

Francesco Angelucci, Ph.D.
Curriculum vitae et studiorum

Place of work:

Department of Life, Health and Environmental sciences
University of L'Aquila, Via Vetoio - Coppito, building "Renato Ricamo"
67100-L'Aquila, Italy

Present position:

- Full professor of Biochemistry (SSD BIOS-07/A – Biochemistry)
Department of Life, Health and Environmental sciences

Institutional appointments:

- Coordinator of the LAMS (Lazio-Abruzzo-Molise-Sardegna) section of the Italian Society of Biochemistry (from March 2024).
- Coordinator of the commission for the research activities of the Department of Life, Health and Environmental sciences, University of L'Aquila (from April 2021 to April 2027).
- Head of Research Quality Assurance, Third Mission, and Social Impact of the Department of Life, Health and Environmental sciences, University of L'Aquila (from April 2021 to April 2024).

Past Positions:

- Associate professor (SSD BIO/11 – Molecular Biology). Department of Life, Health and Environmental sciences, University of L'Aquila, Italy (from 1/11/2017 to 30/03/2021).
- Assistant professor (SSD BIO/11 – Molecular Biology). Department of Life, Health and Environmental sciences, University of L'Aquila, Italy (from 1/10/2011 to 30/10/2017).
- Assistant professor (tenure-track; SSD BIO/10 - Biochemistry). Department of Biochemical Sciences "A. Rossi Fanelli", Sapienza University of Rome, Italy (from 1/12/2009 to 30/9/2011).

Education:

- PhD in Biochemistry, Sapienza University of Rome. Thesis Title: "A Structural Approach to Schistosomiasis: Crystal Structure of Two Antigenic Proteins With Important Physiological Roles". Supervisor: Prof. Maurizio Brunori. 9/03/2005.
- Laurea in Chemistry, Sapienza University of Rome. Supervisors: Prof. Bernardo Masci; Dr. Claudio Lo Sterzo. 11/04/2001

Awards and honours

- Bioeconomy international prize for innovational research with a potential socio-economic impact in the field of Biomedical Research. Awarded by IRBM science park, National Research Council (CNR) and National Institute of Health (ISS). “Biblioteca del Senato della Repubblica”, 20/11/2012.
- Co-Principal investigator of 4 research projects granted by the National Institutes of Health (NIH, USA), funds awarded: 4500k\$.
- October 2009 “Fondazione Roma” awarded a grant for a tenure-track position as assistant professor at Sapienza University of Rome.

Research activity

I investigate the relationship between protein structure and function, with a particular focus on enzymes involved in thiol-mediated redox metabolism. This knowledge is applied both to the development of novel treatments for infectious diseases and to the engineering of protein structures for bionanotechnological applications. Protein structure is characterized using X-ray crystallography and cryo-EM, while functional analysis is performed through steady-state and pre-steady-state kinetics, as well as ligand binding studies.

Most relevant publications of the last 5 years

- 1) Rullo A, Flowers B, Chang K, Zhang A, Petukhova VZ, Harding L, Aboagye SY, Bocchetta M, Qiu W, Williams DL, **Angelucci F**, Petukhov PA, Kastrati I. (2026) Unravelling the anti-cancer mechanisms elicited by non-covalent thioredoxin reductase inhibitors for triple negative breast cancer therapy. *Redox Biol.* 90, 103980. IF 11.9.
- 2) Gabriele F, Bogard JA, Palerma M, Ardini M, Byrne ME, Chen XM, Petukhov PA, Ippoliti R, **Angelucci F***, Williams DL*. (2025) Targeting Apicomplexan Parasites: Structural and Functional Characterization of Cryptosporidium Thioredoxin Reductase as a Novel Drug Target. *Biochemistry.* 64, 2212-2225. IF 3.0. Editor's choice.
- 3) Flowers B, Rullo A, Zhang A, Chang K, Petukhova VZ, Aboagye SY, **Angelucci F**, Williams DL, Kregel S, Petukhov PA, Kastrati I*. (2025) Pleiotropic anti-cancer activities of novel non-covalent thioredoxin reductase inhibitors against triple negative breast cancer. *Free Radic Biol Med.* 227, 201-209. IF 8.2
- 4) Ardini M, Aboagye SY, Petukhova VZ, Kastrati I, Ippoliti R, Thatcher GRJ, Petukhov PA*, Williams DL*, **Angelucci F*** (2024) The “doorstop pocket” in thioredoxin reductases - an unexpected druggable regulator of the catalytic machinery. *J. Med. Chem.* 67, 15947-1596. IF 6.8
- 5) Petukhova VZ, Aboagye SY, Ardini M, Lullo RP, Fata F, Byrne ME, Gabriele F, Martin LM, Harding LNM, Gone V, Dangi B, Lantvit DD, Nikolic D, Ippoliti R, Effantin G, Ling WL, Johnson JJ, Thatcher GRJ, **Angelucci F***, Williams DL*, Petukhov PA*. (2023) Non-covalent inhibitors of thioredoxin glutathione reductase with schistosomicidal activity in vivo. *Nat Commun.* 14, 3737. IF: 15.7

