

Casari Erika

Date and place of birth: 20/09/1994; Tradate (VA), Italy

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PROFESSIONAL EXPERIENCE

03/2022 - Present

Postdoctoral Researcher (Type A2) at Department of Biotechnology and Biosciences, University of Milano-Bicocca, Italy. Laboratory of Molecular Genetics, Scientific Responsible: Professor Longhese Maria Pia, Ph.D.

The project concerns the identification of novel regulators of Rad9 functions at DNA double-strand breaks.

11/2021 - 02/2022

Postdoctoral Researcher (Type B) at Department of Biotechnology and Biosciences, University of Milano-Bicocca, Italy. Laboratory of Molecular Genetics, Scientific Responsible: Professor Bonetti Diego, Ph.D.

The project concerns the study of the interconnections between RNA metabolism and the DNA damage response in yeast *Saccharomyces cerevisiae*.

11/2018 - 10/2021

PhD student in Converging Technologies for Biomolecular Systems, Department of Biotechnology and Biosciences, University of Milano-Bicocca, Italy. Laboratory of Molecular Genetics, Scientific Responsible: Professor Longhese Maria Pia, Ph.D. The project concerns the research of synthetic cytotoxicity in yeast *Saccharomyces cerevisiae* to study the DNA repair mechanisms in cancer. Tutor of the project: Professor Longhese Maria Pia, Ph.D, Supervisor of the project: Professor Clerici Michela, Ph.D. Thesis title: Resection of DNA double-strand breaks: novel regulatory mechanisms by checkpoint proteins and chromatin remodelers.

11/2017 - 7/2018

Master's degree internship at laboratory of Molecular Genetics, Department of Biotechnology and Biosciences, University of Milano-Bicocca. Scientific Responsible: Professor Longhese Maria Pia, Ph.D. The internship concerns the study of the molecular mechanisms of DNA damage repair by homologous recombination using the yeast *Saccharomyces cerevisiae* as a model system. Thesis title: Role of MRX complex in the regulation of Exo1 nuclease activity.

3/2016 - 5/2016

Bachelor's degree internship at laboratory of Cellular Biochemistry, Department of Biotechnology and Biosciences, University of Milano-Bicocca. Scientific Responsible: Doctor Elena Sacco, Ph.D.

The internship involved the study of the energetic metabolism of cancer cells sensitive or resistant to chemotherapy, analyzing the molecular basis of metabolic rearrangements induced in mammalian cancer cells by the acquisition of resistance to the fluorouracil chemotherapy.

Thesis title: Molecular mechanisms underlying chemoresistance in colorectal cancer cells induced by NNK, a tobacco-specific nitrosamine, and identification of novel therapeutic strategies.

EDUCATION AND ACADEMIC DEGREES

11/2018 – 01/2022

PhD student in Converging Technologies for Biomolecular Systems (TeCSBi)

- XXXIV cycle –

Department of Biotechnology and Biosciences, University of Milano-Bicocca, Italy

Final mark: Excellent *cum laude*

10/2016 - 7/2018

Master's Degree in Industrial Biotechnology (LM-8)

Department of Biotechnology and Biosciences, University of Milano-Bicocca, Italy

Final mark: 110/110 *cum laude*

POST-LAUREA CERTIFICATIONS and ADVANCED COURSES

- Career Development for Young Scientists Course, HFP Consulting, University of Milano-Bicocca, Italy
- Certification for program FIT of '24 CFU for teaching', University of Milano-Bicocca, Italy
- Time- and Self- Management Course, HFP Consulting, University of Milano-Bicocca, Italy
- Genomica: Tecnologie Avanzate, FISV, 25-26 gennaio 2024
- Advanced Technologies in Single Cell Omics, FISV, 4-5 febbraio 2025

PROFESSIONAL SKILLS AND EXPERTISE

Cellular culture preparation of yeasts, bacteria, mammals, even in sterility environment

