

**PERSONAL INFORMATION**  
**ORCID ID**

Federica Briani  
<https://orcid.org/0000-0002-5876-4463>

**POSITION**

Associate Professor of Microbiology

**WORK EXPERIENCE**

- 2002-2018 Assistant professor at UNIMI  
1999-2002 Post-Doctoral fellowship (Assegno di Ricerca di tipo A) of the University of Milan  
1999 CNR short-term fellow for stay at the Institut de Biologie Physico-Chimique, Paris  
1997-1999 Post-Doctoral fellowship of the University of Milan  
1996-1997 Post-doctoral Fellow, Telethon Institute of Genetics and Medicine, Milan

**EDUCATION AND TRAINING**

- 1996 PhD in Genetics, UNIMI. Thesis awarded by the SIMGBM as the best Microbiology thesis (year 1996)  
1992 Degree in Biology magna cum laude"

**PERSONAL SKILLS**

Mother tongue Italian

Other languages English; French

**ADDITIONAL INFORMATION****Publications**

1. Ghisotti, D., Briani, F., Forti, F., Piazza, F., Polo, S., Sabbattini, P., Sturniolo, T., Terzano, S., Zangrossi, S., Zappone, M., Sironi, G., and Dehò, G. (1995) Multiple regulatory mechanisms controlling phage-plasmid P4 propagation. *FEMS Microbiol. Rev.* 17: 127-134; IF: 14.37
2. Briani, F., Zangrossi, S., Ghisotti, D., and Dehò, G. (1996) A Rho-dependent transcription termination site regulated by bacteriophage P4 RNA immunity factor. *Virology* 223: 57-67. IF: 3.068
3. Piazza, F., Zappone, M., Sana, M., Briani, F., and Dehò, G. (1996) Polynucleotide phosphorylase of *Escherichia coli* is required for the establishment of bacteriophage P4 immunity. *J. Bacteriol.* 178: 5513-5521. IF: 2.936
4. Sabbattini, P., Six, E., Zangrossi, S., Briani, F., Ghisotti, D., and Dehò, G. (1996) Immunity specificity determinants in the P4-like retronphage  $\Phi$ R73. *Virology* 216: 389-396. IF: 3.068
5. Briani, F., Ghisotti, D., and Dehò, G. (2000) Antisense RNA-dependent transcription termination sites that modulate lysogenic development of satellite phage P4. *Mol. Microbiol.* 36:1124-1134. IF: 4.347
6. Zangrossi, S., Briani, F., Ghisotti, D., Regonesi, M.E., Tortora, P., and Dehò, G. (2000) Transcriptional and post-transcriptional control of polynucleotide phosphorylase during cold acclimation in *Escherichia coli*. *Mol. Microbiol.* 36: 1470-1480. IF: 4.347

