

CASARI ERIKA – Curriculum Vitae

Present position: Post-Doctoral Researcher, Department of Biotechnology and Biosciences; University of Milano-Bicocca

PROFESSIONAL EXPERIENCE AND SCIENTIFIC ACTIVITY

Erika Casari scientific interests are focused on understanding the molecular mechanisms ensuring genome integrity. She possesses specialized skills in genetic, molecular biology, biochemistry, cell biology and microbiology techniques, fluorescence microscopy and image processing. Erika Casari manipulates the budding yeast *S. cerevisiae* as a model system to explore the mechanisms preserving genome stability in eukaryotes, focusing on the cellular response to DNA damage. Unveil the molecular mechanisms underlying the response to DNA perturbations is of considerable biological relevance, in fact understanding of DNA repair mechanisms can allow to determine more accurately the alterations taking place in cancer cells. Erika Casari did her master's degree internship at Dept. of Biotechnology and Biosciences, University of Milano-Bicocca, in the laboratory of Molecular Genetics of Prof. Longhese Maria Pia. From 2018 to 2021, Erika Casari did PhD in TeCSBi, and gaining a research three-year fellowship (Grant 'Dipartimenti di Eccellenza 2017') at Dept. of Biotechnology and Biosciences in the laboratory of Molecular Genetics of Prof. Longhese Maria Pia. The project concerned the research of synthetic cytotoxicity to study the DNA repair mechanisms in cancer. From 11/2021 to 02/2022, Erika Casari gained a post-doctoral fellowship (type B) at Dept. of Biotechnology and Biosciences in the laboratory of Molecular Genetics of Prof. Bonetti Diego. The project concerned the study of the connections between RNA metabolism and DNA damage response. Since 03/2022, Erika Casari has gained a post-doctoral fellowship (type A2) at Dept. of Biotechnology and Biosciences in the laboratory of Molecular Genetics of Prof. Longhese Maria Pia. The project concerns the identification of novel regulators of Rad9 functions at DNA double-strand breaks.

EDUCATION AND ACADEMIC DEGREES

In 2016, Erika Casari gained the bachelor's degree in Biotechnology at the University of Milano-Bicocca. In 2018, she received the master's degree in Industrial Biotechnology at the University of Milano-Bicocca (110/110 *cum laude*). In January 2022, she obtained PhD in TeCSBi at the University of Milano-Bicocca (Excellent *cum laude*).

SCIENTIFIC PUBLICATIONS

The research activity of Erika Casari is documented by **15** publications in peer-reviewed international scientific journals, 4 selected oral communication and 8 posters in National or International congresses.

H-index: 8, Scopus citations: 140; Total IF > 108 (February 2025)

Scopus ID: 57202585885; Orcid ID: 0000-0002-4096-714x

1. Colombo CV*, **Casari E***, Gnugnoli M, Corallo F, Tisi R, Longhese MP. (2024) Functional and molecular insights into the role of Sae2 C-terminus in the activation of MRX endonuclease. *Nucleic Acids Research*, 52, 13849-13864. *Joint First Author
2. Gnugnoli M, Rinaldi C, **Casari E**, Pizzul P, Bonetti D, Longhese MP (2024) Proteasome-mediated degradation of long-range nucleases negatively regulates resection of DNA double-strand breaks. *iScience*. 27, 110373.
3. 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, 110410.
4. 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.

5. **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.
6. Rinaldi C, Pizzul P, **Casari E**, Mangiagalli M, Tisi R, Longhese MP (2023) The Ku complex promotes DNA end bridging and this function is antagonized by Tel1/ATM kinase. *Nucleic Acids Research*, 51, 1783-1802.
7. **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. *Joint First Author
8. 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. *Joint First Author
9. **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.
(IF2021: 17.694; Scopus citations: 11)
10. **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.
11. 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.
12. 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.
13. **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. *Joint First Author
14. 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.
15. 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.

