**CURRICULUM VITAE: Dr Alexey Ruzov**

**1. QUALIFICATIONS**

**2000** PhD in Molecular Genetics, Institute of Gene Biology, Russian Academy of Sciences, Moscow

**1996** MSc in Biochemistry (Hons equivalent), Lomonosov Moscow State University

**2. PRESENT AND PREVIOUS APPOINTMENTS**

**2017-** Associate Professor in Stem Cell Biology, School of Medicine, University of Nottingham

**2011-17** Lecturer in Stem Cell Biology, Division of Cancer and Stem Cells, University of Nottingham

**2010-11** Research Fellow, MRC Scottish Centre for Regenerative Medicine, University of Edinburgh

**2008-9** Research Fellow, IGMM, Cancer Research Centre, Edinburgh

**2004-8** Career Development Fellow, MRC Human Genetics Unit, Edinburgh

**2001-3** Wellcome Trust Travelling Research Fellow, Dept. of Biomed. Sciences, University of Edinburgh

**3. SELECTED PUBLICATIONS** (*ORCID iD 0000-0002-1247-6634, ResearcherID B-8291-2016)*

1. Ramsawhook AH, Lewis LC, Eleftheriou M, Abakir A, Durczak P, Markus R, Rajani S, Hannan NRF, Coyle B, ***Ruzov A\****. (2017). Immunostaining for DNA Modifications: Computational Analysis of Confocal Images. ***J Vis Exp.*** (127), e56318, doi:10.3791/56318
2. Lewis LC, Lo PC, Foster JM, Dai N, Corrêa IR Jr, Durczak PM, Duncan G, Ramsawhook A, Aithal GP, Denning C, Hannan NRF, ***Ruzov A\****. (2017). Dynamics of 5-carboxylcytosine during hepatic differentiation: potential general role for active demethylation by DNA repair in lineage specification. ***Epigenetics***, 12(4):277-286 (Cover).
3. Ramsawhook A, Lewis L, Coyle B, ***Ruzov A\****. (2017). Medulloblastoma and ependymoma cells display increased levels of 5-carboxylcytosine and elevated TET1 expression. ***Clin Epigenetics***, 9:18. DOI 10.1186/s13148-016-0306-2
4. Abakir A, Wheldon L, Johnson AD, Laurent P, ***Ruzov A\****. (2016). Detection of Modified Forms of Cytosine Using Sensitive Immunohistochemistry. ***J Vis Exp.*** (114) e54416, doi:10.3791/54416
5. Eleftheriou M, Jimenez Pascual A, Wheldon LM, Perry C, Abakir A, Arora A, Johnson AD, Auer DT, Ellis IO, Madhusudan S, ***Ruzov A\**** (2015). 5-Carboxylcytosine levels are elevated in human breast cancers and gliomas. ***Clin Epigenetics*** 7(1):88.
6. Ciccone NA, Mwangi W, ***Ruzov A***, Smith LP, Butter C, Nair V. (2014). A B-cell targeting virus disrupts potentially protective genomic methylation patterns in lymphoid tissue by increasing global 5-hydroxymethylcytosine levels. ***Vet Res.*** 45:108.
7. Tsenkina Y, ***Ruzov A***, Gliddon C, Horsburgh K, De Sousa PA.(2014). White matter tract and glial-associated changes in 5-hydroxymethylcytosine following chronic cerebral hypoperfusion. ***Brain Res.***1592:82-100.
8. Wheldon LM, Abakir A, Ferjentsik Z, Dudnakova T, Strohbuecker S, Christie D, Dai N, Guan S, Foster JM, Corrêa IR Jr, Loose M, Dixon JE, Sottile V, Johnson AD, ***Ruzov A\****. (2014) Transient accumulation of 5-carboxylcytosine indicates involvement of active demethylation in lineage specification of neural stem cells. ***Cell Rep.*** 7(5):1353-61.
9. Jaber-Hijazi F, Lo PJ, Mihaylova Y, Foster JM, Benner JS, Tejada Romero B, Chen C, Malla S, Solana J, ***Ruzov A***, Aziz Aboobaker A. (2013). Planarian MBD2/3 is required for adult stem cell pluripotency independently of DNA methylation. ***Dev Biol.*** 384(1):141-53
10. Alioui A, Wheldon L, Abakir A, Ferjentsik Z, Johnson AD, ***Ruzov A\*.*** (2012). 5-Carboxylcytosine is localized to euchromatic regions in the nuclei of follicular cells in axolotl ovary. ***Nucleus.*** 3 (6), 565-9.
11. Almeida R D, Loose M, Sottile V, Matsa E, Denning C, Young L; Johnson AD, Gering M, ***Ruzov A\*.*** (2012). 5-Hydroxymethyl-cytosine enrichment of non-committed cells is not a universal feature of vertebrate development. ***Epigenetics.*** 7 (4), 383-9 (Cover).
12. Almeida R D, Sottile V, Loose M, De Sousa P, Johnson AD, ***Ruzov A\*.*** (2012). Semiquantitative immunohistochemical detection of 5-hydroxymethylcytosine reveals conservation of its tissue distribution between amphibians and mammals. ***Epigenetics.*** 7 (2), 137-40 (Cover).
