

Rosanna Culurciello, PhD

Short Biographical Sketch

Dr. Rosanna Culurciello is a Postdoctoral Research Fellow in Biochemistry at the Department of Biology, University of Naples Federico II (Italy). She obtained her PhD in Biology (Cellular Biochemistry) in 2022, focusing on the structural and functional characterization of vertebrate ribonucleases and their role in cellular stress responses.

Her research spans protein biochemistry, molecular biology, microbiology, and biotechnology, with particular interest in RNA biology, ribonucleases, antimicrobial peptides and peptoids, host-defense peptides, oxidative stress, and the development of novel antimicrobial and immunomodulatory molecules. Her current research activities are carried out within the PRIN-PNRR CyPDRUGS project, investigating cyclic peptoids as innovative antimicrobial and immunomodulatory compounds.

Dr. Culurciello has also conducted research at the Instituto de Química Física Blas Cabrera (CSIC, Madrid, Spain), where she investigated angiogenin-mediated tRNA cleavage and G-quadruplex formation using biochemical and NMR approaches.

She has authored **17 peer-reviewed scientific publications**, several as first author, in international journals including *The FEBS Journal*, *Heliyon*, *International Journal of Molecular Sciences*, *Plants*, *Toxins*, and *Food Chemistry*. She has presented her work at more than **25 national and international scientific conferences**, delivering several invited and selected oral communications. Her research has been recognized with the **Rapid Oral Communication Prize** at IMAP 2024 (London) and the **Second Oral Presentation Prize** at the 1st International Meeting on RNA & RNases (Barcelona, 2025).

Her current scientific interests include:

- RNA biology and ribonucleases
- Cellular stress response and stress granules
- Antimicrobial peptides and peptoids
- Host-defense peptides
- Recombinant protein production and characterization
- Antimicrobial resistance
- Bioactive peptides for biomedical applications

Selected Publications

Publications: Author or co-author of **17 peer-reviewed scientific articles** published in leading international journals including *The FEBS Journal*, *JACS Au*, *International Journal of Biological Macromolecules*, *International Journal of Molecular Sciences*, *Heliyon*, *Plants*, *Pharmaceuticals*, *Food Chemistry*, *Toxins*, and *Marine Drugs*. Research focuses on RNA biology, ribonucleases, antimicrobial peptides and peptoids, cellular stress responses, and biotechnology.

1. Culurciello R. *et al.* **Role of human RNase 7 in neuronal and glial cell models: moving towards an unexpected new functional link.** *The FEBS Journal*. 2026.
2. Culurciello R. *et al.* **Cytotoxic Potential Evaluation of Innovative Pressurised Cyclic Solid-Liquid Extracts from *Withania somnifera*.** *Plants*. 2026.

3. Bosso A., Di Nardo I., **Curciello R.**, *et al.* **KNR50: a moonlighting bioactive peptide hidden in the C-terminus of bovine casein α S2 with antimicrobial, antibiofilm, antiviral and immunomodulatory activities.** *International Journal of Biological Macromolecules*. 2025.
4. Curciello R. *et al.* **Tailoring the stress response of human skin cells by substantially limiting the nuclear localization of angiogenin.** *Heliyon*. 2024.
5. Cafaro V., Bosso A., Di Nardo I., **Curciello R.**, *et al.* **The antimicrobial, antibiofilm and anti-inflammatory activities of P13#1, a cathelicidin-like achiral peptoid.** *Pharmaceuticals*. 2023.
6. Curciello R. *et al.* **Protective Effects of Recombinant Human Angiogenin in Keratinocytes: New Insights on Oxidative Stress Response Mediated by RNases.** *International Journal of Molecular Sciences*. 2022.
7. Curciello R. *et al.* **Cytotoxicity of an Innovative Pressurised Cyclic Solid-Liquid Extract from *Artemisia annua*.** *Toxins*. 2021.
8. Landi N., Ragucci S., **Curciello R.**, *et al.* **Ribotoxin-like proteins from *Boletus edulis*: structural properties, cytotoxicity and in vitro digestibility.** *Food Chemistry*. 2021.

A complete publication list includes 17 peer-reviewed papers.

