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Research & Professional experience

- 2002-** *Professor of Microbiology.* Dept of Biology, Federico II Univ, Naples, Italy.
- 1998-02** *Associate Professor of Microbiology.* Federico II Univ, Naples, Italy.
- 1992-98** *Researcher.* Federico II University, Naples, Italy.
- 1993** *FEMS fellow.* Institute de Biologie Physico-Chimique. Paris, France.
- 1990-92** *Research Associate.* Dept. of Cell and Develp. Biology, Harvard University, Cambridge, USA. Supervisor: Prof. R. Losick
- 1988-90** *Post-doctoral fellow.* International Institute of Genetics and Biophysics, C.N.R., Naples, Italy. Supervisor: Prof. M. De Felice
- 1985-87** *Post-doctoral fellow.* Dept. Biochemistry Molec. and Cell Biology, Cornell University, Ithaca, NY, USA. Supervisor: Prof. J.M. Calvo
- 1979-84** *Student.* University of Napoli, Italy. Thesis work performed at the International Institute of Genetics and Biophysics, C.N.R., Naples, Italy.
 Advisor: Prof. M. De Felice

Other activities

- President of the Italian Society of General Microbiology and Microbial Biotechnology (SIMGBM) 2016-2018.
- Chair of the Department of Biology of the Federico II University of Naples, Italy (2016-2018 and 2019-2021).
- *Editor* of FEMS Microbiology Letters (since 2003).
- *Associate Editor* of Microbial Cell Factories (since 2016)
- Referee for scientific journals (*Molecular Microbiology, Journal of Bacteriology, Applied and Environmental Microbiology, Microbiology and Molecular Biology Reviews, Gene, Research in Microbiology, FEMS Microbiology Reviews, Journal of Applied Microbiology, Journal of Medical Microbiology, Applied Microbiology and Biotechnology, Microbial Cell Factories, PLoS ONE, Vaccine*) and granting agencies (*National Science Foundation, USA; Biotechnology and Biological Sciences Research Council, UK; Ministero Italiano dell'Università e Ricerca, Italy*).
- *Editor* of the scientific book "Bacterial Spore Formers: Probiotics and Emerging Applications" (E. Ricca, A.O. Henriques and S.M. Cutting Editors) Horizon Biosciences, UK (2004).

- Member of the Scientific Committee of the international conferences "European Spores Conference" Bratislava (Slovakia) 2004 and 2006; Naples (Italy) 2008; Cortona (Italy) 2010; Egham (UK) 2012, 2014, 2016, 2018 and Naples (Italy) 2020.

Main grants

- EU project (VII Framework) "Use of Microorganisms for Carotenoids Delivery: Next Generation of Probiotics for Cardiovascular Disease" 2013-15.
- EU project (VII Framework) "Innovative multifunctional sensors for in-situ monitoring of marine environment and related maritime activities" 2014-18.
- PON - Biopolis "Sviluppo e ottimizzazione di tecnologie di produzione di biochemicals a partire da materie prime rinnovabili" 2014-2016.
- ASI - "Dalla Ricerca alle Applicazioni Spaziali e Cliniche: verifica dell'efficacia di molecole citoprotettive, antiossidanti e radioprotettrici, per facilitarne trasferimento tecnologico" 2016-18.
- EU project (VII Framework) "Colorspore: New Sources of Natural, Gastric Stable, Food Additives, Colourants and Novel Functional Foods" 2008-11.
- EU project (IV Framework) "Recombinant spores of *Bacillus subtilis* as vaccine vehicles for mucosal immunisation" 1998-2000.
- EU project (V Framework) "Spore probiotics: an alternative to antibiotics" 2001-2004.
- Italian FIRB Project "Analisi comparata in vitro ed in vivo di vaccini ricombinanti innovativi basati su sistemi procariotici di display, proteine di fusione e peptidi bioattivi" 2001-2004.
- Italian COFIN 2002 "Biogenesi di una struttura cellulare complessa: la tunica sporale di *Bacillus subtilis*" 2002-03.
- Italian COFIN 2006 "La tunica sporale di *Bacillus subtilis*: un modello per lo studio di strutture cellulari complesse ed uno strumento biotecnologico per la presentazione di proteine eterologhe" 2006-07.