ORAL PRESENTATIONS

1. **Casari Erika** and Longhese Maria Pia, Phosphatases in the regulation of DNA damage response: the role of PP2A, XVII FISV Congress, Padua, 2024
2. **Casari Erika** and Longhese Maria Pia, Role of the PP2A phosphatase regulatory subunits in the DNA damage response, ICYGMB Yeast Congress 2023, Florence, 2023
3. **Casari Erika**, Synthetic cytotoxicity to target DNA repair in cancer, Btbs Day, University of

Milano-Bicocca, 2019

4. **Casari Erika**, Synthetic cytotoxicity to target DNA repair in cancer, Kick Off Meeting, University of Milano-Bicocca, 2018

CONTRIBUTIONS TO MEETINGS AND SYMPOSIA

1. **Casari Erika**, Pizzul Paolo, Rinaldi Carlo, Gnugnoli Marco, Clerici Michela and Longhese Maria Pia. The PP2A phosphatase counteracts the function of the 9-1-1 axis in checkpoint activation. Btbs Day, University of Milano-Bicocca, 2024
2. Rinaldi Carlo, Pizzul Paolo, **Casari Erika**, Tisi Renata, Longhese and Longhese Maria Pia. Role of the Ku complex in the DNA damage response. Btbs Day, University of Milano-Bicocca, 2022
3. **Casari Erika**, Gobbini Elisa, Gnugnoli Marco, Mangiagalli Marco, Clerici Michela and Longhese Maria Pia. Dpb4 acts in two different protein complexes to promote resection of DNA double strand breaks and checkpoint activation. Btbs Day, University of Milano-Bicocca, 2021
4. **Casari Erika**, Gobbini Elisa, Gnugnoli Marco, Mangiagalli Marco, Clerici Michela and Longhese Maria Pia. Dpb4 acts in two different protein complexes to promote resection of DNA double strand breaks and checkpoint activation, AGI Congress 2021
5. Gnugnoli Marco, **Casari Erika**, and Longhese Maria Pia. The chromatin remodeler Chd1 supports MRX and Exo1 functions in resection of DNA double strand breaks, AGI Congress 2021
6. **Casari Erika**, Gobbini Elisa, Calabrese Salvatore, Clerici Michela and Longhese Maria Pia. Dual role of Dpb4 in the DNA damage response. Btbs Day, University of Milano-Bicocca, 2020
7. **Casari Erika***, Gnugnoli Marco*, Ratti Silvia, Esposito Francesca, Clerici Michela and Longhese Maria Pia Regulation of DNA double-strand breaks repair by chromatin remodelers. Btbs Day, University of Milano-Bicocca, 2019
8. Marsella Antonio, **Casari Erika**, Rinaldi Carlo and Longhese Maria Pia. Rif2-mediated Regulation of MRX Activity at DNA Double-Strand Breaks, ICYGMB Yeast Congress 2019, Goteborg, 2019

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.

TEACHING ACTIVITIES

- Co-teacher of Molecular biology laboratory for Biotechnology bachelor's degree students, AY 2022/2023 (3 CFU)
- Co-teacher of Molecular biology laboratory for Biology bachelor's degree students, AY 2024/2025 (4 CFU)
- Co-teacher of Genetic laboratory for Biotechnology bachelor's degree students, AY 2019/2020 (3

CFU)

- Co-teacher of Genetic laboratory for Biotechnology degree students AY 2023/2024 (1.6 CFU)

TUTORING ACTIVITIES

- Co-tutor of four students of master's degree in Industrial Biotechnology, AY 2019/20, AY 2020/21, AY 2022/23 and AY 2024/25
- Co-tutor of two students of bachelor's degree in Biotechnology, AY 2021/22, AY 2023/24

THIRD MISSION ACTIVITIES

- Teacher for AIRC association in the 'Litta Primary School – Lainate (MI)' for third mission activities
- Co-tutor of PLS genetic laboratory AY 2023/2024
- Teacher for the third mission activity 'Winter school, Biologia e Biotecnologie', University of Milano-Bicocca
- Teacher for the third mission activity 'PNRR - 'L'Università va a Scuola', Liceo Ciceri, Como

REFeree ACTIVITY FOR INTERNATIONAL JOURNALS

- Review Editor for Frontiers in Cell and Developmental Biology
- Review Editor for Frontiers in Molecular Biosciences
- Review Editor for Cell Biochemistry & Function – Wiley

Milan, 17/02/2025