Growth media and buffers preparation

Frequently use of chemicals

Yeast strains construction (e.g. *S. cerevisiae*) and bacteria (e.g. *E. coli*) (gene disruptions with dominant and auxotrophic markers, mutagenesis)

Genetic screen with HDA rotor using *S. cerevisiae* yeast

Classical genetic screen using *S. cerevisiae* yeast

Genetic-interaction analyses in the *S. cerevisiae* yeast

DNA/RNA/protein extraction
Yeast and bacteria transformation
Frequently use of restriction enzymes
Classic PCR
Real Time PCR
Genetic tetrads dissection
Rational design mutagenesis
DNA cloning and plasmid DNA extraction
Genome sequencing
Genome manipulation
Optical microscope usage
Cell count (Coulter Counter, spectrophotometer, Burker chamber)
Fluorescence instrument use (e.g. *Nanodrop*)
Chromatin Immunoprecipitation (ChIP)
Co-immunoprecipitation (CoIP)
SDS-page e western blot
Southern blot
Northern blot
EMSA (Electrophoretic Mobility Shift Assay)
Fluorescence microscopy
FACS Analysis
Frequently use of radioactive isotopes
Frequently use of genotoxic agents (e.g. camptothecin, phleo/bleomycin, hydroxyurea, 5-fluorouracil)
Enzyme Assays
Biotechnological-Biomolecular analyses
Micromanipulator usage for tetrad dissection and zygote isolation
Bacteriophage manipulation
Statistical analysis and data processing
Excellent usage of software as Excel, Adobe Illustrator, PowerPoint, Adobe Photoshop, Word, Origin, Prism

ORAL PRESENTATIONS

- **Casari E.**, Corallo F., Milani L., Longhese M.P. Exploring the functions of the CST complex in the DNA damage response. 32nd International Conference on Yeast Genetics and Molecular Biology (ICYGMB - Yeast 2025), Università Sorbona, Parigi, Francia, 21-24 luglio 2025.
- 18-20/09/2024 Abstract and Oral presentation, **Casari E.**, Longhese MP 'Phosphatases in the regulation of DNA damage response: the role of PP2A', XVII FISV Congress, Padua, 2024
- 20-25/08/2023 Abstract and Oral presentation, **Casari E.**, Longhese MP 'Role of the PP2A phosphatase regulatory subunits in the DNA damage response', Yeast Meeting - ICYGMB2023 (Florence)

- 22/11/19 Abstract and Oral presentation **Casari E.**, 'Synthetic cytotoxicity to target DNA repair in cancer', Btbs day 2019, Department of Biotechnology and Biosciences, University of Milano-Bicocca
- 21/11/18 Abstract and Oral presentation **Casari E.**, 'Synthetic cytotoxicity to target DNA repair in cancer', Kick Off Meeting 2018, Department of Biotechnology and Biosciences, University of Milano-Bicocca

