

BIOSKETCH

Diego Pasini was born in 1977 in Milan. He graduated from the University of Milan at the Faculty of Biological Sciences in 2002 and he joined the European Institute of Oncology (IEO) first as research assistant and then as a PhD student (Open University, London) in the laboratory of Prof. Kristian Helin at IEO. When Prof. Helin moved to Denmark to assume the direction of the new Biotech Research and Innovation Center (BRIC) of the University of Copenhagen, Dr Pasini followed him in his new laboratory where he obtained his Ph.D. in 2006. Since then, he continued his collaboration in the Helin's laboratory first as post-doctorate and then as an assistant professor of BRIC. In 2010 he moved back to Italy to start his independent laboratory as junior PI at the department of experimental oncology of the IEO. Since January 2015 he became tenured PI at IEO and was elected EMBO Young Investigator. In 2017 he was awarded of an ERC Consolidator grant and since March 2018 he became associate professor at the department of health sciences of the University of Milan. He is married since 2003 and he has three children.

PERSONAL INFORMATION

Gender: male

Place and birth date: Milano (Italia), 21/07/1977

Nationality: Italian

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EDUCATION

February 2002 Master Degree in Biological Sciences at the Università degli Studi di Milano.
Grade 110/110 *cum laude*.

July 2006 PhD at The Open University, London.

CURRENT POSITIONS

2018-present Associate Professor of Molecular Biology at the Department of Health Sciences of the University of Milan (Milan, Italy).

2015-present Tenured Group Leader at the Department of Experimental oncology of the European Institute of Oncology (Milan, Italy).

PREVIOUS POSITIONS

2001-2002 Undergraduate student at the European Institute of Oncology (Milan, Italy).

2002-2004 Ph.D. student at the European Institute of Oncology (Milan, Italy).

2005-2006 Ph.D. student at BRIC, Institute of the Copenhagen University (Copenhagen, Denmark).

2006-2007 Post-doctorate at BRIC, Institute of the Copenhagen University (Copenhagen, Denmark).

2007-2009 Assistant Professor at BRIC, Institute of the Copenhagen University (Copenhagen, Denmark).

2010-2014 Junior Group Leader at the European Institute of Oncology (Milan, Italy).

FELLOWSHIPS, GRANTS and HONOURS

2004 – 2004 Fellow of FIRC, the Italian Association for Cancer Research

2007 – 2009 Fellow of the Danish Medical Research Council

2010 – 2014 Start-UP unit of AIRC, the Italian Association of Cancer Research

2011 – 2014 Young Investigator Grant of the Italian Ministry of Health

2014 – 2016 Young Investigator Grant of the Umberto Veronesi Foundation

2014 – 2017 Young Investigator Grant of the Italian Ministry of Health

2015 – 2017 Investigator Grant of AIRC, the Italian Association of Cancer Research

2015 – 2017 Elected member of the EMBO Young Investigator Programme

2017 – 2022 ERC Consolidator Grant

TEACHING AND LECTURES

2010 – present Assistant Professor at the European School of Molecular Medicine SEMM, Milan (Italy)

2011 Lecturer at the Ph.D. school of San Raffaele Scientific Institute, Milan (Italy)

2011 Lecturer at NOVARTIS, Basel, Switzerland.
2012 Lecturer at the Ph.D. program of the University of Turin, Italy
2012 Lecturer for the Stem Cell Research Italy (SRC Italy) association, Italy
2014 Lecturer at INVENTIVA, Dijon, France
2014 Lecturer at the Smurfit Institute of Genetics of Trinity College Dublin, Dublin, Ireland
2014 Lecturer at the Neurological Institute Carlo Besta, Milan, Italy
2015 Lecturer at the Marburg University, Marburg, Germany
2016 Lecturer at the National Institute of Molecular Genetics (INGM), Milan, Italy
2016 Lecturer at the Centre for Genomic Regulation (CRG), Barcelona, Spain
2016 Lecturer at the Institute for Research in Biomedicine (IRB), Barcelona, Spain
2016 Lecture at the Gurdon Institute, Cambridge, United Kingdom
2016 Lecturer at the Max Planck Institute of Immunobiology and Epigenetics, Freiburg, Germany
2017 Lecturer at the Institute of Genetics and Biophysics, Naples, Italy
2018 Lecturer at TIGEM, the Telethon institute for Telethon Institute of Genetics and Medicine, Pozzuoli, Italy

