

# MARCO BARCHI, Ph.D.

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## EMPLOYMENT AND RESEARCH EXPERIENCE

### University of Rome “Tor Vergata”, Rome, Italy

- Assistant Professor of human anatomy, Department of Biomedicine and Prevention, 2006 –to date
- PhD. Student, Department of Biomedicine and Prevention, University of Rome Tor Vergata, 1996-2000
- Research Fellow, Department of Physiology, University of Rome Tor Vergata, 1995-1996

### Memorial Sloan-Kettering Cancer Center, New York, NY, USA

- Post-doc, 2002-2006

### Columbia University in the City of New York, USA

- Post-doc, 2001-2002

### Italian National Agency for New Technologies, Energy and the Environment (ENEA), Anguillara, Italy

- Undergraduate student, 1993-1995

## PUBLICATIONS:

1. Caggiano C, Guida E, Todaro F, Bielli P, Mori M, Ghirga F, Quaglio D, Botta B, Moretti F, Grimaldi P, Rossi P, Jannini E, **Barchi M\***, Dolci S\*, (2020). Sempervirine inhibits RNA polymerase I transcription independently from p53 in tumor cells. *Cell Death and Discovery*, (in stampa)  
\*co-corresponding authors
2. Cavallo F, Caggiano C, Jasin M, **Barchi M** (2020). Assessing Homologous Recombination and Interstrand Cross-Link Repair in Embryonal Carcinoma Testicular Germ Cell Tumor Cell Lines. *Testicular Germ Cell Tumors; Methods in Molecular Biology*.
3. **Barchi M**, Innocenzi E, Giannatasio T, Docli S, Rossi P and Grimaldi P. (2019). Cannabinoids Receptors Signaling in the Development, Epigenetics and Tumors of Male Germ Cells. *Int J. Mol Sci*.
4. Papanikos F, Clément JAJ, Testa E, Ravindranathan R, Grey C, Dereli I, Bondarieva A, Valerio-Cabrera S, Stanzione M, Schleiffer A, Jansa P, Lustyk D, Fei JF, Adams IR, Forejt J, **Barchi M**, de Massy B, Toth A. (2019). Mouse ANKRD31 Regulates Spatiotemporal Patterning of Meiotic Recombination Initiation and Ensures Recombination between X and Y Sex Chromosomes. *Mol Cell* 6;74(5):1069-1085