13. ***Ruzov A\****, Tsenkina Y, Serio A, Dudnakova T, Fletcher J, Bai Y, Chebotareva T, Pells S, Hannoun Z, Sullivan G, Chandran S, Hay D, Bradley M, Wilmut I and De Sousa PA. (2011). Lineage specific distribution of high levels of genomic 5-hydroxymethylcytosine in mammalian development. (12 July 2011); ***Cell Res.*** 21, 1332-1342. ***\* - corresponding author.***
14. Nestor C, ***Ruzov A***, Meehan R, Dunican D. (2010). Enzymatic approaches and bisulfite sequencing cannot distinguish between 5-methylcytosine and 5-hydroxymethylcytosine in DNA. ***Biotechniques.*** 48(4):317-9.
15. ***Ruzov A***, Shorning B, Dunican D, Leonhardt H, Mortusewicz O and Meehan RR. (2009). MBD4 and MLH1 are required for apoptotic induction in xDNMT1-depleted embryos. ***Development***, 136(13):2277-86.
16. ***Ruzov A***, Savitskaya E, Hackett JA, Reddington JP, Prokhortchouk A, Madej MJ, Chekanov N, Minghui L, Dunican DS, Prokhortchouk E, Pennings S and Meehan RR. (2009). The non-methylated DNA binding function of Kaiso is not required in early Xenopus laevis development. ***Development***, 136(5):729-38.
17. ***Ruzov A***, Hackett JA, Reddington JP, Prokhortchouk A, Madej MJ, Dunican DS, Prokhortchouk E, Pennings S and Meehan RR. (2009). The interaction of xKaiso with xTcf3: a revised model for integration of epigenetic and Wnt-signalling pathways. ***Development***, 136(5):723-7.
18. Dunican DS, ***Ruzov A***, Hackett JA, and Meehan RR. (2008). xDnmt1 regulates transcriptional silencing in pre-MBT Xenopus embryos independently of its catalytic function. ***Development***, 135(7):1295-302
19. Meehan RR, Dunican DS, ***Ruzov A***, Pennings S. (2005). Epigenetic silencing in embryogenesis. ***Exp Cell Res.*** 309:241-9. (Cover).
20. ***Ruzov A***, Dunican DS, Prokhortchouk A, Pennings S, Stancheva I, Prokhortchouk E, Meehan RR. (2004). Kaiso is a genome-wide repressor of transcription that is essential for amphibian development. ***Development***. 131(24):6185-94.
21. Alipov ED, Tyrsina EG, Sarimov RM, ***Ruzov AS***, Prokhortsuk EB. (2004). Acquired radioresistance of progeny of irradiated cells is accompanied by rearrangements in chromatin organization. ***Radiats Biol Radioecol.*** 44(2):188-97.
22. ***Ruzov AS***, Mertsalov IB, Meehan R, Kiselev SL, Buchman VL, Korobko IV (2004). Cloning and developmental expression of MARK/Par-1/MELK-related protein kinase xMAK-V in Xenopus laevis. ***Dev Genes and Evol***, 214:139-143.
23. Smirnov AS, ***Ruzov AS***, Budanov AV, Prokhortchouk AV, Ivanov AV, Prokhortchouk EB. (2001) High constitutive level of NF-kappaB is crucial for viability of adenocarcinoma cells. ***Cell Death Differ*** 8(6):621-30.
24. Prokhorchuk AV, Aĭtkhozhina DS, Sablina AA, ***Ruzov AS***, Prokhorchuk EB. (2001) KAISO--a new member of the BTB/POZ family specifically binds to methylated DNA sequences. ***Genetika.*** 37(6):737-44.
25. Prokhortchouk A, Hendrich B, Jorgensen H, ***Ruzov A***, Wilm M, Georgiev G, Bird A, Prokhortchouk E (2001) The p120 catenin partner Kaiso is a DNA methylation-dependent transcriptional repressor. ***Genes Dev*** 15(13):1613-18.
26. Prokhorchuk AV, ***Ruzov AS***. (2000). Genome methylation and its role in functioning of the eukaryotic organism. ***Genetika***. 36(11):1475-86.
27. Smirnov AS, Budanov AV, ***Ruzov AS***, Ivanov AV, Prokhorchuk AV, Gnuchev NV, Prokhorchuk EB. (2000). A high constitutive level of NF-kappa B is necessary for viability of murine adenocarcinoma cells--possible role of p53]. ***Mol Biol (Mosk).*** 34(5):775-82.
28. Smirnov AS, ***Ruzov AS***, Gnuchev NV, Prokhorchuk EB. (2000). Mechanisms maintaining high constitutive levels of NF-kappa B in murine adenocarcinoma cells. ***Dokl Biochem.*** 373(1-6):148-9.
29. ***Ruzov AS***, Georgiev GP, Prokhorchuk EB (2000) Functional characteristics of the promoter region of the tag7/PGRP gene in KSML0, KSML100 murine mammary adenocarcinoma cell lines and VMR liver. ***Genetika*** 36(5):636-6434.
30. Prokhortchouk EB, Prokhortchouk AV, ***Rouzov AS***, Kiselev SL, Lukanidin EM, Georgiev GP (1998) A minisatellite "core" element constitutes a novel, chromatin-specific activator of mts1 gene transcription. ***J Mol Biol*** 280(2):227-2363.
31. Akopov SB, Nikolaev LG, Tyrsin OYu, ***Ruzov AS***, Sverdlov ED. (1997). 14 sequences from Chinese hamster genome preferentially binding to the nuclear matrix. ***Bioorg Khim.*** 1997 Sep;23(9):727-31.

