

SIMONE SABBIONEDA

Dati Personali

Data: 14 Ottobre 1977

Luogo di Nascita: Bollate, Milano, Italia

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Indirizzo: Istituto di Genetica Molecolare, CNR, Via Abbiategrosso 207, 27100, Pavia, Italia

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Formazione

Dottorato: 2004, Università degli Studi di Milano (in Scienze Genetiche e Biomolecolari)

Laurea: 2001, Università degli Studi di Milano (in Scienze Biologiche)

Esperienze Lavorative e Affiliazione

2011-currente Ricercatore, Istituto di Genetica Molecolare, CNR, Pavia

2005-2011 Postdoc, Genome Damage and Stability Centre, University of Sussex

2005 Dipartimento di Scienze Biomolecolari e Biotecnologie Università degli Studi di Milano

Grants

2019-2021: PRIN 2017 – Unità di ricerca del progetto “G quadruplexes as modulators of genome stability

2013-2017: AIRC Start up Grant - Effects on genome stability of polymerase eta regulation by the Ubiquitin and SUMO pathways.

2012-2016 European Commission - Marie Curie Actions Career Integration Grant “Regulation of polη by phosphorylation, ubiquitination and SUMOylation”

Partecipazione in Progetti di Ricerca

2008-2011 Medical Research Council – Program Grant “Replication of DNA Damage, and the role of the SMC5-6 protein complex in the response to DNA damage”

2005-2008 European Commission - Research Training Network “DNA REPAIR AND HUMAN HEALTH”

2005-2008 European Science Foundation – EuroDYNA “Dynamic Nuclear Architecture and Chromatin Function”

Pubblicazioni

Maffia A, Ranise C, Sabbioneda S. **From R-Loops to G-Quadruplexes: Emerging New Threats for the Replication Fork** (2020). Int J Mol Sci. Feb 22;21(4). pii: E1506. doi: 10.3390/ijms21041506

Belloni E, Di Matteo A, Pradella D, Vacca M, Wyatt CDR, Alfieri R, Maffia A, **Sabbioneda S**, Ghigna C. **Gene Expression Profiles Controlled by the Alternative Splicing Factor Nova2 in Endothelial Cells.** (2019) *Cells*. Nov 23;8(12). pii: E1498. doi: 10.3390/cells8121498.

Cipolla L, Bertolotti F, Maffia A, Liang CC, Lehmann AR, Cohn MA, Sabbioneda S. **UBR5 interacts with the replication fork and protects DNA replication from DNA polymerase η toxicity.** (2019) *Nucleic Acids Res*. Oct 5. pii: gkz824. doi: 10.1093/nar/gkz824.

González Besteiro MA, Calzetta NL, Loureiro SM, Habib M, Bétous R, Pillaire MJ, Maffia A, Sabbioneda S, Hoffmann JS, Gottifredi V. **Chk1 loss creates replication barriers that compromise cell survival independently of excess origin firing.** (2019) *EMBO J*. Aug 15;38(16):e101284. doi: 10.15252/embj.2018101284.

Besio R, Garibaldi N, Leoni L, Cipolla L, Sabbioneda S, Biggiogera M, Mottes M, Aglan M, Otaify GA, Temtamy SA, Rossi A, Forlino A. **Cellular stress due to impairment of collagen prolyl hydroxylation complex is rescued by the chaperone 4-phenylbutyrate.** (2019) *Dis Model Mech*. Jun 20;12(6). pii: dmm038521. doi: 10.1242/dmm.038521

Besio R, Iula G, Garibaldi N, Cipolla L, Sabbioneda S, Biggiogera M, Marini JC, Rossi A, Forlino A. **4-PBA ameliorates cellular homeostasis in fibroblasts from osteogenesis imperfecta patients by enhancing autophagy and stimulating protein secretion.** (2018) *Biochim Biophys Acta Mol Basis Dis*. May;1864(5 Pt A):1642-1652.

Bertolotti F, Cea V, Liang CC, Lanati T, Maffia A, Avarello MDM, Cipolla L, Lehmann AR, Cohn MA, Sabbioneda S. **Phosphorylation regulates human pol η stability and damage bypass throughout the cell cycle.** (2017) *Nucleic Acids Res*. Sep 19;45(16):9441-9454. doi: 10.1093/nar/gkx619.