CONTRIBUTIONS TO MEETING

- 18/02/2025 Corallo F., **Casari E.**, and Longhese MP. 'Exploring the function of the CST complex at DNA double-strand breaks' Abstract and Poster presentation, Btbs day 2025, Department of Biotechnology and Biosciences, University of Milano-Bicocca
- 08/02/2024 **Casari E.**, Pizzul P., Rinaldi C., Gnugnoli M., Clerici M., Longhese MP. 'The PP2A phosphatase counteracts the function of the 9-1-1 axis in checkpoint activation', Abstract and Poster presentation, Btbs day 2024, Department of Biotechnology and Biosciences, University of Milano-Bicocca
- 08/02/2024 Galli M., Frigerio C., Colombo C.V., **Casari E.**, Longhese M.P., Clerici M. 'Exo1 supports the function of Tel1/ATM in promoting cell survival to replication stress', Abstract and Poster presentation, Btbs day 2024, Department of Biotechnology and Biosciences, University of Milano-Bicocca
- 13/12/2022 Rinaldi C., Pizzul P., **Casari E.**, Tisi R., Longhese MP. 'Role of the Ku complex in DNA damage response', Abstract and Poster presentation, Btbs day 2022, Department of Biotechnology and Biosciences, University of Milano-Bicocca
- 22-24/09/2021 **Casari E.**, Gobbini E, Gnugnoli M, Mangiagalli M, Clerici M, Longhese MP. 'Dpb4 acts in two different protein complexes to promote resection of DNA double-strand breaks and checkpoint activation', Abstract and Poster presentation, AGI congress 2021
- 22-24/09/2021 Gnugnoli M., **Casari E.**, Longhese MP. 'The chromatin remodeler Chd1 supports MRX and Exo1 functions in resection of DNA double-strand breaks', Abstract and Poster presentation, AGI congress 2021
- 15/12/2021 **Casari E.**, Gobbini E, Gnugnoli M, Mangiagalli M, Clerici M, Longhese MP. 'Dpb4 acts in two different protein complexes to promote resection of DNA double-strand breaks and checkpoint activation', Abstract and Poster presentation, Btbs day 2021, Department of Biotechnology and Biosciences, University of Milano-Bicocca
- 15/12/2020 **Casari E.**, Gobbini E., Calabrese S., Clerici M., Longhese MP. 'Dual role of Dpb4 in the DNA damage response', Abstract and Poster presentation, Btbs day 2020, Department of Biotechnology and Biosciences, University of Milano-Bicocca
- 22/11/2019 **Casari E.**, Gnugnoli M., Ratti S., Esposito F., Clerici M., Longhese M.P., 'Regulation of DNA double-strand breaks repair by chromatin remodelers', abstract e poster presentation, Abstract and Poster presentation, Btbs day 2019, Department of Biotechnology and Biosciences, University of Milano-Bicocca

- 18-22/08/2019 Marsella A., **Casari E.**, Rinaldi C., Longhese MP., 'Rif2-mediated Regulation of MRX Activity at DNA Double-Strand Breaks', Abstract and Poster presentation, Yeast Meeting congress (Göteborg – Svezia)

SCIENTIFIC PEER-REVIEWED PUBLICATIONS

h-index: 9 (January 2025)

1. **Casari E***, Gnugnoli M*, Pizzul P, Tisi R, Longhese MP. (2026) Sae2 integrates CDK and checkpoint phosphorylation to coordinate MRX cleavage with checkpoint attenuation. *Commun Biol*, 9, 144.
*These authors contributed equally to the work
2. **Casari E***, Corallo F*, Milani LE, Tisi R, Longhese MP. (2025) Stn1 supports Mec1 function in protecting stalled replication forks from degradation. *PLoS Genetics*, 21(10):e1011917.
*These authors contributed equally to the work
3. **Casari E**, Tisi R, Longhese MP. (2025) Checkpoint activation and recovery: regulation of the 9-1-1 axis by the PP2A phosphatase. *DNA Repair (Amst)*, 151, 103854.
4. Colombo CV*, **Casari E***, Gnugnoli M, Corallo F, Tisi R, Longhese MP. (2024) Functional and structural insights into the role of Sae2 C-terminus in the activation of MRX endonuclease. *Nucleic Acids Research*, 52(22):13849-13864.
*These authors contributed equally to the work
5. **Casari E**, Pizzul P, Rinaldi C, Gnugnoli M, Clerici M, Longhese MP. (2024) Proteasome-mediated degradation of long-range nucleases negatively regulates resection of DNA double-strand breaks. *iScience*, 27(7):110373.
6. Galli M, Frigerio C, Colombo CV, **Casari E**, Longhese MP, Clerici M (2024) Exo1 cooperates with Tel1/ATM in promoting recombination events at DNA replication forks. *iScience*, 27(8):110410.
7. **Casari E**, Pizzul P, Rinaldi C, Gnugnoli M, Clerici M, Longhese MP. (2023) The PP2A phosphatase counteracts the function of the 9-1-1 axis in checkpoint activation. *Cell Reports*, 42, 113360.
8. Pizzul P, **Casari E**, Rinaldi C, Gnugnoli M, Mangiagalli M, Tisi R, Longhese MP. (2024) Binding of Rif2 to Rad50 inhibits Tel1 functions at DNA double-strand breaks by limiting MRX-Tel1 interaction. *Nucleic Acids Research*, 52, 2355-2371.
9. Rinaldi C, Pizzul P, **Casari E**, Mangiagalli M, Tisi R, Longhese MP. (2023) The Ku complex promotes DNA endbridging and this function is antagonized by Tel1/ATM kinase. *Nucleic Acids Research*, 51, 1783-1802.

