

ALLEGATO A

UNIVERSITÀ DEGLI STUDI DI MILANO

Procedura di selezione per la chiamata a professore di II fascia da ricoprire ai sensi dell'art. 18, commi 1 e 4, della Legge n. 240/2010 per il settore concorsuale 05/E2 Biologia Molecolare,
(settore scientifico-disciplinare BIO/11 - Biologia Molecolare)
presso il Dipartimento di Bioscienze, Codice concorso
4782

[Nome e cognome]

ANDREA CERASE

(N.B. IL CURRICULUM NON DEVE ECCEDERE LE 30 PAGINE E DEVE CONTENERE GLI ELEMENTI CHE IL CANDIDATO RITIENE UTILI AI FINI DELLA VALUTAZIONE.

LE VOCI INSERITE NEL FACSIMILE SONO A TITOLO PURAMENTE ESEMPLIFICATIVO E POSSONO ESSERE SOSTITUITE, MODIFICATE O INTEGRATE)

INFORMAZIONI PERSONALI (NON INSERIRE INDIRIZZO PRIVATO E TELEFONO FISSO O CELLULARE)

COGNOME	CERASE
NOME	ANDREA
DATA DI NASCITA	19.12.1977

RESEARCH INTEREST

I have dedicated my career to the study of X chromosome inactivation (XCI), a chromosome-wide epigenetic phenomenon. My most important contributions to the field have been:

- The discovery that Xist-RNA does not directly recruit PRC2 complex during XCI (Cerase et al., 2014), a study leading to a modification of the previously-accepted model (see also Almeida et al.)
- The discovery of three critical players in Xist mediated silencing by unbiased high-throughput genetic screen (Moindrot-Cerase et al., 2015).
- The identification of 37 bona fide Xist direct interactors (Cirillo et al., 2016) and their potential role in Xist function through phase-separation (Cerase et al, 2019).
- Defining the role of chromatin remodelers and LBR in XCI (Cerase et al. 2021; Young et al. 2021, Chen et al 2016).

My long-term plan is to study the role of lncRNAs and chromatin architecture and granule formation, with a particular focus on brain development, in health and disease.

TITOLI

TITOLO DI STUDIO

(indicare la Laurea conseguita inserendo titolo, Ateneo, data di conseguimento, ecc.)

Nov. 1996-Mar. 2002 **MSc in Molecular Biology (Honours, 110/110 *summa cum laude*)** at University of Naples "Federico II", Italy, with a thesis in **molecular biology and biochemistry** at the National Institute of Cancer Research – Fondazione Pascale (**5-year course**). Advisors: Prof. Rodolfo Frunzio and Dr. Nicola Normanno.

TITOLO DI DOTTORE DI RICERCA O EQUIVALENTI, OVVERO, PER I SETTORI INTERESSATI, DEL DIPLOMA DI SPECIALIZZAZIONE MEDICA O EQUIVALENTE, CONSEGUITO IN ITALIA O ALL'ESTERO
(inserire titolo, ente, data di conseguimento, ecc.)

Oct. 2003-Jan. 07 **Ph.D in Advanced Biology with a thesis in Human Genetics** at the University of Naples "Federico II", Italy of which ~1 year spent at the Imperial College, London, UK (Italian XIX cycle, Biologia Avanzata). Advisors: Dr. Maurizio D'Esposito and

Prof. Laura Fucci.

ALTRI TITOLI CONSEGUITI

(inserire titolo, ente, data di conseguimento, ecc.)

- April 2017 **Professorship qualification eligibility (habilitation)** for the Italian University system (Level B, Abilitazione Scientifica Nazionale 2016, 05/E2, Molecular Biology). Peer-reviewed evaluation of scientific achievements and merit-based on publications and experience.
- Sept. 2014-Mar. 2015 **Associate Fellowship of the Higher Education Academy – UK system** (AFHEA, PR083643 -24th March 2015). Qualification for teaching at the university level.

ATTIVITA' PROFESSIONALE

- Oct. 2018-date **Lecturer in Epigenetics and Genomics** (Assistant Professor) at the Blizard Institute, Centre for Genomics and Child Health, Queen Mary University of London, Barts and the London School of Medicine and Dentistry, London, UK.
- July-Aug. 2018 **Visiting Scientist in Biology and Biological Engineering** at the California Institute of Technology (CalTech), Division of Biology and Biological Engineer in the group of Prof. Mitchell Guttman, Pasadena, USA.
- Jan. 2014-July 2018: **EMBL Fellow**
Research fellowship under the supervision of Prof. Phil Avner's (EMBL-Rome, Italy) – Research Project 1: ***“Defining Xist RNA-direct interactors”***. Paper published. Research Project 2 ***“Regulation of X chromosome inactivation by chromatin remodelers”***. Paper published.
- Feb. 2007-Dec 2013 **Post Doctoral Research Associate**
Research associate in Prof. Neil Brockdorff's group (Biochemistry Department, University of Oxford, Oxford*, UK - Research project 1: ***“PRC2 recruitment and Xist/polycomb spatial organization in XCI”***. Paper published - Research project 2: ***“Defining Xist-RNA protein partners by unbiased shRNA screening”***. Paper published. *First year spent at Imperial College London (UK).
- Oct. 2003-Jan. 2007 **Doctoral Research**
Ph.D. in Prof. Maurizio D'Esposito's (MDE†) group (IGB-National Research Council, CNR, Naples, Italy and CSC-MRC, Imperial College London, UK for one year) - Research Project: ***“Structure and gene regulation of the human PAR2 region”***. Work published. † deceased.
- Mar. 2002-Oct. 2003 **Post-graduate training**
Telethon Fellowship in Prof. Maurizio D'Esposito's group (IGB-National Research Council, CNR – Research Project 1: ***“Generation of a mouse 10k CpG islands array”***. Work completed – collaborations established. Technical assistance on research Project 2: ***“High resolution DNA methylation analysis of hHMLH1 promoter in colon carcinomas”***. Work published.
- Oct. 2000-Mar. 2002 **Experimental thesis work**
Internship in Dr. Nicola Normanno's lab (National Institute of Cancer Research "Fondazione G. Pascale" Naples, Italy) – Research Project: ***“Role of Cripto1 in human breast carcinoma”***. Thesis published *online* at the University's website.