5. Testa E, Nardozi D, Antinozzi C, Faieta M, Di Cecca S, Caggiano C, Fukuda T, Bonanno E, Zhenkun L, Maldonado A, Roig I, Di Giacomo M and **Barchi M** (2018). *H2afx* and *Mdc1* promote maintenance of genome integrity in male germ cells. *JCS* 131, jcs214411
6. **Barchi M**, Cohen P, Keeney S. (2016). Special Issue on "Recent advances in meiotic chromosome structure, recombination and segregation". *Chromosoma* 125(2), 173-175.
7. Faieta M, Di Cecca S, De Rooij DG, Luchetti A, Murdocca M, Di Giacomo M, Di Siena S, Pellegrini M, Rossi P, **Barchi M** (2016). A surge of late-occurring double-strand breaks rescues chromosome synapses of mice with hypomorphic expression of SPO11. *Chromosoma* 125(2), 189-203.
8. Cavallo, F., Feldman, D.R., **Barchi, M.** (2013) Revisiting DNA damage-repair, p53-mediated apoptosis and cisplatin sensitivity in germ cell tumors. *International Journal of Developmental Biology* 57(2-4) pp. 273-280.
9. Kauppi L, **Barchi M**, Lange J, Baudat F, Jasin M, Keeney S. (2013). Numerical constraints and feedback control of double-strand breaks in mouse meiosis. *Genes & Development*. Apr 15;27(8):873-86.
10. Cavallo F, Graziani G, Antinozzi C, Feldman DR, Houldsworth J, Bosl GJ, Chaganti RS, Moynahan ME, Jasin M, **Barchi M.** (2012). Reduced proficiency in homologous recombination underlies the high sensitivity of embryonal carcinoma testicular germ cell tumors to Cisplatin and poly (adp-ribose) polymerase inhibition. *PLoS One*. 7(12):e51563.
11. La Volpe A, **Barchi M.** (2012). Meiotic double strand breaks repair in sexually reproducing eukaryotes: we are not all equal. *Exp Cell Res*. Jul 15;318(12):1333-9.
12. Illert AL, Kawaguchi H, Antinozzi C, Bassermann F, Quintanilla-Martinez L, von Klitzing C, Hiwatari M, Peschel C, de Rooij DG, Morris SW, **Barchi M**, Duyster J. (2012). Targeted inactivation of nuclear interaction partner of ALK disrupts meiotic prophase. *Development*. Jul;139(14):2523-34.
13. Paronetto MP, Messina V, **Barchi M**, Geremia R, Richard S, Sette C. (2011). Sam68 marks transcriptionally active stages of spermatogenesis, and modulates alternative splicing in male germ cells. *Nucleic Acid Research*. Feb 25.
14. Nakanishi K, Cavallo F, Perrouault L, Giovannangeli C, Moynahan ME, **Barchi M**, Brunet E, and Jasin M. (2011). Homology-directed Fanconi anemia pathway crosslink repair is dependent on DNA replication. *Nature Struct. Mol. Biol.*, 1Apr;18(4):500-3.
15. Kauppi L, **Barchi M**, Baudat F, Romanienko PJ, Keeney S, Jasin M. (2011). Distinct Properties of the XY Pseudoautosomal Region Crucial for Male Meiosis. *Science* 18 February 2011: 916-920.
16. Muciaccia B, Sette C, Paronetto MP, **Barchi M**, Pensini S, et al. (2010). Expression of a truncated form of KIT tyrosine kinase in human spermatozoa correlates with sperm DNA integrity. *Hum Reprod* 25: 2188-2202.
17. **Barchi M.**, Geremia, R., Magliozzi, R., Bianchi, E. Isolation and analyses of enriched populations of male mouse germ cells by sedimentation velocity: the centrifugal elutriation (2009). *Methods in molecular biology* (Clifton, N.J.) 558, pp. 299-321.
18. Paronetto MP, Messina V, Bianchi E, **Barchi M**, Vogel G, et al. (2009). Sam68 regulates translation of target mRNAs in male germ cells, necessary for mouse spermatogenesis. *J Cell Biol* 185: 235-249.
19. **Barchi M**, Roig I, Di Giacomo M, de Rooij DG, Keeney S, et al. (2008). ATM promotes the obligate XY crossover and both crossover control and chromosome axis integrity on autosomes. *PLoS Genet* 4: e1000076.

