

**Curriculum vitae**

Place and Date of Birth      Milan (Italy)    January 20, 1971  
 Nationality                      Italian

**CURRENT POSITION**

2016 – pres.      Tenured Associate Professor, Department of Experimental Oncology, European Institute of Oncology, Milan (Italy)

**PREVIOUS POSITIONS**

2009 – 2015      Assistant Professor, Department of Experimental Oncology, European Institute of Oncology, Milan (Italy)

2005 – 2008      Staff Scientist. Department of Experimental Oncology, European Institute of Oncology, Milan (Italy)

2001 – 2004      Post-doctoral fellow. Department of Experimental Oncology, European Institute of Oncology, Milan (Italy).  
 Advisor: Prof. Andrea Musacchio

**EDUCATION**

1996 – 2000      PhD in Crystallography: Birkbeck College, University of London.  
 Advisor: Dr. Paul A. Tucker. Training at the EMBL, Heidelberg and Hamburg (Germany)

1990 –1995      Degree in Physics: University of Milan (*summa cum laude*) Milan (Italy)  
 Advisor: Prof. Giancarlo Baldini

**FELLOWSHIPS and GRANTS**

2017 - 2020      Principal Investigator Grant of AIRC, the Italian Association for Cancer Research  
 2016 - 2020      Principal Investigator Grant of the Italian Ministry of Health  
 2013 - 2015      Principal Investigator Grant of AIRC, the Italian Association for Cancer Research  
 2009 - 2015      Young Investigator of the Italian Ministry of Health  
 2009 - 2012      Principal Investigator Grant of AIRC, the Italian Association for Cancer Research  
 2002 - 2004      Post-doctoral fellow of FIRG  
 2003              Short Term EMBO Fellow  
 1996 - 2000      EMBL doctoral fellow

**HONOURS and COMMITTEES**

2016 – pres.      MIUR (Ministry of Schools, University and Research) Habilitation for Full Professor in Biochemistry.  
 2016 – pres.      Member of the User Panel of the Horizon-2020 EU program for infrastructures iNext.  
 2014 – pres.      MIUR (Ministry of Schools, University and Research) Habilitation for Associate Professor of Biochemistry, Molecular Biology and Applied Physics.  
 2014 – pres.      Representative for Structural Biology at User Organization Committee of the European Synchrotron Radiation Facility, Grenoble (France).  
 2011 – pres.      Italian Coordinator of the EU Program BioStruct-X (FP7/2007-2013).

- 2011- 2014      Coordinator of the Italian Block Allocation Group to the European Synchrotron Radiation Facility (ESRF), Grenoble (France).
- 2007 - 2010      Scientific supervisor of the Crystallization Facility, Cogentech, Milan (Italy).

### TEACHING AND FACULTY ACTIVITIES

- 2013 – pres.      Organizer of the Biochemistry Course at the European School of Molecular Medicine (SEMM), Milan (It)
- 2009 – pres.      Organizer of the Structural Biology Course at the SEMM School, Milan (It)
- 2009 – pres.      Lecturer at the course of Cell Biology of the SEMM School, Milan (It)
10. 03. 2014      Lecturer at the PhD program of the Istituto di Candiolo, Torino (It)
05. 11. 2012      Lecturer at the course *Mitosis: Experimental approaches and model systems* CNR Roma (It)
- 2009 – pres.      Direct supervisor of 5 Post-doctoral fellows, 6 PhD students, 1 technicians, and 4 undergraduate students (graduated with highest marks) working in my laboratory at the European Institute of Oncology.
- 2009 – pres.      Co-supervisor and internal examiner for the Molecular Oncology program of the SEMM School, Milan (It), the Ecole Normale Supérieure, Paris (Fr), King's College London and the CNR.

### PEER-REVIEWING

- 2009 - pres.      Referee for peer-reviewed journals including EMBO Rep.; Nature Communications, Journal of Cell Biology, eLife, Journal of Biological Chemistry, NAR, Journal of Molecular Biology, Acta Crystallographica D, Scientific Reports, International Journal of Molecular Sciences. Eur. J. of Med Chem.
- 2009 – pres.      Referee for funding agencies: ERC European Research Council; MRC Career Developmental panel (Uk); the Hungarian Scientific Research found OTKA (Hu).