Mentegari E, Crespan E, Bavagnoli L, Kissova M, Bertolotti F, Sabbioneda S, Imhof R, Sturla SJ, Nilforoushan A, Hübscher U, van Loon B, Maga G. **Ribonucleotide incorporation by human DNA polymerase η impacts translesion synthesis and RNase H2 activity.** (2017) *Nucleic Acids Res*. Mar 17;45(5):2600-2614.

Cipolla L, Maffia A, Bertolotti F, Sabbioneda S. **The Regulation of DNA Damage Tolerance by Ubiquitin and Ubiquitin-Like Modifiers.** (2016) *Front Genet*. Jun 13;7:105

Kanu N, Zhang T, Burrell RA, Chakraborty A, Cronshaw J, DaCosta C, Grönroos E, Pemberton HN, Anderton E, Gonzalez L, Sabbioneda S, Ulrich HD, Swanton C, Behrens A. **RAD18, WRNIP1 and ATMIN promote ATM signalling in response to replication stress.** (2016) *Oncogene*. Jul 28;35(30):4020

Harley ME, Murina O, Leitch A, Higgs MR, Bicknell LS, Yigit G, Blackford AN, Zlatanou A, Mackenzie KJ, Reddy K, Halachev M, McGlasson S, Reijns MA, Fluteau A, Martin CA, Sabbioneda S, Elcioglu NH, Altmüller J, Thiele H, Greenhalgh L, Chessa L, Maghnie M, Salim M, Bober MB, Nürnberg P, Jackson SP, Hurler ME, Wollnik B, Stewart GS, Jackson AP. **TRAIP promotes DNA damage response during genome replication and is mutated in primordial dwarfism.** (2016) *Nat Genet*. Jan;48(1):36-43.

Zlatanou A, Sabbioneda S, Miller ES, Greenwalt A, Aggathangelou A, Maurice MM, Lehmann AR, Stankovic T, Reverdy C, Colland F, Vaziri C, Stewart GS. **USP7 is essential for maintaining Rad18 stability and DNA damage tolerance.** (2016) *Oncogene*. Feb 25;35(8):965-76

Cea V, Cipolla L, Sabbioneda S. **Replication of Structured DNA and its implication in epigenetic stability.** (2015) *Front Genet*. Jun 16;6:209

Lehmann, AR Sabbioneda, Goehler T; Niimi A, Green CM, Bienko M, Dikic I. **Regulation of translesion synthesis in human cells** (2012) *MUTAGENESIS* Jan 27(1):106

Göhler T, Sabbioneda S, Green CM, Lehmann AR. **ATR-mediated phosphorylation of DNA polymerase η is needed for efficient recovery from UV damage.** (2011) *J Cell Biol*. Jan 24;192(2):219-27

Mari PO, Verbiest V, Sabbioneda S, Gourdin AM, Wijgers N, Dinant C, Lehmann AR, Vermeulen W, Giglia-Mari G. **Influence of the live cell DNA marker DRAQ5 on chromatin-associated processes.** (2010) *DNA Repair* Jul 1; 9(7):848-55.

Bienko M, Green CM, Sabbioneda S, Crosetto N, Matic I, Hibbert RG, Begovic, T, Niimi A, Mann M, Lehmann AR, Dikic I. **Regulation of translesion synthesis DNA polymerase η by monoubiquitination** (2010) *Mol Cell*. Feb 12;37(3):396-407.

Sabbioneda S, Green CM, Bienko M, Kannouche P, Dikic I, Lehmann AR.. **Ubiquitin-binding motif of human DNA polymerase η is required for correct localization.** (2009) *Proc Natl Acad Sci U S A*. Feb 24;106(8):E20

Niimi A, Brown S, Sabbioneda S, Kannouche PL, Scott A, Yasui A, Green CM, Lehmann AR. **Regulation of proliferating cell nuclear antigen ubiquitination in mammalian cells.** (2008) *Proc Natl Acad Sci U S A*. Oct 21;105(42):16125-30.

Sabbioneda S, Gourdin AM, Green CM, Zotter A, Giglia-Mari G, Houtsmuller A, Vermeulen W, Lehmann AR. **Effect of proliferating cell nuclear antigen ubiquitination and chromatin structure on the dynamic properties of the Y-family DNA polymerases.** (2008) *Mol Biol Cell*. Dec;19(12):5193-202.