NATIONAL SCIENTIFIC QUALIFICATION (ASN)

Associate professor, valid from 2014 to 2020:

05/E1-Biochimica Generale e Biochimica Clinica
05/E2-Biologia Molecolare
05/F1-Biologia Applicata
05/H2-Istologia
05/I1-Genetica e Microbiologia
06/A1-Genetica Medica

Full professor, valid from 2016 to 2022

05/E1-Biochimica Generale
05/E2-Biologia Molecolare
05/F1-Biologia Applicata
05/I1-Genetica
06/A1-Genetica Medica

CONFERENCES, WORKSHOPS and SYMPOSIA

2011 IMPPC Conference 2011 on Signaling to Chromatin in Differentiation and Cancer, Barcelona , Spain. invited
2011 Chromatin & Epigenetics Workshop, Milan, Italy. invited
2012 Chromosomes, Stem Cells and Disease, Barcelona, Spain. selected
2013 Abcam meeting on Chromatin, Replication and Chromosomal Stability, Copenhagen, Denmark. selected
2014 Chromatin and Epigenetics symposium, Barcelona, Spain. invited
2015 Keystone meeting on Epigenetics and Cancer, Keystone, Colorado (USA) selected
2015 EMBO YIP Cancer Sectoral meeting, Prague (Czech Republic) invited
2015 Cell symposia on Stem Cell Epigenetics, Sitges, (Spain) selected
2016 Workshop: "Folding Chromatin in Three dimensions", Milan, (Italy) invited
2016 Abcam conference "Stem cell and high order chromatin structure", Taormina, (Italy) invited
2017 EMBO YIP Annual Meeting, EMBO, Heidelberg (Germany) invited
2017 euLife Meeting on Homeostasis, MDC, Berlin (Germany) invited
2017 IMG Ph.D. Conference, IMG, Prague, (Czech Republic) keynote lecture
2017 Epigenetics and Development Symposia, Naples (Italy) invited
2017 National congress of SIB, the Italian Society of Biochemistry and Molecular Biology, Caserta (Italy) invited
2018 SIBBM Frontiers in Molecular Biology, Rome (Italy) invited

EVALUATION COMMITTEES

2014 – 2017 Scientific evaluation committee of the French National Agency for Research (ANR)
2016 – 2018 Scientific fellowship committee of the Italian Association for Cancer Research (AIRC)

PEER-REVIEWING

Ad hoc referee for peer-review journals: Cell; Cell Death and Differentiation; Cell Research; Cell Stem; Cell; Cellular and Molecular Life Sciences; Cell Reports; EMBO Journal; FEBS Journal; Genome Research; International Journal of Cancer; Molecular and Cellular Biology; Molecular Cell; Nature Communications; Nucleic Acids Research; Oncogene; PlosOne; Proceedings of the National Academy of Sciences; Trends in Cell Biology.

Ad hoc referee for funding agencies such as Swiss Cancer League (Switzerland); Wellbeing For Woman Research (UK); Biotechnology and Biological Sciences Research Council, BBSRC (UK); National Fund for Scientific Research, FNRS (Belgium); French Institute of Health and Medical Research (ISERN).