ATTIVITÀ DIDATTICA

INSEGNAMENTI E MODULI

(inserire anno accademico, corso laurea, numero di ore frontali, eventuale CFU)

Corsi Frontali

2020-2021	Academic laboratory demonstrator (1 session). 4 hrs frontali/ 2hrs non frontali (Medicine/Biological Sciences)
2020-2021	"Project Skills in the Life Sciences" 1:1 supervision for literature dissertation and marking. 30 hrs frontali, 4 non frontali (Biological Sciences)
2019-2021	Examiner for PhD dissertations (2 overseas students), Examiner for PhD progress (1 UK student). 6 hrs frontali, 12 non frontali (Biological Sciences)
2019-2020	"Project Skills in the Life Sciences" 1:1 supervision for literature dissertation and marking. 30 hrs frontali, 4 non frontali (Biological Sciences)
2020-2021	Problem-based learning (PBL) facilitator in Brain and Behaviour (Module 1 (BB1) and module 2 (BB2)) and Cardiorespiratory (Module 1 (CR1)), 3/4 classes/module + marking. 20 hrs frontali, 12 non frontali (Medicine)
2019-2020	Second Marker for Molecular Biology exams (X1). 2hrs non frontali (Biological Sciences)
2019-2020	Problem-based learning (PBL) facilitator in Brain and Behaviour (Module 1 (BB1) and module 2 (BB2)); 5 classes/module + marking. 3 hrs frontal 4 non frontal (Medicine)
2018-2019	Problem-based learning (PBL) facilitator in Human Development (Module 1, HD1), 5 classes/module + marking. 3 hrs frontal 4 non frontal (Medicine)
Feb. 2019-to date	Students admission at Queen Mary University – Barts and the London School of Medicine and Dentistry, London, UK. 4hrs frontali (Medicine)

THEORETICAL PREPARATION FOR TEACHING AND SUPERVISING PEOPLE IN THE LAB:

Feb 2009 – to date	<ul style="list-style-type: none">-PhD Supervision Training for New PIs – QMUL, London, UK (Sept 5th 2019).-Problem-based learning (PBL) – facilitator course, QMUL, London (March 25th April 1st 2019).-Medical Students admission (A100 interviews), QMUL, London (Feb. 5th-April 1st 2019)-Teaching Portfolio Workshop, Part 3 - Preparing innovative teaching portfolios, University of Oxford, Oxford, UK (7th May. 2013).-Teaching and Learning Skills Development, Part 2 - Lecturing and Large Class Teaching, University of Oxford, Oxford, UK (22nd Feb.- 1st Mar. 2013).-Workshop on Learning and Teaching in Practical, Classes and Tutorials Part 1, University of Oxford, Oxford, UK (6/7th Jan. 2011).-Tutor Training Course, University of Oxford, Oxford, UK (25th Feb. 2009).
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JOB-RELEVANT COURSES:

Mar.-Apr. 2019.	Animal work, UK Home Office (HO) and Royal Veterinary College (RVC), Module 1 and 3 (March 4 th 2018), module 5 (March 21-22 nd 2019), London, UK PPL: P64B83C45, PIL: IBE825E16 , validity 2019-2024).
Jan.- Mar. 2015	The Effective Team Leader modules 1 and 2 , EMBL-Rome, Italy.
17 th Mar. 2019	Animal work Mouse Module 1/basic handling certificate , EMBL-Rome, Italy.
4-8th Nov. 2013	Advanced Microscopy Imaging Course , University of Oxford, Oxford, UK.
2008-to date	Intermediate/advanced courses in statistics, Microsoft Excel, Adobe Photoshop/Illustrator, R language and bioinformatics (inc next-gen sequencing analysis) . University of Oxford, Oxford, UK, EMBL-Rome, Italy and QMUL, London, UK.

SCIENCE COMMUNICATION (selected):

Nov. 2014-to date

Science writer/contributor for the EMBL magazine (*EMBL-Etc*) and *Fondazione TiAmo, Autism Awareness (Viareggio)*, *LinkedIn*, *Blizard Digest*.