10. **Casari E***, Gnugnoli M*, Rinaldi C, Pizzul P, Colombo CV, Bonetti D, Longhese MP. (2022) To Fix or Not to Fix: Maintenance of Chromosome Ends Versus Repair of DNA Double-Strand Breaks. *Cells*, 11, 3224.
*These authors contributed equally to the work
11. Pizzul P*, **Casari E***, Gnugnoli M, Rinaldi C, Corallo F, Longhese MP (2022) The DNA damage checkpoint: A tale from budding yeast. *Frontiers in Genetics*, 15, 995163.
*These authors contributed equally to the work
12. **Casari E**, Gobbini E, Gnugnoli M, Mangiagalli M, Clerici M, Longhese MP (2021) Dpb4 promotes resection of DNA double-strand breaks and checkpoint activation by acting in two different protein complexes. *Nature Communications*, 12, 4750.
13. **Casari E**, Gobbini E, Clerici M, Longhese MP (2021) Resection of a DNA Double-Strand Break by Alkaline Gel Electrophoresis and Southern Blotting. *Methods in Molecular Biology*, 2153, 33-45.
14. Gnugnoli M, **Casari E**, Longhese MP. (2021) The chromatin remodeler Chd1 supports MRX and Exo1 functions in resection of DNA double-strand breaks. *PLOS Genetics*, 17, e1009807.
15. Gobbini E, **Casari E**, Colombo CV, Bonetti D, Longhese MP (2020) The 9-1-1 Complex Controls Mre11 Nuclease and Checkpoint Activation during Short-Range Resection of DNA Double-Strand Breaks. *Cell Reports*, 33, 108287.
16. **Casari E***, Rinaldi C*, Marsella A, Gnugnoli M, Colombo CV, Bonetti D, Longhese MP (2019) Processing of DNA Double-Strand Breaks by the MRX Complex in a Chromatin Context. *Frontiers in Molecular Biosciences*, 6, 43.
*These authors contributed equally to the work
17. Marsella A, Cassani C, **Casari E**, Tisi R, Longhese MP (2019) Structure-function relationships of the Mre11 protein in the control of DNA end bridging and processing. *Current Genetics*, 65, 11-16.
18. Gobbini E, Cassani C, Vertemara, Wang W, Mambretti F, **Casari E**, Sung P, Tisi R, Zampella G, Longhese MP (2018) The MRX complex regulates Exo1 resection activity by altering DNA end structure. *EMBO Journal*, 37, e98588.

TUTORING, TEACHING and THIRD MISSION ACTIVITIES

- Co-Teacher of laboratory in Genetic Technologies, AY 2019/2020, Department of Biotechnology and Biosciences, University of Milano-Bicocca, Bachelor's degree in Biotechnology, 30 hours, 3 CFU.