- 6) Fata F, Gencheva R, Cheng Q, Lullo R, Ardini M, Silvestri I, Gabriele F, Ippoliti R, Bulman CA, Sakanari JA, Williams DL, Arnér ESJ, **Angelucci F*** (2022) Biochemical and structural characterizations of thioredoxin reductase selenoproteins of the parasitic filarial nematodes *Brugia malayi* and *Onchocerca volvulus*. *Redox Biol.* 2022, 51, 102278. IF 11.9
- 7) Fata F, Silvestri I, Ardini M, Ippoliti R, Di Leandro L, Demitri N, Polentarutti M, Di Matteo A, Lyu H, Thatcher GRJ, Petukhov PA, Williams DL, **Angelucci F***. (2021) Probing the Surface of a Parasite Drug Target Thioredoxin Glutathione Reductase Using Small Molecule Fragments. *ACS Infect Dis.* 7, 1932-1944. IF 3.8
- 8) Ardini M, Bellelli A, Williams DL, Di Leandro L, Giansanti F, Cimini A, Ippoliti R, **Angelucci F***. (2021) Taking Advantage of the Morpheein Behavior of Peroxiredoxin in Bionanotechnology. *Bioconjug Chem.* 32, 43-62. IF 3.9

Recent patents as co-inventor:

1) WO patent application WO2024026359A1: "Compositions and methods for treating schistosomiasis".

- INVENTORS

Aboagye Samuel, **Angelucci Francesco**, Ardini Matteo, Petukhova Valentina, Petukhov Pavel, Williams L. David.

Recent grants as Principal investigator

1) National Institute of Allergy and Infectious Diseases (NIAID; NIH; USA); R01AI177493 "Development of novel TGR inhibitors for the treatment of schistosomiasis". Co-PIs: Francesco Angelucci; David L. Williams (Rush University Medical Center, Chicago, US); Pavel A. Petukhov (University of Illinois at Chicago, US). From 07/01/2024. <https://grants.nih.gov/funding/activity-codes/R01> \$3900k

2) National Institute of Allergy and Infectious Diseases (NIAID; NIH; USA); R21AI146512-01A1 "Discovery of novel smHDAC8 inhibitors for the treatment of schistosomiasis". Co-PIs: Francesco Angelucci; David L. Williams (Rush University Medical Center, Chicago, US); Pavel A. Petukhov (University of Illinois at Chicago, US). From 04/12/2020 to 30/11/2023. <https://grants.nih.gov/grants/funding/r21.htm>. \$447k

3) National Institute of Allergy and Infectious Diseases (NIAID; NIH; USA); R33AI127635-03 - Development phase. "Identification of preclinical drug candidates for the treatment of schistosomiasis". Co-PIs: David L. Williams (Rush University Medical Center, Chicago, US); Pavel A. Petukhov (University of Illinois at Chicago, US); Gregory RJ Thacher (Arizona State University, Tucson, US). Subaward PI: Francesco Angelucci. From 01/12/2018 to 30/11/2022. https://grants.nih.gov/grants/funding/ac_search_results.htm?text_curr=r33. \$135k

4) National Institute of Allergy and Infectious Diseases (NIAID; NIH; USA); R21AI127635-01 - Exploratory phase "Identification of preclinical drug candidates for the treatment of schistosomiasis". Co-PIs: David L. Williams (Rush University Medical Center, Chicago, US); Pavel A. Petukhov (University of Illinois at Chicago, US); Gregory RJ Thacher (Arizona State University, Tucson, US). Subaward PI: Francesco Angelucci. From 1/12/2016 to 30/11/2018. <https://grants.nih.gov/grants/funding/r21.htm>. \$110k