

## Ana Pombo

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### Curriculum vitae

Since 2013	Full professor (W3), Institute of Biology, Humboldt-Universität zu Berlin
Since 2013	Research group leader (tenured), BIMSB at the MDC, Berlin
2012 – 2015	Professor in Cell Biology, Institute of Clinical Sciences (ICS), Imperial College London, UK
2012	Chair, Integrative Biology Section, Medical Research Council (MRC), London Institute for Molecular Medicine, UK
2011 – 2012	Honorary professor in Cell Biology, Imperial College London, UK
2010 – 2012	Joint head, Molecular Sciences, ICS, Imperial College, London, UK
2010 – 2011	Deputy chair, Epigenetics Section, MRC, London Institute for Molecular Medicine, UK
2008 – 2013	Program leader, MRC, London Institute for Molecular Medicine, UK
2007 – 2011	Honorary reader in Cell Biology, Clinical Sciences, Imperial College London, UK
2002 – 2008	Program leader, MRC, London Institute for Molecular Medicine, UK
2000 – 2002	Research group leader, MRC, London Institute for Molecular Medicine, UK
1998 – 2000	Postdoctoral fellow, Sir William Dunn School of Pathology, University of Oxford, UK
1994 – 1998	PhD student, Sir William Dunn School of Pathology, University of Oxford, UK

### Research fields

Our group works on epigenetic regulation and 3D genome architecture in embryonic stem cells, neuronal precursor cells and neurons, on the following major topics:

- Mechanisms of gene silencing, poising, and activation, focused on Polycomb repression
- Long-range gene regulation through chromatin contacts, enhancer-promoter contacts
- Novel technologies for mapping chromatin contacts and their application to mapping long-range gene regulation in neuronal subtypes

### Activities in the scientific community, honors, awards

present	Member, editorial board, Journal Cell Biology, Molecular and Cellular Biology, Epigenetics, Nucleus, Epigenetics and Chromatin
Since 2015	4D Nucleome consortium (Co-PI), National Institutes of Health (NIH), US
Since 2014	Collaborative Research Grant (Co-PI), Berlin Institute of Health (BIH)
2012 – 2014	Committee member, British Cell Biology Society, UK
Since 2011	Collaborator, FANTOM5 consortium, RIKEN Omics Science Center, JP
2011 – 2014	Cardiovascular Stem Cell Strategic Development Grant (Co-PI), MRC and British Heart Foundation, UK
2009 – 2012	Member, International Training Network, European Commission
2007	Robert Feulgen Prize, Society for Histochemistry
1998 – 2002	Royal Society Dorothy Hodgkin Fellowship, UK
1997 – 2000	Hayward Junior Research Fellowship, Oriel College, Oxford, UK
1994 – 1997	PhD scholarship, Junta Nacional para a Investigação Científica e Tecnológica, PT

## Selected publications

- Ferrai C, Torlai Triglia E, Risner-Janiczek JR, Rito T, Rackham OJ, de Santiago I, Kukalev A, Nicodemi M, Akalin A, Li M, Ungless MA\*, Pombo A\*. RNA polymerase II primes Polycomb-repressed developmental genes throughout terminal neuronal differentiation. *Mol Syst Biol* 2017; 13:946 | \*corresponding authors
- Barbieri M, Xie SQ, Torlai Triglia E, Chiariello AM, Bianco S, de Santiago I, Branco MR, Rueda D, Nicodemi M\*, Pombo A\*. Active and poised promoter states drive folding of the extended HoxB locus in mouse embryonic stem cells. *Nat Struct Mol Biol* 2017; 24:515-524 | \*corresponding authors
- Beagrie RA, Scialdone A, Schueler M, Kraemer DC, Chotalia M, Xie SQ, Barbieri M, de Santiago I, Lavitas LM, Branco MR, Fraser J, Dostie J, Game L, Dillon N, Edwards PA, Nicodemi M, Pombo A. Complex multi-enhancer contacts captured by genome architecture mapping. *Nature* 2017; 543:519-524 | \*corresponding authors
- Franke M, Ibrahim DM, Andrey G, Schwarzer W, Heinrich V, Schopflin R, Kraft K, Kempfer R, Jerkovic I, Chan WL, Spielmann M, Timmermann B, Wittler L, Kurth I, Cambiaso P, Zuffardi O, Houge G, Lambie L, Brancati F, Pombo A, Vingron M, Spitz F, Mundlos S. Formation of new chromatin domains determines pathogenicity of genomic duplications. *Nature* 2016; 538:265-269
- Beagrie RA, Pombo A. Gene activation by metazoan enhancers: Diverse mechanisms stimulate distinct steps of transcription. *Bioessays* 2016; 38:881-893
- Pombo A, Dillon N. Three-dimensional genome architecture: players and mechanisms. *Nat Rev Mol Cell Biol* 2015; 16:245-257
- Fraser J, Ferrai C, Chiariello AM, Schueler M, Rito T, Laudanno G, Barbieri M, Moore BL, Kraemer DC, Aitken S, Xie SQ, Morris KJ, Itoh M, Kawaji H, Jaeger I, Hayashizaki Y, Carninci P, Forrest AR, Consortium F, Semple CA, Dostie J, Pombo A\*, Nicodemi M.\* Hierarchical folding and reorganization of chromosomes are linked to transcriptional changes in cellular differentiation. *Mol Syst Biol* 2015; 11:852 | \*corresponding authors
- Dias JD, Rito T, Torlai Triglia E, Kukalev A, Ferrai C, Chotalia M, Brookes E, Kimura H\*, Pombo A\*. Methylation of RNA polymerase II non-consensus Lysine residues marks early transcription in mammalian cells. *Elife* 2015; 4 | \*corresponding authors
- Brookes E, de Santiago I, Hebenstreit D, Morris KJ, Carroll T, Xie SQ, Stock JK, Heidemann M, Eick D, Nozaki N, Kimura H, Ragoussis J, Teichmann SA, Pombo A. Polycomb associates genome-wide with a specific RNA polymerase II variant, and regulates metabolic genes in ESCs. *Cell Stem Cell* 2012; 10:157-170
- Barbieri M, Chotalia M, Fraser J, Lavitas LM, Dostie J, Pombo A\*, Nicodemi M\*. Complexity of chromatin folding is captured by the strings and binders switch model. *Proc Natl Acad Sci USA* 2012; 109:16173-16178 | \*corresponding authors