20. Perera D, Tilston V, Hopwood JA, **Barchi M**, Boot-Handford RP, et al. (2007). Bub1 maintains centromeric cohesion by activation of the spindle checkpoint. *Dev Cell* 13: 566-579.
21. Liebe B, Petukhova G, **Barchi M**, Bellani M, Braselmann H, et al. (2006). Mutations that affect meiosis in male mice influence the dynamics of the mid-preleptotene and bouquet stages. *Exp Cell Res* 312: 3768-3781.
22. **Barchi M**, Mahadevaiah S, Di Giacomo M, Baudat F, de Rooij DG, Burgoyne PS, Jasin M, Keeney S. Surveillance of different recombination defects in mouse spermatocytes yields distinct responses despite elimination at an identical developmental stage (2005). *Mol Cell Biol*. Aug;25(16):7203-15.
23. Di Giacomo M, **Barchi M**, Baudat F, Edelmann W, Keeney S, Jasin M. Distinct DNA-damage-dependent and - independent responses drive the loss of oocytes in recombination-defective mouse mutants (2005). *Proc Natl Acad Sci US A*. Jan 18;102(3):737-42.
24. Couëdel C, Mills KD, **Barchi M**, Shen L, Olshen A, Johnson RD, Nussenzweig A, Essers J, Kanaar R, Li GC, Alt FW, Jasin M (2004). Collaboration of homologous recombination and nonhomologous end-joining factors for the survival and integrity of mice and cells. *Genes Dev*. Jun 1;18(11):1293-304.
25. Oishi K, **Barchi M**, Au AC, Gelb BD, Diaz GA (2004). Male infertility due to germ cell apoptosis in mice lacking the thiamin carrier *Tht1*. A new insight into the critical role of thiamin in spermatogenesis. *Dev Biol*. Feb 15;266(2):299-309.
26. **Barchi M**, Jasin M (2003). Seeking new meiotic genes. *Proc Natl Acad Sci U S A*. Dec 23;100(26):15287-9
27. Chieffi P, **Barchi M**, Di Agostino S, Rossi P, Tramontano D, Geremia R. (2003). Prolin-rich tyrosine kinase 2 (PYK2) expression and localization in mouse testis. *Mol Reprod Dev*. Jul;65(3):330-5.
28. Guardavaccaro D, Kudo Y, Boulaire J, **Barchi M**, Busino L, Donzelli M, Margottin-Goguet F, Jackson PK, Yamasaki L, Pagano M (2003). Control of meiotic and mitotic progression by the F box protein beta-Trcp1 in vivo. *Dev Cell*. Jun;4(6):799-812.
29. Sette C, Paronetto MP, **Barchi M**, Bevilacqua A, Geremia R, Rossi P (2002). Tr-kit-induced resumption of the cell cycle in mouse eggs requires activation of a Src-like kinase. *EMBO J*. Oct 15;21(20):5386-95.
30. Chieffi P, Battista S, **Barchi M**, Di Agostino S, Pierantoni GM, Fedele M, Chiariotti L, Tramontano D, Fusco A (2002). HMGA1 and HMGA2 protein expression in mouse spermatogenesis. *Oncogene*. May 16;21(22):3644-50.
31. Sette, C, **Barchi, M**, Bianchini A, Conti M, Rossi P, Geremia R (1999). Activation of the mitogen-activated protein kinase ERK1 during meiotic progression of mouse pachytene spermatocytes. *Journal of Biological Chemistry*. 274(47), pp. 33571-33579.

h-index: 21 (Google Scholar); i-10 index: 25 (Google Scholar); citations 2439 (all)

#### RESEARCH SUPPORT:

- Mission Sustainability Grant (18 months). Agency: University of Rome Tor Vergata. Role: **Principal Investigator**
- Telethon Grant 2012 (36 months). Agency: Telethon Foundation. Role: **Coordinator**
- PRIN 2010-2011 (36 months). Agency: Ministry of University and Scientific

- Research of Italy (MIUR). Role: **Unit Principal Investigator**
- Cooperlink Grant 2011 (24 months). Agency: MIUR. Role: **Principal Investigator**
- Italian Association for Cancer Researcher (AIRC) Grant, 2007 (36 months). Agency: AIRC. Role: **Principal Investigator**
- “Rientro dei Cervelli” 2005, (48 months). Agency: MIUR. Role: **Principal Investigator**

## HONORS:

### **Fellowships:**

- 2003-2005, American-Italian Cancer Foundation, at Memorial Sloan-Kettering Cancer Center, USA. Mentor: Maria Jasin.
- 2003-2005, The Lalor Foundation, at Memorial Sloan-Kettering Cancer Center, New York, USA. Mentor: Maria Jasin.
- 1999, Short Term Mobility Fellowship from the National Research Center (CNR) of Italy, at University of California UC Davis, USA. Mentor: Richard Nuccitelli.

### **Awards:**

2008 - Research prize Award from the Department of Public Health and Cell Biology, University of Rome Tor Vergata (code 020902081).

*Il sottoscritto, consapevole delle sanzioni previste dal codice penale, e dalle leggi speciali nei confronti di chiunque rilasci dichiarazioni mendaci, consapevole altresì della possibilità di decadere dai benefici conseguenti a eventuali provvedimenti emanati sulla base di dichiarazione non veritiera dichiara:*

- *che quanto dichiarato nella domanda e nel curriculum vitae corrisponde a verità - art. 46, D.P.R. 445/2000;*
- *che le copie di documenti, titoli e pubblicazioni allegati alla presente domanda sono conformi agli originali – art. 47, D.P.R. 445/2000.*