IT/BIOINFORMATIC COMPETENCIES:

Very good knowledge of Windows and MacOS X platforms and basic knowledge of UNIX systems. **Excellent Knowledge of MS Powerpoint, Word, Excel, Adobe Photoshop/Illustrator** and commonly used **bioinformatics tools** (e.g. BLAT/BLAST, UCSC/ENSEMBL Genome browsers, DNA/protein alignment software). **Basic data analysis in R of next-generation seq. data, principles of BASH and Python.**

LANGUAGES:

English:	Fluent spoken and written.
Italian:	Mother tongue.
Spanish:	Basic spoken and written.

ATTIVITÀ DI DIDATTICA INTEGRATIVA E DI SERVIZIO AGLI STUDENTI

ATTIVITÀ DI RELATORE DI ELABORATI DI LAUREA, DI TESI DI LAUREA MAGISTRALE, DI TESI DI DOTTORATO E DI TESI DI SPECIALIZZAZIONE

(inserire anno accademico, ateneo, corso laurea, ecc.)

- **QMUL, London UK (2018- date)**

2021/2022 - Maria Ciutobar (BSs). *In progress.*

2020/2021 - Justyna Skonieczna (MSc), *"LncRNA in neurodegenerative disorders"*.

2020/2021 - Cynthia Von Lundgren (BSc), *"Mapping the Expression of CDKL5 and MeCP2 in the Mouse Brain at a Protein Level"*.

2020/2021 - Adriana Dobrowska (BSc), *"Towards a comprehensive CDKL5 and MeCP2 coexpression map in the adult mouse brain – implications for gene therapy approaches"*.

2020/2021 - Numaan Iqbal (MSc), *"In Silico Identification of Peptides and Proteins Originating from Bona Fide Long Non-Coding RNAs"*.

2020/2021 - Anjali Taak (BSc), *"CRISPR-Cas9- mediated approaches to edit and correct genetic defects in human embryos"*. Literature research.

2019/2020 - Mariam Abbas (BSc), *"Functional Analysis of Novel Long non-coding RNA Role in Brain Development in Health and Disease"*.

2019/2020 - Lydia Nel (MSc), *"Determining the Role of the Chromo-Domain Helicase 8 (CHD8) Protein in Neuronal Differentiation"*.

2019/2020 - Abulrazak Alsaleh (BSc), *"The chromodomain helicase DNA binding protein 8 (CHD8) plays a role in X chromosome inactivation"*.

2019-2020 Redah Alnashed (Bsc), *"Hypoxia, Epigenetics, and Cancer. The Journey from Normoxia to Hypoxia, a Two-Way Road"*. Literature research.

2019 -2020 Durvalina Fortes-Morais (postgraduate), internship (~6 months).

- **EMBL Rome, Rome, Italy (2014-2018)**

2014 - Eleftheria Ledaki (internship, 6 month) – *"Role of Chromatin remodelers in Xist regulation"*

2015 - Mirjam Arnold (internship, 6 month) – *"Role of Chd8 in Xist regulation"*

2016 - Sevgican Yilmaz (internship, ~6 month) – *"Role of Chd8 in Xist regulation"*

2017- Xiaochuan Tu (Internship, 6 month) – *"Analysis of Xist splicing variants by*

nanopore-seq"

2017 - Gaby Sant (internship, ~12 month) – "Analysis of Xist splicing variants and modifications by nanopore-seq"

- **Oxford University, Oxford, UK (2008-2013)**

2008-2009 Michelle Barton (BSc). "Analysis of the phosphorylation status of the mouse PRC2 subunit Eed" (Co-supervision with Prof. N Brockdorff)

2009-2010 John Drake (BSc). "Investigating the role of Pcl2 (Polycomb-like 2) on the phosphorylation state of the mouse Polycomb repressive complex 2 (PRC2) component Eed" (Co-supervision with Prof. N. Brockdorff)

2011-2013 Greta Pintacuda (D.Phil). "Functional analysis of Xist-mediated silencing" (Co-supervision with Prof. N. Brockdorff/Dr. Moindrot)

ATTIVITÀ DI TUTORATO DEGLI STUDENTI DI CORSI DI LAUREA E DI LAUREA MAGISTRALE E DI TUTORATO DI DOTTORANDI DI RICERCA

(inserire anno accademico, corso laurea, ecc.)

2010-2013 **College tutor** at University of Oxford (>15 students, Merton and Wadham College, Oxford, UK). >40 hrs frontal >40 hrs non frontal

STAFF SUPERVISION:

Mar. 2019-date Nerea Blanes Ruiz (lab technician)

Sep. 2020- date Giuseppe Trigiante (postdoc)

Sep. 2020- date Justyna Skonieczna (graduate internship)

Sep. 2020- date Lorena Galiano – (lab technician, currently on maternity leave)

April 2017-date Alex Young (lab technician)

2016-2018 Monica Di Giacomo (postdoc)

2014-2018 Alessandra Liverziani (lab technician, co-supervision with Dr. Andreas Hierholzer, main supervisor)

SEMINARI

(inserire titolo del seminario, luogo, data, ecc.)