### INVITED PRESENTATIONS

- 26-28.6.2019      Invited seminar at the Biannual iNEXT Meeting, Lund (Se)
- 26-31.5.2019      Invited seminar EMBO Workshop *Cell Polarity and Membrane Dynamics*, Saint Felieux (Es)
- 21.05.2018      Invited seminar at the CNR, Roma (It)
- 3-4.05.2018      Invited speaker at the *EMBL in Italy*, IFOM, Milan (It)
- 6.03.208          Invited speaker at the University of Geneva (Ch)
- 6.12.2017      Invited speaker at the Graduate Symposium, Max Planck for Biology of Aging, Köln (De)
- 28-29.06.2017      Invited speaker at the Italian Association of Crystallography Congress, Perugia (It)
- 5-12.05.2017      Invited speaker at the GRC Epithelial Differentiation & Keratinization, Il Ciocco (It)
- 14-15.11.2016      Invited speaker at the *Mechanisms of Asymmetric Cell Divisions*, Royal Society (Uk)
- 24.05.2016      Invited seminar at the University of Kiel (De)
- 15.1.2016      Invited seminar at the University of Turin (It)
- 30.09.2015      Invited seminar at the CECAD, University of Cologne (De)
- 18.09.2015      Invited speaker at the Italian Association of Crystallography Congress, Vercelli (It)
- 18.3.2015      Invited seminar at the IRIBHM, Brussel (Be)
- 10.12.2014      Invited seminar at the Institut de Biologie Valrose, Nice (Fr)
- 1.12.2014      Invited seminar at the EPFL, Lausanne (CH)
- 17.09.2014      Invited seminar at the IRB, Barcelona (Es)
- 5-12.8.2014      Chair of the Symposium *Enzymes and Molecular Machines* at the IUCr, Montreal (Ca)
- 16.06.2014      Invited seminar at the University of Padova (It)
- 28-31.5.2014      EMBO Workshop *Microtubules: Structure, regulation and functions*, Heidelberg (de)
- 18-21.5.2014      EMBO Symposium *Molecular Machines*, Heidelberg (De)
- 10.3.2014      Invited seminar at Istituto di Candiolo, Torino (It)
- 22.11.2013      Invited seminar at LRI - Cancer Research UK, London (Uk)
- 24.10.2013      Invited seminar at the Institute Pasteur, Paris (Fr)
- 12-14.11.2012      Normal and Tumor Stem cells. Barcelona BioMed Conferences (Es)

- 5-7.11.2012 Mitosis: Experimental approaches and model systems, Roma (It)  
 13.4.2012 Invited seminar at the Max Planck for Molecular Physiology, Dortmund (De)  
 1. 3. 2012 Invited seminar at the Max F. Perutz Laboratories, University of Vienna (Au)  
 5. 9. 2011 Invited seminar at the Max Planck of Molecular Cell Biology and Genetics, Dresden (De)  
 26. 5. 2011 Invited seminar at the University of Konstanz (De)  
 25. 11. 2010 Invited seminar at the IECB, Bordeaux (Fr)  
 17. 6. 2010 Invited seminar at the Max Planck Institute for Biochemistry, Muenich (De)  
 23-25. 6. 2008 Structure and mechanisms of essential complexes for cell survival. CNIO-Madrid (Es)  
 16-20. 6. 2007 Chromosome Segregation and Aneuploidy Workshop. Naantali (Fi)  
 25-30. 6. 2006 Gordon Research Conference: Three-dimensional Electron Microscopy. Il Ciocco, (It).  
 21-25. 5. 2006 8<sup>th</sup> International School on the Crystallography of Biological Macromolecules. Como (It).  
 15-20. 1. 2006 Second EuCheMS School of Protein Chemistry. Alba di Canazei (It).

