IBB-CNR amount)	April 2019 – December 2022	PI for IBB-CNR	The project aims at developing new CMOS- and Lab-on-fiber devices for detecting biomarkers for cancer and neurodegenerative diseases. IBB-CNR contributes by choosing and validating the bioreceptors needed for analyte's capture and by setting up the immobilization conditions on the sensor's surface.
NANOCAN, Progetti Oncologia	Regione Campania	180.000 euro (IBB-CNR amount as member of the CERICT consortium)	January 2018 – December 2022	PI for IBB-CNR	The project aims at developing Lab-on-fiber devices for detecting new biomarkers for cancer diseases. IBB-CNR contributes by choosing and validating the bioreceptors needed for analyte's capture and by setting up the immobilization conditions on the sensor's surface.
OPTIMA, FESR	Regione Campania	120.000 euro (IBB-CNR amount as member of the TOP-IN consortium)	January 2016 – November 2020.	PI for IBB-CNR	The project aimed at developing Lab-on-fiber devices for detecting Vitamin D in blood samples. IBB-CNR contributed by choosing and validating the bioreceptors and by immobilizing them on the sensor's surface.
PRIN: – Bando 2015 Prot. 2015783N45_03	MUR	80.000 euro (IBB-CNR amount)	February 2017 – February 2020	PI for IBB-CNR	The project aimed at developing Lab-on-fiber devices for detecting miRNA in blood samples as biomarkers for neurodegenerative diseases. IBB-CNR contributed by choosing and validating the bioreceptors and by immobilizing them on the sensor's surface.
Progetto SMART_HEALTH, PON04a2_C	MUR	235.000 euro (IBB-CNR amount)	April 2013 – October 2015	PI for IBB-CNR	<u>Aim of the Project</u> was the Development of an innovative real time label-free optical fiber biosensor for the fast determination of Tg in the needle washout of Lymphnodes fine-needle aspiration (LN-FNA)

Only projects in the field of new biosensors are reported.

Grant applications (Please indicate "No funding" when applicable):

<i>Project Title</i>	<i>Funding source</i>	<i>Amount (Euros)</i>	<i>Period</i>	<i>Role of PI or Team Member</i>	<i>Relation to current proposal</i>
FET OPEN	EU	80.000 euro	2020- Not funded	PI for IBB-CNR	Compact, fully autonomous, optical point-of-care system for Covid.
PRIN_2017MWLEK2	MUR	100.000 euro	2017- Not funded	PI for IBB-CNR	Multiplexed on-bead photonic devices for detecting Thyreoglobulin in blood samples
PRIN_2020239LYL	MUR	450.000 euro	2021- Awaiting review	PI	Multiplexed on-bead photonic devices for detecting prostate cancer biomarkers in blood samples.

Only projects in the field of new biosensors are reported.

Ten years track-record (max. 2 pages)

Dr. M. Ruvo has been Senior Scientist (Primo Ricercatore) at the Institute of Biostructure and Bioimaging of CNR (IBB-CNR) from January 2002 up to January 2020. Since January 2020 he is Research Director (Dirigente di Ricerca) at the same institute. Before joining the CNR, he has been Junior Scientist (1991-1993), Senior Scientist (1993-2001) and finally Associate Director (2001) in pharmaceutical companies. He holds a degree in Chemistry obtained at the University of Napoli Federico II and has a background in protein chemistry and biochemistry and in peptide chemistry. He has developed skills in the development of bioactive peptides, recombinant proteins, monoclonal antibodies and antibody fragments utilized as new potential biotherapeutics and diagnostics. He has also an expertise in developing new reagents and assays for detecting biomarkers and contributed to the development of new optical fiber-based label-free devices (Giaquinto, et al., ACS Photonics, 2019, 6, 12, 3271–3280; patent n° WO2017IB52533). He has contributed to develop up to the pre-clinical and clinical phases several bioactive peptides against therapeutic targets for oncology (DTP3, patents WO2012GB50947, WO2010GB01970, clinical trial Phase 1/2a, patents licensed to Kesios Ltd; iVR1, patents WO20053773, WO20053772, preclinical, patents licenced to Anbition srl; CBP, patent EP20090166967, pre-clinical), eye diseases (iVR1, patents W O20053773, WO 20053772, preclinical, patents licenced to Anbition srl) and cardiovascular diseases, (AIF 370-394, pre-clinical; Chelko, et al., (2021) Science Translational Medicine, 13 (581), art. no. eabf0891, patent n° US Patent App. 63/147,068, patent licensed to John Hopkins University). He has been one of the founding members of Almabs srl, (2009, terminated 2012), Kesios Therapeutics Ltd (2012) and Anbition srl (2018), the last two companies are still operative. He has contributed to develop monoclonal antibodies against protein targets like Cripto-1 (Focà, et al., (2019) Biochimie, 158, pp. 246-256), Nodal (patent n° WO2015US54515, licensed to Tai-Rx, Taiwan). In the last 10 years at the IBB-CNR, he has published 115 papers in international peer-reviewed journals (Scopus.com) with a 10-years H-Index of 17. He is co-inventor of 10+ different patents, three of which have been licenced to companies (see above). In the last 10 years he has been Principal Investigator for some 20 different funded projects – five of which in the field of new biosensor's development - and received financial support for around 4.7 million euros. In the same period he has been supervisor of at least 15 different graduated and post-doc fellows supported by projects in different areas; he has been supervisors of at least 20 master and PhD students. He has served and serves as consultant for several companies, including Kesios Therapeutics, (2014-2015), Bracco Imaging (2016-2017) and BIOVIIIx (2019-present).