INVITED TALKS

- *Studying X chromosome inactivation and reactivation through unbiased genetic and small molecule screening.* ICGEB, Trieste, Nov. 14th 2020 (virtual talk).
- *From Xist to lncRNAs regulating brain function and activity.* SISSA, Nov 25th 2019 Trieste, Italy.
- *Reversing X-Chromosome Inactivation as new therapeutic treatment for X-linked disorders.* Scuola Normale Superiore di Pisa (SNS), June 12th 2018, Pisa, Italy.
- *Regulation of X chromosome inactivation by Xist long non-coding RNA.* Institute of Genetics and Biophysics, Naples, Italy, April 16th 2018.
- *Characterization of Xist lncRNA functional interactome.* Helmholtz Zentrum Munich, Germany. March 23rd 2018.
- *Regulation of X chromosome inactivation by Xist long non-coding RNA.* University of Naples Federico II, Italy, 6th March 2018.
- *Understanding Xist-mediated gene-silencing.* Rett Syndrome Research Trust (RSRT) meeting. Boston, USA, June 14th-15th 2017.
- *Understanding Xist-mediated gene-silencing.* GReD Clermont-Ferrant (France). May 3rd 2017.
- *Ameliorating X-linked neurological disease by XCI reversal.* University of Southampton. Southampton, UK, Dec. 2nd 2015.
- *X chromosome Inactivation: How females get it even.* JRF Symposium, Oxford, UK, Nov. 24th 2010.

ATTIVITÀ DI RICERCA SCIENTIFICA

PUBBLICAZIONI SCIENTIFICHE

(per ciascuna pubblicazione indicare: nomi degli autori, titolo completo, casa editrice, data e luogo di pubblicazione, codice ISBN, ISSN, DOI o altro equivalente)

LIST OF PUBLICATIONS:

(**ORCID: 0000-0002-1985-2049**, Loop profile: 262780, Researcher ID: P-4741-2016, Scholar: Andrea

Total number of publications	26 (plus 5 in preparation/submitted and two under review)
Number of first-author publications	9 (5 research articles <u>[underlined]</u> [¶] , 2 reviews*, 2 editorials)
Number of last-author publications	7 (4 research articles, 2 reviews, 1 book chapter)
Total number of citations (Google Scholar)	1959
Number of citations from <u>first/last authorships</u>	462 (research articles only)
h-index	16
i10 index	16
[¶] corr. author in 2 papers, *also Corresponding author	

Cerase).

- Kumar M., Enright A., Hierholzer A., Bunes A., **Cerase A.**, Avner P. *Insights from transgressive traits in consomic mice: CCR7 links B cell with hyper-IgM phenotype*. **Cell Reports** (IF 2019=8.109), **at first revision stage**.
- Enverald E., Powell L.M., Boteva L., Foti R., Blanes Ruiz N., Kibar G., Piszczek A., Cavaleri F., Vingron M., **Cerase A.** and Sara B.C. Buonomo. "A RIF1/KAP1-based toggle switch stabilises the identities of the inactive and active X chromosomes during X inactivation". **EMBO Journal** (IF 2019=9.89), **at second revision stage**.
- Hierholzer A., Chureau C., Liverziani A., Simmler M.C., Cattanaach B.M., Rasberry C., Young A., Nerea Ruiz Blane, **Andrea Cerase**, Kumar M. and Phil Avner. *A novel long non-coding RNA influences the choice process in X chromosome inactivation and represents a candidate gene for the X controlling element*. **Manuscript submitted to Dev Cell** (IF=10.09).
- **Cerase Andrea***, Mauro J. Calabrese*, Gian Tartaglia*. "Phase separation in dosage compensation: models unified and in phase". Research Highlight for **Cell** or **Nat. Struct. Mol Biology**. *Corresponding author. *In progress*.
- Patrick Pallier*, Maria Ferrara, Francesca Romagnolo, Evelyne Bichof Maria Teresa Ferretti, Hermona Soreq, **Andrea Cerase***. *Genetic and epigenetic contribution to sex differences in neurological and neuropsychiatric disorders: implications for therapeutic interventions*. **Manuscript submitted to Progress in Neurobiology**, IF 2018=10.625 * Corresponding author.
- Deepika Kulshrestha, Nicola Pomella, Nerea Blanes Ruiz, Giuseppe Trigiant, Anamika Krishnpal, Sarah Marzi & **Andrea Cerase**. *Chd8 regulates murine neuronal differentiation through regulation of direct targets and pleiotropic epigenetic regulators*. **Manuscript in preparation**.
- Trigiant Giuseppe, Nerea Ruiz Blanes, **Andrea Cerase**. *Emerging roles of repetitive RNA in nuclear organization and gene expression*. **Under editorial consideration at Nature Reviews Molecular Biology**.
- 26) Vincenza Aliperti*, Justyna Skonieczna and **Andrea Cerase***. *Long Non-coding (lncRNA) role in cell biology, neurodevelopment and neurological disorders*. Non-Coding RNA. **Non-coding RNA** (Impact Score=7.35 Non-Coding RNA 2021, 7(2), 36 *Corresponding author
- 25) **Cerase A.***, Young A.N., Ruiz Blanes N., Bunes A., Sant G. M., Arnold M., Di Giacomo M., Ascolani M., Kumar M., Hierholzer A., Trigiant G., Sarah J. Marzi, Avner P.* *Chd8 regulates X chromosome*

inactivation in mouse through fine-tuning control of Xist expression. **Commun. Biol** **4**, 485 (2021). <https://doi.org/10.1038/s42003-021-01945-1> (Nature PG, IF 2020: 6.268) **First and * co-Corresponding author.**