## COMPLETE BIBLIOGRAPHY

### Publications

1. Pirovano L, Culurgioni S, Carminati M, Alfieri A, Monzani S, Cecatiello V, Gaddoni C, Rizzelli F, Foadi J, Pasqualato S, **Mapelli M** (2019) Hexameric NuMA:LGN structures promote multivalent interactions required for planar epithelial divisions. **Nat. Comm.** *10*, doi:10.1038/s41467-019-09999-w
2. Culurgioni S., Mari S., Bonetti P., Gallini S., Bonetto G., Brennich M., Round A., Nicassio F., **Mapelli M.** (2018) Insc:LGN tetramers promote asymmetric divisions of mammary stem cells. **Nat. Commun.** *9*, doi: 10.1038/s41467-018-03343-4.
3. Colaluca I.N., Basile A., Freiburger L., D'Uva V., Disalvatore D., Vecchi M., Confalonieri S., Tosoni D., Cecatiello V., Malabarba M.G., Yang C.J., Kainosho M., Sattler M., **Mapelli M.**, Pece S., Di Fiore PP. (2018) A Numb-Mdm2 fuzzy complex reveals an isoform-specific involvement of Numb in breast cancer. **J Cell Biol.**, *217*, 745-762.
4. Saadaoui M., Konno D., Loulier K., Goïame R., Jadhav V., **Mapelli M.**, Matsuzaki F., Morin X. (2017) Loss of the canonical spindle orientation function in the Pins/LGN homolog AGS3. **EMBO Rep.**, *18*, 1509-1520.
5. Wollscheid H.P., Biancospino M., He F., Magistrati E., Molteni E., Lupia M., Soffientini P., Rottner K., Cavallaro U., Pozzoli U., **Mapelli M.**, Walters K.J., Polo S. (2016) Diverse functions of myosin VI elucidated by an isoform-specific  $\alpha$ -helix domain. **Nat. Struct. Mol. Biol.** *23*, 300-308.
6. Carminati M, Cecatiello V, **Mapelli M.** (2016) Crystallization and X-ray diffraction of LGN in complex with the actin-binding protein afadin. **Acta Crystallogr. F**, *72*, 145-51.
7. Gallini S., Carminati M., De Mattia F., Pirovano L., Martini E., Oldani A., Asteriti I.A., Guarguaglini G, **Mapelli M.** (2016) NuMA phosphorylation orchestrates spindle orientation. **Current Biol.**, *26*, 458-69.
8. Carminati M., Gallini S., Pirovano L., Alfieri A., Bisi S. and **Mapelli M.** (2016) Concomitant binding of Afadin to LGN and F-actin directs planar spindle orientation. **Nat. Struct. Mol. Biol.**, *23*,155-63.
9. Fornasa G, Tsilingiri K, Caprioli F, Botti F, **Mapelli M**, Meller S, Kislat A, Homey B, Di Sabatino A, Sonzogni A, Viale G, Diaferia G, Gori A, Longhi R, Penna G, Rescigno M. Dichotomy of short and long thymic stromal lymphopoietin isoforms in inflammatory disorders of the bowel and skin. (2015) **J. Allergy Clin. Immunol.** *136*, 413-422.
10. Andersen D.S., Colombani J., Palmerini V., Chakrabandhu K., Röthlisberger M., Toggweiler J., Basler K., **Mapelli M.**, Hueber A., and Léopold P. (2015) The Drosophila TNF receptor Grindelwald couples loss of cell polarity with neoplastic growth. (2015) **Nature**, *522*, 482-6.
11. Bezil C., Asada N., Ishiguro K., Nakaya T., Parsons K., Pendolino V., Neumayer G., **Mapelli M.**, Nakatani Y., Sanada K., and Nguyen M.D. (2014) p600 regulates spindle orientation in apical neural progenitors and contributes to neurogenesis in the developing neocortex, **Biology Open.** *3*, 475-85.
12. Migliori V., Muller J., Phalke S., Low D., Bezzi M., Mok W.C., Sahu S.K., Gunaratne J., Capasso P., Bassi B., Cecatiello V., De Marco A., Blackstock W., Kuznetsov V., Amati B., **Mapelli M.**, Guccione E. (2012) Symmetric dimethylation of H3R2 is a newly identified histone mark that supports euchromatin maintenance. **Nat. Struct. Mol. Biol.** *19*, 136-144.