Publications

Please, indicate the total n. publications, the H-Index, the averaged IF and the top publications of the last 10 years (no page limits max. 15 publications)

Source: www.scopus.com

H-Index: 29.

N. Publication: 162.

Average IF: 5.

- 1 - Giaquinto, M., Aliberti, A., Micco, A., Gambino, F., Ruvo, M., Ricciardi, A., Cusano, A.; Cavity-Enhanced Lab-on-Fiber Technology: Toward Advanced Biosensors and Nano-Opto-Mechanical Active Devices (2019) ACS Photonics, 6 (12), pp. 3271-3280.
- 2 - Scherino, L., Giaquinto, M., Micco, A., Aliberti, A., Bobeico, E., La Ferrara, V., Ruvo, M., Ricciardi, A., Cusano, A.; A time-efficient dip coating technique for the deposition of microgels onto the optical fiber tip (2018) Fibers, 6 (4), art. no. 72,
- 3 - Giaquinto, M., Ricciardi, A., Aliberti, A., Micco, A., Bobeico, E., Ruvo, M., Cusano, A.; Light-microgel interaction in resonant nanostructures (2018) Scientific Reports, 8 (1), art. no. 9331,
- 4 - Aliberti, A., Ricciardi, A., Giaquinto, M., Micco, A., Bobeico, E., La Ferrara, V., Ruvo, M., Cutolo, A., Cusano, A.; Microgel assisted Lab-on-Fiber Optrode (2017) Scientific Reports, 7 (1), art. no. 14459,
- 5 - Aliberti, A., Vaiano, P., Caporale, A., Consales, M., Ruvo, M., Cusano, A.; Fluorescent chemosensors for Hg²⁺ detection in aqueous environment (2017) Sensors and Actuators, B: Chemical, 247, pp. 727-735.
- 6 - Pilla, P., Sandomenico, A., Malachovská, V., Borriello, A., Giordano, M., Cutolo, A., Ruvo, M., Cusano, A.; A protein-based biointerfacing route toward label-free immunoassays with long period gratings in transition mode (2012) Biosensors and Bioelectronics, 31 (1), pp. 486-491.
- 7 - Giaquinto M, Micco A, Aliberti A, Bobeico E, La Ferrara V, Ruvo M, Ricciardi A, Cusano A. Optimization Strategies for Responsivity Control of Microgel Assisted Lab-On-Fiber Optrodes (2018). Sensors (Basel). Apr 6;18(4):1119.
- 8 - Quero G, Consales M, Severino R, Vaiano P, Boniello A, Sandomenico A, Ruvo M, Borriello A, Diodato L, Zuppolini S, Giordano M, Nettore IC, Mazzarella C, Colao A, Macchia PE, Santorelli F, Cutolo A, Cusano A. Long period fiber grating nano-optrode for cancer biomarker detection (2016). Biosens Bioelectron. Jun 15;80:590-600.
- 9 - Cusano, A.M., Aliberti, A., Cusano, A., Ruvo, M.; Detection of small DNA fragments by biolayer interferometry (2020) Analytical Biochemistry, 607, art. no. 113898.
- 10 - Di Meo V, Caporale A, Crescitelli A, Jannehc M, Palangec E, De Marcellis A, Portaccio M, Lepore M, Rendina I, Ruvo M, Esposito E. Metasurface based on cross-shaped plasmonic nanoantennas as chemical sensor for surface-enhanced infrared absorption spectroscopy. (2019) Sensors and Actuators B: Chemical Volume 286, Pages 600-607.
- 11 - Sivaccumar J, Sandomenico A, Vitagliano L, Ruvo M. Monoclonal Antibodies: A Prospective and Retrospective View (2021). Curr Med Chem.;28(3):435-471
- 12 - Sandomenico A, Focà A, Sanguigno L, Caporale A, Focà G, Pignalosa A, Corvino G, Caragnano A, Beltrami AP, Antoniali G, Tell G, Leonardi A, Ruvo M. Monoclonal antibodies against pools of mono- and polyacetylated peptides selectively recognize acetylated lysines within the context of the original antigen (2016). MAbs. Nov/Dec;8(8):1575-1589.
- 13 - Selis F, Sandomenico A, Cantile M, Sanna R, Calvanese L, Falcigno L, Dell'Omo P, Esperti A, De Falco S, Focà A, Caporale A, Iaccarino E, Truppo E, Scaramuzza S, Tonon G, Ruvo M. Generation and testing of engineered multimeric Fabs of trastuzumab (2020). Int J Biol Macromol. Dec 1;164:4516-4531.

14 - Sandomenico A, Leonardi A, Berisio R, Sanguigno L, Focà G, Focà A, Ruggiero A, Doti N, Muscariello L, Barone D, Farina C, Owsianka A, Vitagliano L, Patel AH, Ruvo M. Generation and Characterization of Monoclonal Antibodies against a Cyclic Variant of Hepatitis C Virus E2 Epitope 412-422 (2016). J Virol. Jan 27;90(7):3745-59.

15 - Tornatore, L., Sandomenico, A., Raimondo, D., ...Ruvo, M., Franzoso, G. Cancer-Selective Targeting of the NF- κ B Survival Pathway with GADD45 β /MKK7 Inhibitors (2014). Cancer Cell, 26(6), pp. 938.