- 24) Young A.N., Perlas E., Ruiz Blanes N., Buness A., Hierholzer A., Pomella N., Matin-Martin B, Liverziani A., Joanna W. Jachowicz, Thomas Giannakouros, **Cerase A***. *An N-terminal deletion of LBR N-terminal domains recapitulates Pelger-Huet anomaly phenotypes in mouse without disrupting X chromosome inactivation.* **Commun. Biol** **4**, 478 (2021). <https://doi.org/10.1038/s42003-021-01944-2> (Nature PG, IF 2020: 6.268) * **Corresponding author.** Citations: 1

- 23) Lee H.M., Kuijter M.B, Ruiz-Blanes N., Ellen P.C., Aita M., Galliano L., Kokot A., Sciaky N., Simon J.M., Bhatnagar S, Philpot B., **Cerase A***. *A small-molecule screen reveals novel modulators of MeCP2 and X-chromosome inactivation maintenance.* **The Journal of Neurodevelopmental Disorders.** 2020 Nov 10;12(1):29. doi: 10.1186/s11689-020-09332-3 (IF 2019/20=4.025)* **Corresponding author.** Citations:3

- 22) **Andrea Cerase*** and Gian Tartaglia*. *LncRNA-Polycomb intimate rendezvous.* Invited review for the Royal Society **Open Biology** 2020 Sep;10(9):200126 ***Corresponding author.** IF 2020= 6.41, Citations: 7

- 21) **Cerase A.***, Armaos A.*, Neumayer C., Avner P., Guttman^π, and Tartaglia G.^π. *Phase separation drives X chromosome Inactivation: a hypothesis* **Corresponding author.** First version of the manuscript deposited in BiorXiv (<https://www.biorxiv.org/content/early/2018/06/20/351015>, **Nat. Str. Mol. Bio.** 2019 May; 26(5):331-334. IF 2019=11.980; Citations:49
-In this paper, we suggest for the first time that Xist might use phase-separation to recruit repressive complexes on the inactive X chromosome. We support our claims using experimental data evidence and bioinformatic analysis of existing and new datasets.

- 20) Gartler S.M, Goldman M.A., **Cerase A.** *The Xist Locus.* Book chapter. Reference Module in Life Sciences, Elsevier. 2019, **Online.** IF N.A.; Citations: N.A.

- 19) **Cerase Andrea.** *Awakening the Sleeping Giant: methods to reactivate the inactive X Chromosome as clinical treatment for X-linked disorders.* **Journal of Translational Genetics and Genomics.** Editorial, March 1st 2018. IF N.A.; Citations: N.A.

- 18) Pintacuda G*, Young A.N. and **Cerase A***. *Function by structure: Spotlights on Xist RNA.* Review. Inaugural paper for **Frontiers in Molecular Biosciences (invited)**, Dec. 19th 2017. ***Corresponding author.** IF N.A. at time of publication (3.56 first IF); Citations: 51

- 17) Pintacuda G., Wei G., Roustan C., Anil-Kirmitzas B., Solcan N., **Cerase A.**, Castello A., Shabaz M., Moindrot B., Nesterova T., Brockdorff N. *hnRNPK recruits PCGF3/5-PRC1 to the Xist RNA B-repeat to establish Polycomb-mediated chromosomal silencing.* **Mol. Cell**, December 7th 2017. IF 2016/17=14.248; Citations: 153

- 16) Almeida M., Pintacuda G., Masui O., Koseki Y., Gdula M, **Cerase A.**, Brown D., Mould A., Innocent C., Nakayama M., Shermelleh L., Nesterova T., Koseki H, and Brockdorff N. *PCGF3/5-PRC1 initiates Polycomb recruitment in X chromosome inactivation.* **Science**, Jun 9 2017;356(6342). IF 2016/17=41.058; Citations: 152
-Project originating from my initial observation of Xist failing to recruit Polycomb2 complex in MG-132 (proteasome inhibitor) treated cells. This treatment leads to H2A119 deubiquitination and failure to recruit PRC2 via non-canonical PRC1 pathways (proof of principle).

- 15) Cirillo D., Blanco M., Armaos A., Buness A., Avner P., Gutmann M., **Cerase A*** and Tartaglia G.*. *Quantitative predictions of protein interactions with long non-coding RNA.* **Nature Methods**, 2016 Dec 29;14(1):5-6 * **Corresponding author.** IF 2016=25.062; Citations: 79
-Using a bioinformatics and experimental approach we define 37 bona fide Xist interacting proteins. We believe that these proteins are the most-important players in X chromosome inactivation.