Selected Congress Participation

Invited / Oral Presentations

- **2026** – 19th Naples Workshop on Bioactive Peptides: A Never-Ending Tale (Naples, Italy)
- **2025** – 1st International Meeting on RNA & RNases (Barcelona, Spain)
Human RNase 7 and neurons: moving towards an unexpected new functional link.
- **2024** – 11th International Meeting on Antimicrobial Peptides (London, UK)
KNR50: a new promising host defence peptide hidden in the C-terminus of bovine casein α S2.
- **2023** – 62nd SIB Congress (Florence, Italy)
Stress-related role of a new angiogenin NLS mutant in the stress response of human keratinocytes.
- **2023** – CIRPeB Scientific Meeting (Naples, Italy)
The antimicrobial, antibiofilm and anti-inflammatory activities of P13#1, a cathelicidin-like achiral peptoid.
- **2021** – 61st SIB Congress (Virtual)
New recombinant angiogenin variants to clarify the role of this special enzyme in stress granule recruitment.

Selected Poster Presentations

- FEBS Congress (Milan, 2024)
- IMAP 2025 (Dublin, Ireland)
- IMAP 2024 (London, UK)
- Convention of Investigators in Cystic Fibrosis (Verona, Italy, 2024)
- Maria Ciaramella Workshop (Naples, 2023)
- SIB Congresses (2019, 2021, 2023)
- FISV Congress (2022)

- Eurocarb XXI (Paris, 2023)
- BioProSys Joint Meeting (Naples, 2023)
- FEBS Virtual Congress (2021)
- WebPro – Proteins on the Web (2021)

Overall conference activity: more than **30** contributions (oral presentations and posters) at national and international scientific meetings.

Complete List of Peer-Reviewed Publications

1. **Culurciello R**, Power K, Esposito S, Di Nardo I, Landi S, De Vico G, Palatucci D, Pizzo E, Naviglio D, Zarrelli A. **Cytotoxic Potential Evaluation of Innovative Pressurised Cyclic Solid-Liquid Extracts from *Withania somnifera*.** *Plants*. 2026;15(7):1027.
2. **Culurciello R**, Cristiano M, Di Nardo I, Palumbo I, Piccolo E, Oliva R, Bosso A, Donizetti A, Notomista E, Pizzo E. **Role of human RNase 7 in neuronal and glial cell models: moving towards an unexpected new functional link.** *The FEBS Journal*. 2026.
3. Gaglione R, Schibeci M, Piccolo E, **Culurciello R**, Zannella C, Mensitieri F, Dal Piaz F, Cafaro V, De Filippis A, Pizzo E, Notomista E, Torres MDT, de la Fuente-Núñez C, Arciello A. **Discovery of Encrypted Peptides in a Human Matrix Metallopeptidase.** *JACS Au*. 2025;6(1):124–143.
4. Bosso A, Masino A, Di Nardo I, Zannella C, Gaglione R, Palumbo I, **Culurciello R**, De Filippis A, Torres MDT, de la Fuente-Núñez C, Galdiero M, Arciello A, Di Maro A, Pizzo E, Cafaro V, Notomista E. **Exploring the Antimicrobial and Antiviral Properties of Cryptic Peptides from Human Fibrinogen.** *International Journal of Molecular Sciences*. 2025;26(18):8914.
5. Nappo A, Salamone M, Masi M, Morelli M, Annunziata M, Sonnessa M, Cimmino A, Bosso A, **Culurciello R**, Di Nardo I, Pizzo E, Costantini M, Zupo V, Aliberti F, Guida M, Carraturo F. **Biotechnological Potential of a Novel Strain of *Fusarium proliferatum*, a Terrestrial Fungus Adapted to Marine Environment.** *Environmental Microbiology Reports*. 2025;17(4):e70143.
6. Bosso A, Di Nardo I, **Culurciello R**, Palumbo I, Gaglione R, Zannella C, Pinto G, Siciliano A, Carraturo F, Amoresano A, Galdiero M, Cafaro V, Arciello A, Pizzo E, Notomista E. **KNR50: a Moonlighting Bioactive Peptide Hidden in the C-Terminus of Bovine Casein α S2 with Powerful Antimicrobial, Antibiofilm, Antiviral and Immunomodulatory Activities.** *International Journal of Biological Macromolecules*. 2025;311(Pt 3):143718.
7. Mazzoli A, Spagnuolo MS, De Palma F, Petecca N, Di Porzio A, Barrella V, Troise AD, **Culurciello R**, De Pascale S, Scaloni A, Mauriello G, Iossa S, Cigliano L. ***Limosilactobacillus reuteri* DSM 17938 Relieves Inflammation, Endoplasmic Reticulum Stress and Autophagy in the Hippocampus of Western Diet-Fed Rats.** *BioFactors*. 2024;50(6):1236–1250.
8. **Culurciello R**, Di Nardo I, Bosso A, Tortora F, Troisi R, Sica F, Arciello A, Notomista E, Pizzo E. **Tailoring the Stress Response of Human Skin Cells by Substantially Limiting the Nuclear Localization of Angiogenin.** *Heliyon*. 2024;10:e24556.
9. Cafaro V, Bosso A, Di Nardo I, D'Amato A, Izzo I, De Riccardis F, Siepi M, **Culurciello R**, D'Urzo N, Chiarot E, Torre A, Pizzo E, Merola M, Notomista E. **The Antimicrobial, Antibiofilm and Anti-Inflammatory Activities of P13#1, a Cathelicidin-Like Achiral Peptoid.** *Pharmaceuticals*. 2023;16:1386.