COLLABORATORS

Dr. Pasini has been directly involved in several collaborative works with high-profile laboratories around the world, generating important scientific publications. This includes the laboratories of Prof. Haruiko Koseki (RIKEN, Japan); Prof. Luciano Di Croce (CRG, Spain); Prof. Anton Wutz (ETH, Switzerland); Dr. Sandra Peiró (IMIM-Hospital del Mar, Spain); Prof. Paul Soloway (Cornell University, USA); Dr. Valerio Orlando (KAUST, Saudi Arabia); Dr. Giovanni Lavorgna and Dr. Andrea Brendolan (HSR, Italy). Prof. Kristian Helin and Dr. Claus Storgaard Sørensen (BRIC, Denmark). Dr. Lazzerini-Denchi (Scripps Research Institute, USA). Dr. Adrian Bracken (Smurfit Institute of Genetics of Trinity College, Ireland). Dr. Wolfgang Fischle (Max Planck Göttingen, Germany). Dr. Joerg Huelsken (EPFL, Switzerland).

SCIENTIFIC PRODUCTION

Dr. Pasini publication records consist of 44 papers in international peer-reviewed journals of which 8 published as first author and 17 as last/corresponding author. Google Scholar aggregation led to the identification of 44 publications with 8411 citations with an average citation per paper of 191 and an h-index of 29.

PEER REVIEWED PUBLICATIONS

- Streubel, G Watson, A. Jammula, SG. Scelfo, A. Fitzpatrick, JD. Oliviero, G. McCole, R. Conway, E. Glancy, E. Negri, GL. Dillon, E. Wynne, K. Pasini, D. Krogan, JN. Bracken, AP. and Cagney, G. The H3K36me2 Methyltransferase Nsd1 Demarcates PRC2-Mediated H3K27me2 and H3K27me3 Domains in Embryonic Stem Cells. *Mol Cell*. *Accepted*.
- Morini MF, Giampietro C, Corada M, Pisati F, Lavarone E, Cunha SI, Conze LL, O'Reilly N, Joshi D, Kjaer S, George R, Nye E, Ma A, Jin J, Mitter R, Lupia M, Cavallaro U, Pasini D, Calado DP, Dejana E, Taddei A. VE-Cadherin-Mediated Epigenetic Regulation of Endothelial Gene Expression. *Circ Res*. 2018 Jan 19;122(2):231-245.
- Streubel G, Fitzpatrick DJ, Oliviero G, Scelfo A, Moran B, Das S, Munawar N, Watson A, Wynne K, Negri GL, Dillon ET, Jammula S, Hokamp K, O'Connor DP, Pasini D, Cagney G, Bracken AP. Fam60a defines a variant Sin3a-Hdac complex in embryonic stem cells required for self-renewal. *EMBO J*. 2017 May 29.
- Gnani D, Romito I, Artuso S, Chierici M, De Stefanis C, Panera N, Crudele A, Ceccarelli S, Carcarino E, D'Oria V, Porru M, Giorda E, Ferrari K, Miele L, Villa E, Balsano C, Pasini D, Furlanello C, Locatelli F, Nobili V, Rota R, Leonetti C, Alisi A. Focal adhesion kinase depletion reduces human hepatocellular carcinoma growth by repressing enhancer of zeste homolog 2. *Cell Death Differ*. 2017 May;24(5):889-902.
- Ferrari KJ, Lavarone E, Pasini D. The Dual Role of EPOP and Elongin BC in Controlling Transcriptional Activity. *Mol Cell*. 2016 Nov 17;64(4):637-638. doi: 10.1016/j.molcel.2016.11.009.
- Chiacchiera F, Pasini D. Control of adult intestinal identity by the Polycomb repressive machinery. *Cell Cycle*. 2016 Nov 15:1-2.
- Rossi A, Ferrari KJ, Piunti A, Jammula S, Chiacchiera F, Mazzearella L, Scelfo A, Pelicci PG and Pasini D. Maintenance of leukemic cell identity by the activity of the Polycomb complex PRC1 in mice.

Science Advances. 2016.