- 14) Chen C.K., Blanco M., Jackson C., Aznauryan E., Ollikainen N., Surka C., Chow A., **Cerase A.**, McDonel P., Guttman M. *Xist recruits the X chromosome to the nuclear lamina to enable chromosome-wide*

silencing. Science, 2016 Oct 28;354(6311):468-472. Epub 2016 Aug 4. [IF 2016/17=37.205](#); Citations: 198

- 13) **Cerase A.** *X chromosome inactivation: The Importance of being inactive. Seminars in Cell and Developmental Biology*, Vol 56, Aug. 2016. Editorial for a special issue on X Chromosome Inactivation. ***Corresponding author.** [IF 2016=6.614](#); Citations: 2
- 12) Pintacuta G. and **Cerase A.** ** X inactivation lessons from differentiating embryonic stem cells. Cell Reviews and Reports*, 2015 Oct;11(5):699-705 ***Corresponding author.** [IF 2015=4.220](#); Citations: 7
- 11) **Cerase A.***, Pintacuta G., Tattermusch A. and Avner P. *Xist localization and function: New insights from multiple levels. Genome Biology*, 2015 Aug 15;16:166 *** Co-Corresponding author.** [IF 2015=11.313](#); Citations: 145
- 10) Moindrot B.*, **Cerase A.***, Coker H., Masui O., Grizenhout A., Pintacuda G., Schermelleh L., Nesterova T.B., Pintacuta G., Brockdorff N. *A pooled shRNA screen identifies Rbm15, Spen and Wtap as factors required for Xist RNA-mediated silencing. Cell Reports*, 2015 Jul 28. ***Co-first author.** [IF 2016=7.87](#); Citations: 190
-In this paper we find 3 novel master genes involved in X chromosome inactivation such as Spen, Rbm15 and Wtap genes. In particular Spen via Hdac3 triggers the observed histone deacetylation of the inactive X chromosome while Rbm15 and Wtap are essential for Xist m6A methylation, which is in turn essential for gene-silencing.
- 9) Smeets D., Markaki Y., Volker J. Schmid, Felix Kraus, Tattermusch A., **Cerase A.**, Sterr, M., Fielder S., Demmerle J., Popken J., Leonhardt H., Brockdorff N., Cremer T., Schermelleh L., Cremer M. *Three-dimensional super-resolution microscopy of the inactive X chromosome territory reveals a collapse of its active nuclear compartment harboring distinct Xist RNA foci. Epigenetics&Chromatin*, 2014 Apr 28;7:8. [IF 2014=5.919](#); Citations: 158
- 8) **Cerase A.**, Smeets D., Tang Y.A., Gdula M., Kraus F. Spivakov M., Moindrot B., Leleu M., Tattermusch A., Demmerle J., Nesterova T.B., Green C., Otte A.P., Schermelleh L. and Brockdorff N. *Spatial separation of Xist-RNA and Polycomb proteins revealed by super resolution microscopy. Proc Natl Acad Sci U S A*. 2014 Feb 11;111(6):2235-40. [IF 2014=10.896](#); Citations: 98
-We published the first observation that Xist and Polycomb2 do not physically interact by means of super-resolution microscopy, suggesting that Xist indirectly recruits PRC2 through chromatin modifications, an observation leading to a modification of the previously-accepted model
- Commentary on this article by Janelle Weaver on BioTechniques: "X-inactivation seen in a New Light", March 2014 issue - online publication and one Wikipedia link: "Polycomb recruitment in X-chromosome inactivation".
- 7) Farcas A.M., Blackledge N.P., Sudbery I., Long H.K., McGouran J.F., Rose N.R., Lee S., Sims D., **Cerase A.**, Sheahan T., Koseki H., Brockdorff N., Ponting C., Kessler B.M., J Klose R.J. *KDM2B links the Polycomb Repressive Complex 1 (PRC1) to recognition of CpG islands. Elife*. 2012 Dec 18;1:e00205. [IF 2012=N.A. \(2013=8.519\)](#); Citations: 376
- 6) Casanova M. *, Preissner T. *, **Cerase A.#**, Poot R., Yamada D., Li X., Appanah R., Bezstarosti K., Demmers J., Koseki H. and Brockdorff N. *Polycomblike 2 facilitates recruitment of PRC2 Polycomb-group complexes to the inactive X chromosome and to target loci in ES cells. Development*. 2011 Apr;138(8):*equal contribution. **#Second author.** [IF 2011=6.838](#); Citations: 93
- 5) Tang Y.A., Huntley D., Montana G., **Cerase A.**, Nesterova T.B., and Brockdorff N. *Xist mediated silencing on autosomes is linked to chromosomal domain organization. Epigenetics&Chromatin*. 2010 May;3(1):10. [IF 2010=4.731](#); Citations: 68
- 4) Matarazzo M.R., **Cerase A.** and D'Esposito, M. *Building up the inactive X chromosome. Biol Cell*. 2008 Jan;100(1):63-70. [IF 2008=N.A. \(2009=3.621\)](#); Citations: 5
- 3) Matarazzo M.R.*, De Bonis M.L.*, Strazzullo M.*, **Cerase A.#**, Ferraro M., Vastarelli P., Ballestar E.,

Esteller M., Kudo S., and M. D'Esposito. *Multiple binding of methyl-CpG and polycomb proteins in long-term gene silencing events*. **Journal of Cell Physiology** 2007 Mar;2010(3):711-9. *Equal contribution, #**Second author**. IF 2007=3.946 (5yr \geq 4.5); Citations: 46