Lehmann AR, Niimi A, Ogi T, Brown S, Sabbioneda S, Wing JF, Kannouche PL, Green CM. **Translesion syntesis: Y-family polymerases and the polymerase switch.** (2007) *DNA Repair* Jul 1;6(7):891-9

Simone Sabbioneda, Ileana Bortolomai, Michele Giannattasio, Paolo Plevani, Marco Muzi Falconi. **Yeast Rev1 is cell cycle regulated, phosphorylated in response to DNA damage and its binding to chromosomes is dependent upon MEC1.** *Dna Repair* (2007) Jan 4;6(1):121-7.

Simone Sabbioneda, Brenda Minesinger, Michele Giannattasio, Paolo Plevani, Marco Muzi Falconi, Sue Jinks-Robertson. **The 9-1-1 Checkpoint Clamp Physically Interacts with Pol ζ and Is Partially Required for Spontaneous Pol ζ -dependent Mutagenesis in *Saccharomyces cerevisiae*.** (2005) *J. Biol. Chem.* **280**, 38657-65

Simone Sabbioneda, Lisa di Nola, Federico Lazzaro, Marco Muzi Falconi, Paolo Plevani. **The DNA damage checkpoint response in budding yeast.** (2004) *Recent development in nucleic acid research*.

Muzi-Falconi M., Sabbioneda S., Plevani P., Foiani M. **Sometimes size does matter.**(2003). *Europ. J. Of Cancer*, **39**, 1337-1338.

Giannattasio M., Sabbioneda S., Minuzzo M., Plevani P., Muzi-Falconi M. **Correlation between Checkpoint Activation and *in Vivo* Assembly of the Yeast Checkpoint Complex Rad17-Mec3-Ddc1.** (2003). *J. Biol. Chem.* **278**, 22303-22308.

Partecipazione a congress

2018 Talk at “5th DNA Polymerase meeting”, Leiden, The Netherlands. **Phosphorylation regulates human pol η stability and damage bypass throughout the cell cycle.**

2016 Talk at “Responses to DNA damage: from molecule to disease”, Egmond aan Zee, The Netherlands. **UBR5 protects DNA replication from DNA polymerase η toxicity mediated by ubiquitylated H2A.**

2015 Talk at Joint IGM-BDD meeting, Pavia, Italy. **A new role of the E3 ligase UBR5 in DNA replication and damage tolerance**

2014 Poster at 9th 3R Symposium, Gotemba, Japan. **A new role of the E3 ligase UBR5 in DNA replication and damage tolerance**

2013 Poster at SIBBM, Pavia, Italy. **Regulation of Polymerase η by the SUMO pathway.**

2013 Talk at Joint IGM meeting, Bologna, Italy. **Role of post translational modifications in Translesion synthesis**

2013 Talk at AIRC Start-up meeting, Bologna. **Italy Effects on genome stability of polymerase eta regulation by the Ubiquitin and SUMO pathways**

2012 Poster at 8th 3R Symposium, Awaji, Japan. **Regulation of Polymerase η by the SUMO pathway.**

2010 Talk at Ubiquitin and Cancer workshop, The Beatson Institute for Cancer Research, Glasgow, Scotland, UK. **Ubiquitin regulation in post replication repair**

2009 Talk at Genome Stability Network Conference, Hinxton, UK. **The effect of PCNA ubiquitination and chromatin structure on the dynamic properties of Y-family DNA polymerases.**

2008 Talk at EuroDYNA Conference, Hinxton, UK. **Dynamics of translesion polymerases in living cells**

Insegnamento

2017-2023 Abilitazione Scientifica Nazionale (Seconda Fascia) Settori concorsuali 05/E2 (Biologia Molecolare) e 05/I1 (Genetica)

2012- Proponente nel corso di Dottorato di Ricerca in Genetica, Biologia Molecolare e Cellulare, Università degli Studi di Pavia

2011- Insegnante Ospite, Biologia Cellulare della cellula, Università degli Studi di Pavia

2010-2011 Insegnante Ospite, Master in Imaging in Biomedical Research, University of Sussex, UK

2004 Assistente, Biologia Molecolare Avanzata, Università degli Studi di Milano

2002 Assistente, Laboratorio di Biologia Molecolare 2, Università degli Studi di Milano

Servizi per la Ricerca

2012-currente Manager della struttura di Microscopia e Citofluorimetria di IGM-CNR

Revisore per Riviste internazionali

DNA Repair, PLOSOne, Molecular and Cellular Biology, Oncogene, EMBO Journal, Journal of Cell Science, Nature Communications