- Jammula S. and Pasini D. EpiMINE, a computational program for mining epigenomic data. *Epigenetics and Chromatin*. 2016
- Chiacchiera F, Rossi A, Jammula S, Zanotti M. and Pasini D. PRC2 preserves intestinal progenitors and restricts secretory lineage commitment. *EMBO J*. 2016.
- Pasini, D* and Di Croce*, L. Emerging roles for Polycomb proteins in cancer. *Current Opinion in Genetics & Development*. 2016.
- Lenti, E. Farinello, D., Yokoyama, K.K. Penkov, D., Castagnaro, L., Lavorgna, G., Wuputra, K., Sandell, L.L., Butler Tjaden, N.N., Bernassola, F., Caridi, N., De Antoni, A., Wagner, M., Kozinc, K., Niederreither, K., Blasi, F., Pasini, D., Majdic, G., Tonon, G., Trainor, P.A. and Brendolan A. TLX1 Controls Retinoic Acid Signaling to Ensure Spleen Development. *Journal of Clinical Investigation*. 2016.
- Chiacchiera, F., Rossi, A., Jammula, S., Piunti A., Scelfo, A., Ordóñez-Morán, P., Huelsken, J., Koseki, H. and Pasini, D. Polycomb Complex PRC1 Preserves Intestinal Stem Cell Identity by Sustaining Wnt/ β Catenin Transcriptional Activity. *Cell Stem Cell*. 2016.
- Pasini, D. Mapping the Function of Polycomb Proteins. *Methods Mol Biol*. 2016.
- Scelfo, A., Piunti, A. and Pasini, D. The controversial role of the Polycomb group proteins in transcription and cancer: how much do we not understand Polycomb proteins? *Febs J*. 2015
- Orfanelli, U., Jachetti, E., Chiacchiera, F., Grioni, M., Brambilla, P., Briganti, A., Freschi, M., Martinelli-Boneschi, F., Doglioni, C., Montorsi, F., Bellone, M., Casari, G., Pasini, D. and Lavorgna, G. Antisense transcription at the TRPM2 locus as a novel prognostic marker and therapeutic target in prostate cancer. *Oncogene*. 2015
- Lavorgna, G.C., F. Briganti, A. Montorsi, F. Pasini, D. Salonia, A. Expression-profiling of apoptosis induced by ablation of the long ncRNA TRPM2-AS in prostate cancer cell. *Genomics Data*. 2015
- Piunti, A., Rossi, A., Cerutti, A., Albert, M., Jammula, S., Scelfo, A., Cedrone, L., Fragola, G., Olsson, L., Koseki, H., Testa, G., Casola, S., Helin, K., d'Adda di Fagagna, F. and Pasini, D. Polycomb proteins control proliferation and transformation independently of cell cycle checkpoints by regulating DNA replication. *Nat Commun*. 2014
- Ferrari, K.J., Scelfo, A., Jammula, S., Cuomo, A., Barozzi, I., Stutzer, A., Fischle, W., Bonaldi, T. and Pasini, D. Polycomb-dependent H3K27me1 and H3K27me2 regulate active transcription and enhancer fidelity. *Mol Cell*. 2014
- Bartocci, C., Diedrich, J.K., Ouzounov, I., Li, J., Piunti, A., Pasini, D., Yates, J.R., 3rd and Lazzarini Denchi, E. Isolation of chromatin from dysfunctional telomeres reveals an important role for Ring1b in NHEJ-mediated chromosome fusions. *Cell Rep*. 2014
- Vella, P., Scelfo, A., Jammula, S., Chiacchiera, F., Williams, K., Cuomo, A., Roberto, A., Christensen, J., Bonaldi, T., Helin, K. and Pasini, D. Tet proteins connect the O-linked N-acetylglucosamine transferase Ogt to chromatin in embryonic stem cells. *Mol Cell*. 2013
- Jung, H.R., Sidoli, S., Haldbo, S., Sprenger, R.R., Schwammle, V., Pasini, D., Helin, K. and Jensen, O.N. Precision mapping of coexisting modifications in histone H3 tails from embryonic stem cells by ETD-MS/MS. *Anal Chem*. 2013
- Ferrari, K.J. and Pasini, D. Regulation and function of DNA and histone methylations. *Curr Pharm Des*. 2013
- Chiacchiera, F., Piunti, A. and Pasini, D. Epigenetic methylations and their connections with metabolism. *Cell Mol Life Sci*. 2013
- Vella, P., Barozzi, I., Cuomo, A., Bonaldi, T. and Pasini, D. Yin Yang 1 extends the Myc-related transcription factors network in embryonic stem cells. *Nucleic Acids Res*. 2012