7. Briani, F., Dehò, G., Forti, F., and Ghisotti, D. (2001) The plasmid status of satellite bacteriophage P4. *Plasmid* 45:1-17. IF: 1.569
8. Forti, F., Dragoni, I., Briani, F., Dehò, G., and Ghisotti, D. (2002) Characterization of the small antisense CI RNA that regulates bacteriophage P4 immunity. *J. Mol. Biol.* 315: 541-549. IF: 3.621
9. Briani, F., Del Vecchio, E., Migliorini, D., Hajnsdorf, E., Régnier, P., Ghisotti, D., and Dehò, G. (2002) RNase E and polyadenylpolymerase I are involved in maturation of CI RNA, the P4 phage immunity factor. *J. Mol. Biol.* 318: 321-331. IF: 3.621
10. Le Derout, J., Folichon, M., Briani, F., Dehò, G., Régnier, P., and Hajnsdorf, E. (2003) Hfq affects the length and the frequency of short oligo(A) tails at the 3' end of Escherichia coli rpsO mRNAs. *Nucl. Acids Res.* 31: 4017-4023. IF: 8.647
11. Polissi, A., De Laurentis, W., Zangrossi, S., Briani, F., Longhi, V., Pesole, G., and Dehò, G. (2003) Changes in the transcriptome of Escherichia coli during adaptation to low temperature. *Res. Microbiol.* 154: 573-580. IF: 2.772
12. Regonesi, M.E.1, & Briani, F. 1, Ghetta, A., Zangrossi, S., Ghisotti, D., Tortora, P., and Dehò, G. (2004) A mutation in polynucleotide phosphorylase from Escherichia coli impairing RNA binding and degradosome stability. *Nucl. Acids Res.* 32: 1006-1017. IF: 8.647  
1Equal contributors
13. Regonesi, M.E., Del Favero, M., Basilico, F., Briani, F., Benazzi, L., Tortora, P., Mauri, P., and Dehò, G. (2006) Analysis of the Escherichia coli RNA degradosome composition by a proteomic approach. *Biochimie* 88:151-161. IF: 3.102
14. Cattaneo, F., Pasini, M. E., Matsumoto, M., Intra, J., Briani, F., Hoshi, M. and Perotti, M. E. (2006) Identification and expression analysis of Drosophila melanogaster genes encoding beta-hexosaminidases of the sperm plasma membrane. *Glycobiology* 16:786-800. IF: 3.528
15. \* Briani, F., Del Favero, M., Capizzuto, R., Consonni, C., Zangrossi, S., Greco, C., De Gioia, L., Tortora, P., and Dehò, G. (2007) Genetic Analysis of Polynucleotide Phosphorylase Structure and Functions. *Biochimie* 89:145-157. IF: 3.102
16. Marchi, P., Longhi, ., Zangrossi, S., Gaetani, E., Briani, F., and Dehò, G. (2007) Autogenous regulation of Escherichia coli polynucleotide phosphorylase during cold acclimation by transcription termination and antitermination. *Mol. Gen. Genomics* 278:75-84. IF: 2.858
17. Del Favero, M., Mazzantni, E., Briani, F., Zangrossi, S., Tortora, P., and Dehò, G. (2008) Regulation of Escherichia coli polynucleotide phosphorylase by ATP. *J. Biol. Chem.* 283: 27355-27359. IF: 4.403
18. \* Briani, F., Curti, S., Rossi, F., Carzaniga, T., Mauri P., and Dehò, G. (2008) Polynucleotide phosphorylase hinders mRNA degradation upon translational stress induced by ribosomal protein S1 in Escherichia coli. *RNA* 14:2417-29. IF: 4.302
19. Carzaniga, T., Briani, F., Zangrossi, S., Merlino, G., Marchi, P., and Dehò, G. (2009) Autogenous regulation of Escherichia coli polynucleotide phosphorylase expression revisited. *J. Bact.* 191: 1738-48. IF: 2.936
20. Pasini M.E., Intra J., Gomulski L.M., Calvenzani V., Petroni K., Briani F., and Perotti M.E. (2011) Identification and expression profiling of Ceratitis capitata genes coding for  $\beta$ -hexosaminidases. *Gene* 473: 44-56. IF: 2.258
21. \* Delvillani, F., Papiani, G., Dehò, G., and Briani, F. (2011). S1 ribosomal protein and the interplay between translation and mRNA decay. *Nucl. Acids Res.* 39(17):7702-15. IF: 8.647
22. Cardenas P.P., Carzaniga T., Zangrossi S., Briani F., Garcia-Tirado E., Dehò G., Alonso J.C. (2011) Polynucleotide phosphorylase exonuclease and polymerase activities on single-stranded DNA ends are modulated by RecN, SsbA and RecA proteins. *Nucl. Acids Res.* 39:9250–926123. IF: 8.647

23. \* Ferrara, S., Brugnoli, M., De Bonis, A., Righetti, F., Delvillani, F., Dehò, G., Horner, D., Briani, F., and Bertoni, G. (2012) Comparative Profiling of *Pseudomonas aeruginosa* Strains Reveals Differential Expression of Novel Unique and Conserved Small RNAs. *PlosOne* 7(5):e36553. IF: 3.535
24. \* T. Carzaniga, D. Antoniani, G. Dehò, F. Briani and P. Landini (2012) The RNA processing enzyme polynucleotide phosphorylase negatively controls biofilm formation by repressing poly-N-acetylglucosamine (PNAG) production in *Escherichia coli*. *BMC Microbiology*. 12, article 270. IF: 3.177
25. T. Carzaniga, E. Mazzantini, M. Nardini, ME. Regonesi, C. Greco, F. Briani, L. De Gioia, Dehò G, Tortora P. (2014) A conserved loop in polynucleotide phosphorylase (PNPase) essential for both RNA and ADP/phosphate binding. *Biochimie*. 97:49-59. IF: 3.102
26. \* Delvillani, F., Sciandrone, B., Peano, C., Petiti, L., Berens, C., Georgi, C., Ferrara, S., Bertoni, G., Pasini, ME, Dehò, G., Briani, F. (2014) Tet-Trap, a genetic approach to the identification of bacterial RNA thermometers: application to *Pseudomonas aeruginosa*. *RNA*. 20: 1963-1976 IF: 4.302
27. \* Raneri, M., Sciandrone, B., Briani, F. (2015) A Whole-Cell Assay for Specific Inhibitors of Translation Initiation in Bacteria. *J. Biomol.Screening*. 20(5):627-33 IF: 2.175
28. \* T. Carzaniga, G. Dehò, F. Briani (2015) RNase III-independent autogenous regulation of *Escherichia coli* polynucleotide phosphorylase via translational repression. *J. Bact.* 197(11):1931-8. IF: 2.936
29. \* F. Briani, T. Carzaniga, G. Dehò (2016) Regulation and functions of bacterial PNPase. *WIREs RNA* DOI: 10.1002/wrna.1328 IF: 5.291
30. Carzaniga, T., Sbarufatti, G., Briani, F., Dehò, G. (2017) Polynucleotide phosphorylase is implicated in homologous recombination and DNA repair in *Escherichia coli*. *BMC Microbiology* 17 (1), 81
31. F. Forti, D.R. Roach, M. Cafora, M.E. Pasini, D. S. Horner, E.V. Fiscarelli, M. Rossitto, L. Cariani, F. Briani, L. Debarbieux, D. Ghisotti. (2018) Design of a broad-range bacteriophage cocktail that reduces *Pseudomonas aeruginosa* biofilms and treats acute infections in two animal models. *Antimicrobial Agents and Chemotherapy*. 62, e02573-17
32. M. Raneri, E. Pinatel, C. Peano, G. Rampioni, L. Leoni, I. Bianconi, O. Jousson, C. Dalmasio, P. Ferrante, F. Briani. (2018) *Pseudomonas aeruginosa* mutants defective in glucose uptake have pleiotropic phenotype and altered virulence in non-mammal infection models. *Sci. Rep.* 8, 16912