- Co-Teacher of laboratory in Molecular Biology, AY 2022/2023, Department of Biotechnology and Biosciences, University of Milano-Bicocca, Bachelor's degree in Biotechnology, 30 hours, 3 CFU.
- Co-Teacher of laboratory in Genetic Technologies, AY 2023/2024, Department of Biotechnology and Biosciences, University of Milano-Bicocca, Bachelor's degree in Biotechnology, 16 hours, 1.6 CFU.
- Co-Teacher of laboratory in Molecular Biology, AY 2024/2025, Department of Biotechnology and Biosciences, University of Milano-Bicocca, Bachelor's degree in Biology, 40 hours, 4 CFU.
- Co-Teacher of laboratory in Molecular Biology, AY 2025/2026, Department of Biotechnology and Biosciences, University of Milano-Bicocca, Bachelor's degree in Biology, 20 hours, 2 CFU.
- Co-Teacher of laboratory in Molecular Biology, AY 2025/2026, Department of Biotechnology and Biosciences, University of Milano-Bicocca, Bachelor's degree in Biology, 30 hours, 3 CFU.
- Tutor of laboratory in Molecular Biology, AY 2024/2025, Department of Biotechnology and Biosciences, University of Milano-Bicocca, Bachelor's degree in Biotechnology, 15 hours.
- Tutor of laboratory in Molecular Biology, AY 2025/2026, Department of Biotechnology and Biosciences, University of Milano-Bicocca, Bachelor's degree in Biotechnology, 15 hours.
- Co-tutor of the student Esposito Francesca, Master's Degree in Industrial Biotechnology, AY 2019/2020, Department of Biotechnology and Biosciences, University of Milano-Bicocca, Molecular Genetics Laboratory. Tutor: Professor Longhese Maria Pia, Ph.D.
- Co-tutor of the student Calabrese Salvatore, Master's Degree in Industrial Biotechnology, AY 2020/2021, Department of Biotechnology and Biosciences, University of Milano-Bicocca, Molecular Genetics Laboratory. Tutor: Professor Longhese Maria Pia, Ph.D.
- Co-tutor of the student Civetta Andrea, Master's Degree in Industrial Biotechnology, AY 2022/2023, Department of Biotechnology and Biosciences, University of Milano-Bicocca, Molecular Genetics Laboratory. Tutor: Professor Longhese Maria Pia, Ph.D.
- Co-tutor of the student Milani Luca Edoardo, Master's Degree in Industrial Biotechnology, AY 2024/2025, Department of Biotechnology and Biosciences, University of Milano-Bicocca, Molecular Genetics Laboratory. Tutor: Professor Longhese Maria Pia, Ph.D.
- Co-tutor of the student Di Cesare Alessia, Bachelor's Degree in Biotechnology, AY 2021/2022, Department of Biotechnology and Biosciences, University of Milano-Bicocca, Molecular Genetics Laboratory. Tutor: Professor Clerici Michela, Ph.D.
- Co-tutor of the student Pacaccio Antonia, Bachelor's Degree in Biotechnology, AY 2023/2024, Department of Biotechnology and Biosciences, University of Milano-Bicocca, Molecular Genetics Laboratory. Tutor: Professor Clerici Michela, Ph.D.
- Communication activities for AIRC association with Primary School students in May 2023, April 2024, December 2024 (6h).

- Teacher of 'PLS PNRR Orientamento - Winter School Biologia e Biotecnologie' AY 2023/24 (5h).
- Co-tutor of 'PLS genetic laboratory' (BIO/18), from 12/01/24 to 28/02/24 (AY 2023/24) (5h).
- Teacher of 'PLS PNRR Orientamento - l'Università va a scuola', AY 2023/24 (2.5h).
- Teacher of 'PLS PNRR Orientamento - La genetica nell'era post-genomica', AY 2025/26 (4h).

PRIZES AND AWARDS

- 1) First prize 'Premio Giovanni Magni 2021'- Buzzati Traverso Foundation for the best publication with 'Dpb4 acts in two different protein complexes to promote resection of DNA double-strand breaks and checkpoint activation'.
- 2) Second prize 'Young Talent Award 2022' – University of Milano-Bicocca and Accademia dei Lincei.
- 3) Special mention for 'the best PhD Thesis in Genetic Field 2022' from AGI.
- 4) Third prize 'Young Talent Award 2023' – University of Milano-Bicocca and Accademia dei Lincei.

The declarations made in this curriculum are to be considered issued pursuant to art. 46 and 47 of D.P.R. 445/2000. I authorize the processing of personal data contained in my curriculum vitae based on art. 13 of Legislative Decree 196/2003 and art. 13 GDPR 679/16.

Milan, 10/02/2026
Erika Lenzi