- Stojic, L., Jasencakova, Z., Prezioso, C., Stutzer, A., Bodega, B., Pasini, D., Klingberg, R., Mozzetta, C., Margueron, R., Puri, P.L., Schwarzer, D., Helin, K., Fischle, W. and Orlando, V. Chromatin regulated interchange between polycomb repressive complex 2 (PRC2)-Ezh2 and PRC2- Ezh1 complexes controls myogenin activation in skeletal muscle cells. *Epigenetics Chromatin*. 2011
- Piunti, A. and Pasini, D. Epigenetic factors in cancer development: polycomb group proteins. *Future Oncol*. 2011
- Pasini, D., Malatesta, M., Jung, H.R., Walfridsson, J., Willer, A., Olsson, L., Skotte, J., Wutz, A., Porse, B., Jensen, O.N. and Helin, K. Characterization of an antagonistic switch between histone H3 lysine 27 methylation and acetylation in the transcriptional regulation of Polycomb group target genes. *Nucleic Acids Res*. 2010
- Pasini, D., Cloos, P.A., Walfridsson, J., Olsson, L., Bukowski, J.P., Johansen, J.V., Bak, M., Tommerup, N., Rappsilber, J. and Helin, K. JARID2 regulates binding of the Polycomb repressive complex 2 to target genes in ES cells. *Nature*. 2010
- Leeb, M., Pasini, D., Novatchkova, M., Jaritz, M., Helin, K. and Wutz, A. Polycomb complexes act redundantly to repress genomic repeats and genes. *Genes Dev*. 2010
- Jung, H.R., Pasini, D., Helin, K. and Jensen, O.N. Quantitative mass spectrometry of histones H3.2 and H3.3 in Suz12-deficient mouse embryonic stem cells reveals distinct, dynamic post-translational modifications at Lys-27 and Lys-36. *Mol Cell Proteomics*. 2010
- Riising, E.M., Boggio, R., Chiocca, S., Helin, K. and Pasini, D. The polycomb repressive complex 2 is a potential target of SUMO modifications. *PLoS One*. 2008
- Pasini, D., Hansen, K.H., Christensen, J., Agger, K., Cloos, P.A. and Helin, K. Coordinated regulation of transcriptional repression by the RBP2 H3K4 demethylase and Polycomb-Repressive Complex 2. *Genes Dev*. 2008
- Pasini, D., Bracken, A.P., Agger, K., Christensen, J., Hansen, K., Cloos, P.A. and Helin, K. Regulation of stem cell differentiation by histone methyltransferases and demethylases. *Cold Spring Harb Symp Quant Biol*. 2008
- Lindroth, A.M., Park, Y.J., McLean, C.M., Dokshin, G.A., Persson, J.M., Herman, H., Pasini, D., Miro, X., Donohoe, M.E., Lee, J.T., Helin, K. and Soloway, P.D. Antagonism between DNA and H3K27 methylation at the imprinted *Rasgrf1* locus. *PLoS Genet*. 2008
- Herranz, N., Pasini, D., Diaz, V.M., Franci, C., Gutierrez, A., Dave, N., Escriva, M., Hernandez-Munoz, I., Di Croce, L., Helin, K., Garcia de Herreros, A. and Peiro, S. Polycomb complex 2 is required for E-cadherin repression by the *Snail1* transcription factor. *Mol Cell Biol*. 2008
- Hansen, K.H., Bracken, A.P., Pasini, D., Dietrich, N., Gehani, S.S., Monrad, A., Rappsilber, J., Lerdrup, M. and Helin, K. A model for transmission of the H3K27me3 epigenetic mark. *Nat Cell Biol*. 2008
- Villa, R., Pasini, D., Gutierrez, A., Morey, L., Occhionorelli, M., Vire, E., Nomdedeu, J.F., Jenuwein, T., Pelicci, P.G., Minucci, S., Fuks, F., Helin, K. and Di Croce, L. Role of the polycomb repressive complex 2 in acute promyelocytic leukemia. *Cancer Cell*. 2007
- Pasini, D., Bracken, A.P., Hansen, J.B., Capillo, M. and Helin, K. The polycomb group protein Suz12 is required for embryonic stem cell differentiation. *Mol Cell Biol*. 2007
- Christensen, J., Agger, K., Cloos, P.A., Pasini, D., Rose, S., Sennels, L., Rappsilber, J., Hansen, K.H., Salcini, A.E. and Helin, K. RBP2 belongs to a family of demethylases, specific for tri- and dimethylated lysine 4 on histone 3. *Cell*. 2007
- Bracken, A.P., Kleine-Kohlbrecher, D., Dietrich, N., Pasini, D., Gargiulo, G., Beekman, C., Theilgaard-Monch, K., Minucci, S., Porse, B.T., Marine, J.C., Hansen, K.H. and Helin, K. The Polycomb group proteins bind throughout the *INK4A-ARF* locus and are disassociated in senescent cells. *Genes Dev*. 2007
- Agger, K., Cloos, P.A., Christensen, J., Pasini, D., Rose, S., Rappsilber, J., Issaeva, I., Canaani, E.,