- 2) De Bonis M.L., **Cerese A.* (CA)**, Matarazzo M.R., Ferraro M., Strazzullo M., Hansen R.S., Chiurazzi P., Neri G. and M. D'Esposito. *Maintenance of X-and Y-inactivation of the pseudoautosomal (PAR2) gene SPRY3 is independent from DNA methylation and associated to multiple layers of epigenetic modifications*. **Human Molecular Genetics** 2006 Apr 1;15(7):1123-32. ***Co-first author**. IF 2006=9,181; Citations: 45
-All experiments presented in this paper, except data in Fig.2 (DBML) and Fig.6 (HRS) were performed and analysed by CA. Allele-specific PCRs and allele specific ChIP assays were developed and successfully employed by CA.
- 1) Strazzullo M., Cossu A., Balduin P., Colombino M., Satta M.P., Tanda F., De Bonis M.L., **Cerese A.**, D'Urso M., D'Esposito M., Palmieri G. *High-resolution methylation analysis of the hMLH1 promoter in sporadic endometrial and colorectal carcinomas*. **Cancer** 2003 Oct 1;98(7):1540-6. IF 2003=4.500; Citations: 32

SELECTED MEETING ABSTRACTS:

- Cirillo D., Blanco M., Armaos A., Bunes A., Avner P., Gutmann M., Tartaglia G and **Cerese A.** *A computational approach for identification of protein-RNA interactions uncovers direct binders of Xist lncRNA*. EMBO workshop, RNA structure meets function, July 1st-5th 2018. Stockholm, Sweden.
- **Cerese A.**, Hierholzer A., Di Giacomo M., Arnold M., Liverziani A., Young A.N., Avner P. *"Regulation of X chromosome inactivation by chromatin remodelers complexes"*. X chromosome inactivation – A tribute to Mary Lyon, Oct 4th /5th 2016, London, UK. Pag. 7 – Poster section, conference book.
- **Cerese A.**, Nesterova T., Tang Y., Brockdorff N. *"Identification of novel factors involved in establishment of X inactivation"*. 3rd X inactivation Conference. 20-24 July 2011, Oxford, UK. Pag. 68, conference book.
- **Cerese A.**, Tang Y.A., Leleu M., Spivakov M. and Brockdorff N. *"Defining Xist binding sites"*. Systems Biology Meeting, Cold Spring Harbor Laboratory, 27-30th March 2008 NY (USA) and 4th Epigenome NoE meeting, 26-29th June 2008, Madrid, Spain.
- **A. Cerese**, M.L. De Bonis, M.R. Matarazzo, M. Ferraro, M. Strazzullo, R.S. Hansen, P. Chiurazzi, G. Neri and M. D'Esposito. *"Maintenance of X- and Y-inactivation of the pseudoautosomal (PAR2) gene SPRY3 is independent from DNA methylation and associated to multiple layers of epigenetic modifications"*. Second International X-inactivation Meeting, 17th-23rd Sept. 2006, Paris, France. Pag. 66 conference book.

ORGANIZZAZIONE, DIREZIONE E COORDINAMENTO DI CENTRI O GRUPPI DI RICERCA NAZIONALI E INTERNAZIONALI O PARTECIPAZIONE AGLI STESSI

(per ciascuna voce inserire anno, ruolo, gruppo di ricerca, ecc.)

- **Direzione Cerese Lab at QMUL 2018-date (3 lab technician, one postdoc, one rotating PhD student, 2 postgraduate students internships + MSc/BScs students (see above).**

Progetti finanziati

- Mar. 2021-Feb. 2022 **BARTS Charity Seed grant** - *"Analysis of phase-separated granules from the inactive X chromosome as a platform to study RNA-mediated phase separation in Amyotrophic Lateral Sclerosis: implications for drug discovery and therapy"*. **Awarded: £48,792.74 for one year.**
- Apr. 2019-Dec. 2021 **BARTS Charity small grant (Proof of principle)** – *"Functional analysis of novel lncRNAs role in brain development in health and disease"*. **Awarded: £23,900 for two years (extended due to Covid19 pandemic).**
- Oct2018-Jan 2022 **Rett Syndrome Research Trust (RSRT) foundation** – *"Ameliorating X-linked neurological disorders by X chromosome inactivation reversal"*. **Awarded: \$351,021.22 granted for**

three years (extended) *Partially reduced to COVID-19 pandemic.

Coordinamento gruppi di ricerca/collaborazioni

- Gian Tartaglia and Mitch Guttman – CRG Barcelona and CalTech Pasadena, *In silico* protein-RNA interaction prediction and eCLIP/RAP experiments, papers #14, #15, #21, #22 and work *in progress*.
- Michael Sattler – Technische Universität München – Structural characterization of Xist interacting proteins, *in progress*.
- Prof. Mario Nicodemi, University of Naples Federico II – Exploring the physics of X chromosome inactivation, *in progress*.

ATTIVITÀ QUALI LA DIREZIONE O LA PARTECIPAZIONE A COMITATI EDITORIALI DI RIVISTE SCIENTIFICHE

(per ciascuna voce inserire anno, ruolo, rivista scientifica, ecc.)