10. Bosso A, Tortora F, **Culurciello R**, Di Nardo I, Pistorio V, Carraturo F, Colecchia A, Di Girolamo R, Cafaro V, Notomista E, Ingenito R, Pizzo E. **Simultaneous Irradiation with UV-A, -B and -C Lights Promotes Effective Decontamination of Planktonic and Sessile Bacteria: A Pilot Study.** *International Journal of Molecular Sciences*. 2023;24:12951.
11. **Culurciello R**, Bosso A, Troisi R, Barrella V, Di Nardo I, Borriello M, Gaglione R, Pistorio V, Aceto S, Cafaro V, Notomista E, Sica F, Arciello A, Pizzo E. **Protective Effects of Recombinant Human Angiogenin in Keratinocytes: New Insights on Oxidative Stress Response Mediated by RNases.** *International Journal of Molecular Sciences*. 2022;23:8781.
12. Bosso A, Gaglione R, Di Girolamo R, Veldhuizen EJA, García-Vello P, Fusco S, Cafaro V, Monticelli M, **Culurciello R**, Notomista E, Arciello A, Pizzo E. **Human Cryptic Host Defence Peptide GVF27 Exhibits Anti-Infective Properties against Biofilm-Forming Members of the *Burkholderia cepacia* Complex.** *Pharmaceuticals*. 2022;15:260.
13. **Culurciello R**, Bosso A, Di Fabio G, Zarrelli A, Arciello A, Carella F, Leonardi L, Pazzaglia L, De Vico G, Pizzo E. **Cytotoxicity of an Innovative Pressurised Cyclic Solid-Liquid (PCSL) Extract from *Artemisia annua*.** *Toxins*. 2021;13:886.
14. Landi N, Ragucci S, **Culurciello R**, Russo R, Valletta M, Pedone PV, Pizzo E, Di Maro A. **Ribotoxin-Like Proteins from *Boletus edulis*: Structural Properties, Cytotoxicity and *In Vitro* Digestibility.** *Food Chemistry*. 2021;359:129931.
15. Sica F, Russo Krauss I, Troisi R, Bosso A, **Culurciello R**, Carluccio C, Trapani M, Merlino A, Mazzarella L, Pizzo E. **The Structural Features of an Ancient Ribonuclease from *Salmo salar* Reveal an Intriguing Case of Auto-Inhibition.** *International Journal of Biological Macromolecules*. 2021;182:659–668.
16. Cimmino F, Catapano A, Trinchese G, Cavaliere G, **Culurciello R**, Fogliano C, Penna E, Lucci V, Crispino M, Avallone B, Pizzo E, Mollica MP. **Dietary Micronutrient Management to Treat Mitochondrial Dysfunction in Diet-Induced Obese Mice.** *International Journal of Molecular Sciences*. 2021;22:2862.
17. Saggese A, **Culurciello R**, Casillo A, Corsaro MM, Ricca E, Baccigalupi L. **A Marine Isolate of *Bacillus pumilus* Secretes a Pumilacidin Active against *Staphylococcus aureus*.** *Marine Drugs*. 2018;16:180.