Salcini, A.E. and Helin, K. UTX and JMJD3 are histone H3K27 demethylases involved in HOX gene regulation and development. *Nature*. 2007

- Bracken, A.P., Dietrich, N., Pasini, D., Hansen, K.H. and Helin, K. Genome-wide mapping of Polycomb target genes unravels their roles in cell fate transitions. *Genes Dev*. 2006
- Lazzerini Denchi, E., Attwooll, C., Pasini, D. and Helin, K. Deregulated E2F activity induces hyperplasia and senescence-like features in the mouse pituitary gland. *Mol Cell Biol*. 2005
- Pasini, D., Bracken, A.P., Jensen, M.R., Lazzerini Denchi, E. and Helin, K. Suz12 is essential for mouse development and for EZH2 histone methyltransferase activity. *Embo J*. 2004
- Pasini, D., Bracken, A.P. and Helin, K. Polycomb group proteins in cell cycle progression and cancer. *Cell Cycle*. 2004
- Danovi, D., Meulmeester, E., Pasini, D., Migliorini, D., Capra, M., Frenk, R., de Graaf, P., Francoz, S., Gasparini, P., Gobbi, A., Helin, K., Pelicci, P.G., Jochemsen, A.G. and Marine, J.C. Amplification of Mdmx (or Mdm4) directly contributes to tumor formation by inhibiting p53 tumor suppressor activity. *Mol Cell Biol*. 2004
- Gao, G., Bracken, A.P., Burkard, K., Pasini, D., Classon, M., Attwooll, C., Sagara, M., Imai, T., Helin, K. and Zhao, J. NPAT expression is regulated by E2F and is essential for cell cycle progression. *Mol Cell Biol*. 2003
- Bracken, A.P*, Pasini, D*, Capra, M., Prosperini, E., Colli, E. and Helin, K. EZH2 is downstream of the pRB-E2F pathway, essential for proliferation and amplified in cancer. *Embo J*. 2003

*equal contribution