#### Book chapter

Federica Briani (2017). Cell-Based Fluorescent Screen to Identify Inhibitors of Bacterial Translation Initiation. Peter Sass (Ed.) *Antibiotics*. Series: *Methods in Molecular Biology* 1520: 237-245, Springer New York. Series ISSN: 1064-3745; ISBN: 978-1-4939-6634-9, doi: 10.1007/978-1-4939-6634-9\_14

Vincitrice dell'European Discovery Fast Track Challenge di GlaxoSmithKline 2014

#### Awards

- Teaching
- General Microbiology (Microbiologia generale; 9 CFUs), Bachelor Degree in Scienze biologiche, Università degli Studi di Milano (since 2015-2016)
- Genetics of Microorganisms and Molecular Microbiology, Master Degree in Molecular Biology of the Cell
- Cellular and Molecular Microbiology (the course is in English; 6 CFUs), Master Degree in Molecular Biotechnology and Bioinformatics, Università degli Studi di Milano (2008-2017)
- Bacterial genetics (Genetica dei Microrganismi; 1CFU), Post-Graduation School in Microbiology and Virology (Scuola di specializzazione in Microbiologia e Virologia) Università degli Studi di Milano (since 2009-2010)

#### Past teaching activity

Introduzione alla Biologia della Cellula, Bachelor Degree in Scienze Biologiche (2 CFUs)

- Genetica dei Microrganismi, Degree in Scienze Biologiche (ciclo unico), Università degli Studi dell'Insubria di Varese

#### Institutional Assignments

Member of the Commissione Paritetica Dipartimentale (2012-2018)

Member of the Giunta of the Department (2016-2018)

Member of Senato Accademico (since 2018)

#### Peer-reviewing activity

Ad hoc reviewer for Molecular Microbiology, Nucleic Acids Research, PlosOne, Critical Reviews in Microbiology, Frontiers in Cellular and Infection Microbiology, Biochimie, Journal of Biomolecular Screening, Microbial Cell Factories, Antibiotics, BMC Microbiology.

#### Research Support

##### Coordination of funded research project

FONDAZIONE FIBROSI CISTICA (FFC) 2013. EXPLORING PYRAZINAMIDE DERIVATIVES AS NOVEL PSEUDOMONAS AERUGINOSA INHIBITORS: UNEXPLOITED ANTIBACTERIAL MOLECULES FOR A NEW ANTIBIOTICS TARGET. Principal Investigator: Dr. Federica Briani. Grant # FFC#8/2013.

FONDAZIONE BANCA DEL MONTE DI LOMBARDIA 2015. APPLICAZIONE DI TECNOLOGIE DI RILEVAZIONE MULTIMODALE A CAMPIONI IN MICROPIASTRA NELLE BIOSCIENZE. Principal Investigator: Dr. Federica Briani..

FIRST2003: Identificazione di una proteina che lega l'mRNA del gene pnp Principal Investigator: Dr. Federica Briani.

FIRST2004: Identificazione di proteine coinvolte nella regolazione post-trascrizionale del gene pnp di Escherichia coli. Principal Investigator: Dr. Federica Briani.

FIRST2005: Ruolo della proteina ribosomale S1 nella regolazione del gene pnp. Principal Investigator: Dr. Federica Briani.

FIRST2006: Identificazione dei siti di legame per polinucleotide fosforilasi e proteina ribosomale S1 nella regione 5'- non tradotta dell'mRNA pnp di Escherichia coli. Principal Investigator: Dr. Federica Briani.

FIRST2007: Analisi dell'interazione tra proteina ribosomale S1 e polinucleotide fosforilasi di Escherichia coli. Principal Investigator: Dr. Federica Briani.