Publications (2014-19)

1. Pesce, G., Rusciano, G., Sirec, T., Isticato, R., Sasso, A., and **Ricca, E.** "Surface charge and hydrodynamic coefficient measurements of *Bacillus subtilis* spore by optical tweezers" *Colloids and Surfaces B: Biointerfaces* 116C:568-575 (2014).
2. Hinc, K., Stasiłojd, M., Piątek, I., Peszyoska-Sularz, G., Isticato, R., **Ricca, E.**, Obuchowski, M. and Iwanicki, A. "Mucosal adjuvant activity of IL-2 presenting spores of *Bacillus subtilis* in a murine model of *Helicobacter pylori* vaccination". *PLoS ONE* 9(4):e95187 (2014).
3. Valdez, A., Yepiz, G., **Ricca, E.**, Olmos-Soto, J. "First *Litopenaeus vannamei* WSSV 100% oral vaccination protection using CotC::Vp26 fusion protein displayed on *Bacillus subtilis* spores surface". *J. Appl. Microbiol.* 117:347-57 (2014).
4. Saggese, A., Scamardella, V., Sirec, T., Cangiano, G., Isticato, R., Pane, F., Amoresano, A., **Ricca, E.**, Baccigalupi, L. "Antagonistic role of CotG and CotH on spore germination and coat formation in *Bacillus subtilis*". *PLoS One.* 9(8):e104900 (2014).
5. **Ricca, E.**, Baccigalupi, L., Cangiano, G., De Felice, M., Isticato, R. "Mucosal vaccine delivery by non-recombinant spores of *Bacillus subtilis*" *Microb. Cell Fact.* 13(1):115. (2014).
6. Sirec, T., Cangiano, G., Baccigalupi, L., **Ricca, E.**, Isticato, R. "Human intestinal isolates of *Bacillus subtilis*: characterization of the spore surface and use as display systems". *FEMS Microbiol Lett.* 358:194-201 (2014)
7. Cutting, S.M., **Ricca, E.** "Bacterial spore-formers: friends and foes" *FEMS Microbiol Lett.* 358:107-109 (2014).
8. Isticato, R., **Ricca, E.** "Spore surface display". *Microbiol Spectrum* 2(4):TBS-0011-2012. doi:10.1128/microbiolspec.TBS-0011-2012. (2014).
9. Cangiano, G., Sirec, T., Panarella, C., Isticato, R., Baccigalupi, L., De Felice, M., **Ricca, E.** "The *sps* gene products affect germination, hydrophobicity and protein adsorption of *Bacillus subtilis* spores". *Appl. Environ. Microbiol.* 80: 7293-7302 (2014).
10. Rusciano, G., Zito, G., Isticato, R., Sirec, T., **Ricca, E.**, Bailo, E., Sasso, A. "Nanoscale chemical imaging of *Bacillus subtilis* spores by combining Tip-Enhanced Scattering and advanced statistical tools. *ACS Nano* 8(12):12300-9 (2014).
11. Ghaedmohammadi, S., Rigi, G., Zadmard R., **Ricca, E.**, Ahmadian, G. "Immobilization of