EDITORIAL - REFEREE WORK (Publons - Andrea Cerase):

June. 2020-date	Guest Editor for <i>Non-coding RNA (MDPI)</i> for a Special Issue on the "Role of lncRNAs in Brain Development and Disease". Dr. Aliperti, co-guest editor.
Aug. 2017-date	Associate Editor of <i>Frontiers in Molecular Biosciences</i>
Aug. 2017-Aug 2018	Guest Editor of <i>Frontiers in Molecular Biosciences, Protein and RNA Networks</i> for a special issue entitled: The RNA World ; A series of reviews on the most-studied lncRNA such as Xist, Malat1, Airn, Hotair, etc.
Aug. 2016-July 2017	Associate Editor of <i>Journal of Translational Genetics and Genomics (JTGG)</i> . Special issue entitled: "Reversing X Chromosome Inactivation as a New Therapeutic Treatment for X-linked Diseases".
Mar. 2015-Jul. 2016	Associate Guest Editor for <i>Seminars in Cell and Developmental Biology</i> for a special issue on X chromosome inactivation (12 reviews). Vol 56 (pp. 1-208, Aug. 2016).
Apr. 2008-to date	Referee for Nature Methods, Nature Communications, Cell Reports, Briefings in Functional Genomics, NAR, Frontiers in Molecular Biosciences, WireRNA, Aging, Dove Medical, JTGG. Co-Referee for top-tier and widely read journals (i.e. Nature, Cell, Molecular Cell, Science, Genome Research, Dev. Cell, Epigenetics and Chromatin, etc.).
2018-date	Referee for national (UK/Italy/France) and international grant proposals (USA) , such as MRC, BBRC, ANR, PRIN, RSRT, etc.

TITOLARITÀ DI BREVETTI

(per ciascun brevetto, inserire autori, titolo, tipologia, numero brevetto, ecc.)

NA

PREMI E RICONOSCIMENTI NAZIONALI E INTERNAZIONALI PER ATTIVITÀ DI RICERCA

(inserire premio, data, ente organizzatore, ecc)

AWARDS/FELLOWSHIPS:

Jan. 2014-Jan. 2018	EMBL fellowship – EMBL-Rome, Monterotondo, Italy.
May 2010-Sep. 2012	Fulford Junior Research Fellowship - Somerville College, University of Oxford, Oxford, UK.

Mar. 2006-Jan. 2007	Epigenome Network of excellence grant – Visiting student MRC-CSC, Imperial College, London, UK.
Sep. 2006	Conference travel grant – 2nd International X Chromosome Inactivation Meeting, Paris, France.
Jun. 2003-Jan. 2004	Telethon Foundation Fellowship – IGB-Naples, Italy.

PARTECIPAZIONE IN QUALITÀ DI RELATORE A CONGRESSI E CONVEGNI DI INTERESSE INTERNAZIONALE

(inserire titolo congresso/convegno, data, ecc.)

CONFERENCE/MEETING TALKS (selected)

- *A genetic approach to study X chromosome inactivation in vitro and in vivo.* XXIII Meeting of the Italian Society of Genetics. Trieste, Italy. 11-13th November 2020 (virtual event).
- *Riattivazione del cromosoma X inattivo come potenziale approccio terapeutico per le sindromi di Rett e CDKL5.* Fondazione T.i.A.m.o, 2nd June 2018, Viareggio, Italy.
- *Regulation of X chromosome inactivation by chromatin remodeler complexes.* 1st EMBL-Sapienza meeting, 26th /27th September 2016, Rome, Italy.

ADVISORY CONSULTANCY - MEETING ORGANIZATION:

Sept 10 th /11 th 2020	QMUL New Horizons in Genomics 2020 (international meeting), London, UK. Main organizer of the entire meeting with Prof. Vardhman Ramanan.
July 1 st -5 th 2019	QMUL New Horizons in Genomics , London, UK. Main organizer of the “Medical Genomics” day with Dr. Christopher Bell.
Jul. – Sep. 2016	1 st EMBL-Sapienza Meeting, 26 th /27 th September 2016, Rome, Italy.
Mar. – May 2016	2 nd Annual Epigenetics Discovery Congress, 8 th September 2016, London, UK (consultant).

MEMBERSHIPS:

Member of the Epigenetics Society (2014) and Cancer Epigenetics Society (2016) the RNA society (2021), Woman Brain Project (2021, requested).

ATTIVITÀ GESTIONALI, ORGANIZZATIVE E DI SERVIZIO

INCARICHI DI GESTIONE E AD IMPEGNI ASSUNTI IN ORGANI COLLEGIALI E COMMISSIONI, PRESSO RILEVANTI ENTI PUBBLICI E PRIVATI E ORGANIZZAZIONI SCIENTIFICHE E CULTURALI, OVVERO PRESSO L'ATENEO O ALTRI ATENEI

(inserire incarico/impegno, ente, data, ecc.)

INTERNAL/EXTERNAL REVIEW OF PhD PROGRESS AND DOCTORATE COMMITTEES

2021 -James Blackburn, QMUL, 9 Months PhD progress (examiner)
 2019 - Giulia Guiducci, Sapienza University of Rome (PhD examiner)
 2019 - Riccardo Delli Ponti, CRG Barcelona (PhD examiner)
 2019- date London Interdisciplinary PhD program (LIDo), CV screening/preselection

ATTIVITÀ CLINICO ASSISTENZIALI

(indicare, data, durata, ruolo, ente presso il quale si è prestata attività assistenziale, ecc.)

NA

Data

01.08.2021

Luogo

Londra