PUR2008: Ruolo di polinucleotide fosforilasi e proteina ribosomale S1 nel controllo della stabilità dell'mRNA in Escherichia coli. Principal Investigator: Dr. Federica Briani.

Linea 2 2015: Exploring the role of the glucose uptake pathway in the virulence of Pseudomonas aeruginosa (1st year). Principal Investigator: Dr. Federica Briani.

Linea 2 2016: Exploring the role of the glucose uptake pathway in the virulence of Pseudomonas aeruginosa (2nd year). Principal Investigator: Dr. Federica Briani.

Participation in funded projects as research unit member (only projects selected through a competitive call and peer reviewing)

FIRB2001. RISPOSTA GLOBALE A STRESS AMBIENTALI NEI BATTERI. Principal Investigator: Prof. Giovanni Dehò. Grant # RBAU01KHM2.

PRIN 2002. ANALISI GENETICA DI GENI ESSENZIALI CON FUNZIONE IGNOTA IN ESCHERICHIA COLI. Principal Investigator: Prof. Giovanni Dehò. Grant # 2002057223\_001.

PRIN 2003. CONTROLLO POST-TRASCRIZIONALE DELLA POLINUCLEOTIDE FOSFORILASI NELL'ADATTAMENTO AL FREDDO IN ESCHERICHIA COLI. Principal Investigator: Prof. Giovanni Dehò. Grant # 2003050717\_001.

PRIN 2005. REGOLAZIONE POST-TRASCRIZIONALE DELL'ESPRESSIONE GENICA IN ESCHERICHIA COLI: INTERAZIONI TRA DEGRADAZIONE DELL'RNA E CONTROLLO TRADUZIONALE NELL'ADATTAMENTO AL FREDDO. Principal Investigator: Prof. Giovanni Dehò. Grant # 2003050717\_001.

PRIN 2007. INTERAZIONI TRA POLINUCLEOTIDE FOSFORILASI E PROTEINA RIBOSOMALE S1 NEL CONTROLLO POST-TRASCRIZIONALE DELL'ESPRESSIONE GENICA IN ESCHERICHIA COLI A LIVELLO DI STABILITA' E TRADUCIBILITA' DELL'RNA MESSAGGERO. Principal Investigator: Prof. Giovanni Dehò. Grant # 20074CNBJ2\_001.

CARIPO2005. GENOMICA FUNZIONALE PER L'IDENTIFICAZIONE DI NUOVI MARCATORI MOLECOLARI DI VIRULENZA "ATH" PER LA DIAGNOSI E LA PREVENZIONE DELLE INFEZIONI BATTERICHE. Principal Investigator: Prof. Giovanni Dehò. Grant # 2005.1076/10.4878.

Fondazione Ricerca Fibrosi Cistica (FFC) 2008. ESSENTIAL PROTEINS OF PSEUDOMONAS AERUGINOSA

OUTER MEMBRANE BIOGENESIS AS NOVEL TARGETS FOR NEW ANTI-MICROBIAL DRUGS DESIGN AND SYNTHESIS. Principal Investigator: Prof. Alessandra Polissi. Grant # FFC#10/2008.  
FFC2010. PSEUDOMONAS AERUGINOSA LIPOPOLYSACCHARIDE CELL SURFACE TRANSPORT IS A TARGET PROCESS FOR DEVELOPING NEW ANTIMICROBIALS. Principal Investigator: Prof. Alessandra Polissi. Grant # FFC#13/2010  
CARIPLO2010. OUTER MEMBRANE BIOGENESIS IN GRAM NEGATIVE BACTERIA AS A TARGET FOR INNOVATIVE ANTIBACTERIAL DRUGS. Principal Investigator: Dr. Paola Sperandeo Grant # 2010-0653.  
REGIONE LOMBARDIA-MIUR 2011. NUOVI ANTIBIOTICI MEDIANTE RATIONAL DESIGN. Principal Investigator: Dr. Stefano Donadio. Grant # 30190679  
FFC2016. PHAGE THERAPY AGAINST PSEUDOMONAS AERUGINOSA INFECTIONS IN CYSTIC FIBROSIS PATIENTS. Principal Investigator: Prof. Daniela Ghisotti. Grant FFC#16/2016

**Personal information**

I authorize the handling of personal information in this curriculum, according to D.Lgs n. 196/03 and following modifications and Regulations EU 679/2016 (General Regulations concerning Data Protection or GRDP) and art. 7 of University Regulations concerning protection of personal information.

I authorize, according to D.lgs 14/03/2013 n. 33 concerning transparency, in case of conferment of the position and of the fellowship, the publication of this curriculum in the web site of Università degli Studi di Milano in the section "Amministrazione trasparente", "Consulenti e collaboratori".

Date 22/11/2018

Signature

