

Fabrizio Martino
MPI-CBG
Max Planck Institute of
Molecular Cell Biology and Genetics
Dresden

Education and Scientific Career

- 2002** **Master in Biology,**
Dept. of Genetics and Microbiology, Univ. of Pavia, Italy.
Supervisor: **Prof. Elena Raimondi**
- 2003** **Master in Molecular Biology** (Certificate);
Dept. of Molecular Biology, Univ. of Geneva, Switzerland.
Supervisor: **Prof. Susan Gasser**
- 2008** **PhD in Molecular Biology**
Dept. of Molecular Biology, Univ. of Geneva, Switzerland.
Supervisor: **Prof. Susan Gasser** (moved to FMI, Basel, in 2005)
- 2008-2014** **Postdoctoral training**
MRC, Laboratory of Molecular Biology, Cambridge, UK.
Mentors: **Dr. Daniela Rhodes, Dr. Kiyoshi Nagai**
- 2014-2015** **Postdoctoral training**
CIB/CSIC, Madrid, Spain
Mentor: Prof. Oscar Llorca
- 2015-2018** **Independent Investigator**
CIB/CSIC, Madrid, Spain
supported by Grant from the Spanish Ministry of Science
Mentor: **DR. Maria Cristina Vega**
- 2018-2020** **Senior Laboratory Research Scientist**
Alessandro Costa's group, Crick Institute, London
- 2020-present** **Senior Scientist**
Gaia Pigino's group, MPI-CBG Dresden

Fellowships and Grants

- 2005** January **EMBO short term** fellowship
- 2008** June **Swiss National Fund** postdoctoral fellowship
- 2009** June **EMBO long term** postdoctoral fellowship
- 2011** October **Marie Curie FP7** postdoctoral fellowship
- 2015** October **Grant** for young scientist Spanish Ministry of Science

Supervision of graduate students

- 2010-2014** **Supervision of Nadia Arnaudo's PhD**
MRC, Laboratory of Molecular Biology, Cambridge,

Courses

- 2004**, Spring **BIL course** on:
Cell Proliferation, Growth and Death at ISREC, Switzerland.
- 2006**, May **EMBO practical course** on:
"Structural characterization of macromolecular complexes".
- 2009**, October **EMBO practical course** on:
"The combination of EM and X-ray crystallography for the structure determination of large biological complexes".
- 2010**, August **EMBO practical course** on:
"Cryo-Electron Microscopy and 3D Image Processing".
- 2012**, October **the 106th Boehringer Ingelheim International Titisee Conference,**
"Reconstituting Chromatin: From Self-assembly to Self-organization"
Invited speaker

Keywords

Epigenetics; Chromatin and Chromosome biology; DNA replication. DNA transcription. DNA damage response; Cilia and Intraflagellar Transport.
Structural Biology; X-ray crystallography; Single particle Electron Microscopy; Electron tomography; Atomic modeling of maps generated by X-ray crystallography or EM.
Biochemistry; Production of multi-subunit protein complexes in bacteria, yeast, insect cells, *Clamydomonas*, mammalian and DT40 cells; Purification of recombinant and native protein complexes by chromatography and matrix-free approaches; biochemical and biophysical characterization of multi-subunit protein and protein-nucleic acid complexes;
Synthetic Biology; Genetically encoded incorporation of post-translational modifications into proteins and chromatin;
Fluorescent wide field microscopy; Basic operations of TIRF microscopy.
Laboratory management, Project management.

List of PDB/EMDB entries

LD9

Crystal structure of the N-terminally acetylated BAH domain of Sir3 bound to the nucleosome core particle. N.Arnaudo, I.S.Fernandez, S.H.Mc Laughlin, S.Y. Pew-Chew, D.Rhodes, F. Martino

6FO1

Human R2TP subcomplex containing 1 RUVBL1-RUVBL2 hexamer bound to 1 RBD domain from RPAP3. Martino F, H. Munoz-Hernandez, C.F. Rodriguez, L.H. Pearl, O.Llorca.

EMDB-4287

Human R2TP subcomplex containing 1 RUVBL1-RUVBL2 hexamer bound to 1 RBD domain from RPAP3. Martino F, Munoz-Hernandez H, Rodriguez CF, Pearl LH, Llorca O

EMDB-4289

Human R2TP complex-C3symmetry. Martino F, Munoz-Hernandez H, Rodriguez CF, Pearl LH, Llorca O

EMDB-4785-4788

D. melanogaster CMG-DNA with ATP. Eickhoff P, Martino F, Locke J, Nans A, Costa A

Publication List

“A different twist on centromeric chromatin”

Martino F Costa A.

Preview article for Structure 2020

“Molecular Basis for ATP-Hydrolysis-Driven DNA Translocation by the CMG Helicase of the Eukaryotic Replisome”. Eickhoff P, Kose HB, Martino F, Petojevic T, Abid Ali F, Locke J, Tamberg N, Nans A, Berger JM, Botchan MR, Yardimci H, Costa A.

Cell Rep. 2019

EMDB-4785-4788

“RPAP3 provides a flexible scaffold for coupling HSP90 to the human R2TP co-chaperone complex”. Martino F, Pal M, Muñoz-Hernández H, Rodríguez CF, Núñez-Ramírez R, Gil-Carton D, Degliesposti G, Skehel JM, Roe SM, Prodromou C, Pearl LH, Llorca O.

Nat Communications 2018

PDB ID 6FO1, EMD 4287 4589

“Cryo electron microscopy in drug discovery”

Chapter for the book: “Biophysical techniques in drug discovery” from the British Royal Society of Chemistry.

RSC publishing group (2017)

“N-terminal acetylation of Sir3 stabilizes its binding to the nucleosome core particle”.

Arnaudo N, Fernández IS, McLaughlin SH, Peak-Chew SY, Rhodes D, Martino F*.

**Last and Corresponding author.*

Nat Struct Mol Biol. (2013)

PDB ID 4LD9

“Reconstitution of yeast silent chromatin: multiple contact sites and O-AADPR binding load SIR complexes onto nucleosomes in vitro”. Martino F, Kueng S, Robinson JP, Tsai M, Van Leeuwen F, Ziegler M, Rhodes D, Gasser SM.

Molecular Cell (2009).

“A homotrimer-heterotrimer switch in Sir2 structure differentiates rDNA and telomeric silencing”. Cubizolles F, Martino F, Perrod S & Gasser SM.

Molecular Cell. (2006).

“30 nm Chromatin Fibre Decompaction Requires both H4-K16 Acetylation and Linker Histone Eviction”. Robinson PJJ, An W, Routh A, Martino F, Chapman L, Roeder RG & Rhodes D.

Journal Molecular Biology_(2008).

“A dual role of H4K16 acetylation in the establishment of yeast silent chromatin”. Oppikofer M, Kueng S, Martino F, Soeroes S, Hancock SM, Chin JW, Fischle W, Gasser SM.

EMBO J (2011)

“Structural and functional characterization of a cell cycle associated HDAC1/2 complex reveals the structural basis for complex assembly and nucleosome targeting.” Itoh T, Fairall L, Muskett FW, Milano CP, Watson PJ, Arnaudo N, Saleh A, Millard CJ, El-Mezgueldi M, Martino F, Schwabe JW.

Nucleic Acids Res. (2015)

“Structure and Assembly of the PI3K-like Protein Kinases (PIKKs) Revealed by Electron Microscopy”. Angel Rivera-Calzada, Andrés López-Perrote, Roberto Melero, Jasminka Boskovic, Hugo Muñoz-Hernández, Fabrizio Martino, Oscar Llorca.

AIMS Biophysics (2015)