- bioactive Protein A from *Staphylococcus aureus* (SpA) on the surface of *Bacillus subtilis* spores". Mol Biotechnol. DOI 10.1007/s12033-015-9868-z (2015).
12. Bonavita, R., Isticato, R., Maurano, F., **Ricca, E.**, Rossi, M. "Mucosal immunity induced by gliadin-presenting spores of *Bacillus subtilis* in HLA-DQ8-transgenic mice". Immunol. Letters 165:84–89 (2015).
 13. Di Luccia, B., Crescenzo, R., Mazzoli, A., Cigliano, L., Venditti, P., Walser, J.C., Widmer, A., Baccigalupi, L., **Ricca, E.**, Iossa, S. "Rescue of fructose-induced metabolic syndrome by antibiotics or fecal transplantation in a rat model of obesity". PLoS One 10(8):e0134893. doi: 10.1371/journal.pone.0134893 (2015).
 14. Isticato R, Sirec T, Vecchione S, Crispino A, Saggese A, Baccigalupi L, Notomista E, Driks A, **Ricca E.** "The Direct Interaction between Two Morphogenetic Proteins Is Essential for Spore Coat Formation in *Bacillus subtilis*". PLoS One. 10(10):e0141040 (2015).
 15. Di Luccia B, Riccio A, Vanacore A, Baccigalupi L, Molinaro A, **Ricca E.** "Matrix Production, Pigment Synthesis, and Sporulation in a Marine Isolated Strain of *Bacillus pumilus*" Mar Drugs. 13(10):6472-88 (2015).
 16. Saggese, A., Isticato, R., Cangiano, G., **Ricca, E.**, Baccigalupi L. "CotG-like modular proteins are common among spore-forming *Bacilli*". J. Bacteriol. 198:1513-1520 (2016).
 17. Di Luccia, B., D'Apuzzo, E., Varriale, F., Baccigalupi, L., **Ricca, E.**, Pollice, A. "*Bacillus megaterium* SF185 induces stress pathways and affects the cell cycle distribution of human intestinal epithelial cells". Benef Microbes. 7(4):609-20. doi: 10.3920/BM2016.0020 (2016).
 18. Donadio, G., Lanzilli, M., Sirec, T., **Ricca, E.**, Isticato, R. "Localization of a red fluorescence protein adsorbed on wild type and mutant spores of *Bacillus subtilis*". Microb. Cell Fact. 15(1):153. doi: 10.1186/s12934-016-0551-2. (2016)
 19. Donadio, G., Di Martino, R., Oliva, R., Petraccone, L., Del Vecchio, P., Di Luccia, B., **Ricca, E.**, Isticato, R., Di Donato, A., Notomista, E. "A new peptide-based fluorescent probe selective for zinc (II) and copper (II)". J. Mater. Chem. B 4:6979-6988 (2016).
 20. Lanzilli, M., Donadio, G., Addevico, R., Saggese, A., Cangiano, G., Baccigalupi, L., Christie, G., **Ricca, E.**, Isticato, R. "The exosporium of *Bacillus megaterium* QM B1551 is permeable to the Red Fluorescence Protein of the coral *Discosoma sp.*" Front. Microbiology 7:1572 (2016).
 21. Crescenzo, R., Mazzoli, A., Cancelliere, R., Bucci, A., Naclerio, G., Baccigalupi, L., Cutting, S.M., **Ricca, E.**, Iossa, S. "Beneficial effects of carotenoid-producing cells of *Bacillus indicus* HU16 in a rat model of diet-induced metabolic syndrome". Beneficial Microbes 8:823-831 (2017).
 22. Mattossovich, R., Iacono, R., Cangiano, G., Cobucci-Ponzano, B., Isticato, R., Moracci, **Ricca, E.** "Conversion of xylan by recyclable spores of *Bacillus subtilis* displaying thermophilic enzymes". Microb. Cell Fact. 16:218 (2017).
 23. Di Luccia, B., Mazzoli, A., Cancelliere, R., Crescenzo, R., Ferrandino, I., Monaco, A., Bucci, A., Naclerio, G., Iossa, S., **Ricca, E.**, Baccigalupi, L. "*Lactobacillus gasseri* SF1183 Protects the Intestinal Epithelium And Prevents Colitis Symptoms *in vivo*". J. Functional Foods 42:195-202 (2018).
 24. Saggese, A., Culurciello, R., Casillo, A., Corsaro, M.M., **Ricca, E.**, Baccigalupi, L. "A marine isolate of *Bacillus pumilus* secretes a pumilacidin active against *Staphylococcus aureus*". Mar Drugs 16, 180 (2018).
 25. Lanzilli, M., Donadio, G., Fusco, F.A., Sarcinelli, C., Limauro, D., **Ricca, E.**, Isticato, R. "Display of the peroxiredoxin Bcp1 of *Sulfolobus solfataricus* on probiotic spores of *Bacillus megaterium*". New Biotechnologist 46: 38-44 (2018).
 26. Siepi, M.L., Oliva, R., Petraccone, L., Del Vecchio, P., **Ricca, E.**, Isticato, R., Lanzilli, M., Maglio, O., Lombardi, A., Leone, L., Notomista, E., Donadio, G. "Fluorescent peptide dH3w: a sensor for environmental monitoring of mercury (II)". PLoS ONE 13(10): e0204164 (2018).
 27. Cennamo, N., Zeni, L., **Ricca, E.**, Isticato, R., Marzullo, V.M., Capo, A., D'Auria, S., Varriale, A. "Detection of naphthalene in sea-water by a label-free plasmonic optical fiber biosensor". Talanta 194:289-297 (2019).
 28. Isticato, R., **Ricca, E.**, Baccigalupi, L. "Spore Adsorption as a Nonrecombinant Display System for Enzymes and Antigens". J Vis Exp. 2019 Mar 19;(145). doi: 10.3791/59102.