13. Culurgioni S., Alfieri A., Pendolino V., Laddomada F. and **Mapelli M.** (2011) Inscuteable and NuMA proteins bind competitively to Leu-Gly-Asn repeat-enriched protein (LGN) during asymmetric cell divisions. **P.N.A.S.**, *108*, 20998-1003.
14. Simonetta M., Manzoni R., Mosca R., **Mapelli M.**, Massimiliano L., Vink M., Novak B., Musacchio A. and Ciliberto A. (2009) The influence of catalysis on Mad2 activation dynamics. **PLoS Biology**, *7*, 175-188.
15. Lagace D.C., Benavides D.R., Kansy J.W., **Mapelli M.**, Greengard P., Bibb J.A., Eisch A.J. (2008) Cdk5 is essential for adult hippocampal neurogenesis. **P.N.A.S.**, *105*, 18567-71.
16. **Mapelli M.**, Massimiliano L., Santaguida S. and Musacchio A. (2007) The Mad2 Conformational Dimer: Structure and Implications for the Spindle Assembly Checkpoint. **Cell** *131*, 730-743.
17. Vink M. Simonetta M., Transidico P., Ferrari K., **Mapelli M.**, De Antoni A., Massimiliano L., Ciliberto A., Faretta M., Salmon E.D., Musacchio A. (2006) In vitro FRAP identifies the minimal requirements for Mad2 kinetochore dynamics. **Curr Biol.** *16*, 755-66.
18. **Mapelli M.**, Filipp F.V., Rancati G., Massimiliano L., Nezi L., Stier G., Hagan R.S., Confalonieri S., Piatti S., Sattler M., Musacchio A. (2006) Determinants of conformational dimerization of Mad2 and its inhibition by p31<sup>comet</sup>. **EMBO J.** *25*, 1273-84.
19. Penengo\* L., **Mapelli\* M.**, Murachelli\* A.G., Confalonieri S., Magri L., Musacchio A., Di Fiore P.P., Polo S., Schneider T.R. (2006) Crystal structure of the ubiquitin binding domains of rabex-5 reveals two modes of interaction with ubiquitin. **Cell** *124*, 1183-95.
20. Sessa\* F., **Mapelli\* M.**, Ciferri C., Tarricone C., Areces L.B., Schneider T.R., Stukenberg T.P. and Musacchio A. (2005) Mechanism of Aurora-B activation by INCENP and inhibition by Hesperadin. **Mol. Cell** *18*, 379-91.
21. **Mapelli M.**, Massimiliano L., Crovace C., Seeliger M.A., Tsai L.H., Meijer L. and Musacchio A. (2005) Mechanism of CDK5/p25 binding by CDK inhibitors. **J. Med. Chem.** *48*, 671-679. (*107 cit.*)
22. **Mapelli\* M.**, Panjekar\* S. and Tucker P. (2005) The crystal structure of the HSV-1 ssDNA binding protein suggests the structural basis for flexible, cooperative single-stranded DNA. **J. Biol. Chem.** *280*, 2990-97.
23. De Antoni A., Pearson C.G., Cimini D., Canman J.C., Sala V., Nezi L., **Mapelli M.**, Sironi L., Faretta M., Salmon E.D., Musacchio A. (2005) The Mad1/Mad2 complex as a template for Mad2 activation in the spindle assembly checkpoint. **Curr. Biol.** *15*, 214-25.
24. Lacy E.R., Wang Y., Post J., Nourse A., Webb W., **Mapelli M.**, Musacchio A., Siuzdak G., Kriwacki R.W. (2005) Molecular basis for the specificity of p27 toward cyclin-dependent kinases that regulate cell division. **J Mol Biol.** *349*, 64-73.
25. Ahn J.S., Radhakrishnan M.L., **Mapelli M.**, Choi S., Tidor B., Cuny G.D., Musacchio A., Yeh L.A., Kosik K.S. (2005) Defining Cdk5 ligand chemical space with small molecule inhibitors of tau phosphorylation. **J Mol Biol.** *349*, 764-73.
26. Ahn J.S., Musacchio A., **Mapelli M.**, Ni J., Scinto L., Stein R., Kosik K.S., Yeh L.A. (2004) Development of an assay to screen for inhibitors of tau phosphorylation by cdk5. **J. Biomol. Screen.** *9*, 122-31.
27. Sironi L., **Mapelli M.**, Knapp S., De Antoni A., Jeang K.T. and Musacchio A. (2002). Crystal structure of the tetrameric Mad1-Mad2 core complex: implications of a safety belt binding mechanism for the spindle checkpoint. **EMBO J.** *21*, 2496-2506.
28. **Mapelli M.**, Muehleisen M., van der Zandt H., Persico G. and Tucker P.A. (2000). The 60-residue C-terminal region of the single-stranded DNA binding protein of Herpes Simplex Virus type 1 is required for co-operative DNA binding. **J. Virology** *74*, 8812-22.
29. **Mapelli M.** and Tucker P.A. (1999). Crystallisation and preliminary x-ray studies on the Herpes Simplex Virus 1 single-stranded DNA binding protein. **J. Struct. Biol.** *128*, 219-222.

### Research monographs

1. Santoro A, Vlachou T, Carminati M, Pelicci PG, **Mapelli M.** (2016) Molecular mechanisms of asymmetric divisions in mammary stem cells. **EMBO Rep.**, *17*, 1700-1720.
2. Culurgioni S., **Mapelli M.** (2013) Going vertical: functional role and working principles of the protein Inscuteable in Asymmetric Cell Divisions. **Cellular and Molecular Life Sciences**, *70*, 4039-46.

3. **Mapelli M.**, Gonzalez C. (2012) On the inscrutable role of Inscuteable: structural bases for the competitive binding of NuMA and Inscuteable to LGN. **Open Biology**, 2.
4. Migliori V., **Mapelli M.**<sup>§</sup>, Guccione E. (2012) On WD40 proteins: propelling our knowledge of transcriptional control? **Epigenetics**, 7, 815-822.
5. **Mapelli M.** and Musacchio A. (2007) MAD contorsions: conformational dimerization boosts spindle checkpoint signaling. **Curr. Opin. Struct. Biol.** 17, 716-725.
6. **Mapelli M.** and Musacchio A. (2003) The structural perspective on CDK5. **Neurosignals** 12, 164-172.