 ***Book Chapters***

1. Abakir A, Wheldon LM, ***Ruzov AS***. Immunohistochemical Detection of Oxidized Forms of 5-Methylcytosine in Embryonic and Adult Brain Tissue. (2016) In ***Epigenetic Methods in Neuroscience Research***, Karpova Nina (Ed.) ***Neuromethods****,* Vol. 105,*Springer.* ISBN 978-1-4939-2753-1

**4. RESEARCH GRANTS**

* BBSRC BB/N005759/1: Studying potential interplay between active demethylation and WT1-dependent transcriptional regulation during glial differentiation. 2016-2019, **£627,640** **(PI)**
* John Mortimer Shipstone Ratcliff Medical PhD Scholarship: Studying epigenetic mechanisms determining commitment of human pluripotent cells to hepatic endoderm. 2017-2020, **approx. £75,000 (PI, Primary Supervisor)**
* University of Nottingham, Faculty of Medicine and Health Sciences Research Booster Scheme: Identification of genomic sequences undergone cell cycle-specific accumulation of N6-methyldeoxyadenosine (6mA) in human pluripotent stem cells (hPSCs), 2017, **£9,981 (PI)**
* MRC MR/N013913/1, IMPACT DTP PhD Studentship supplementary fund: PhD student training in NGS library preparation, sequencing and bioinformatics analysis. 2017, **£4,966 (PI)**
* MRC MR/N013913/1, IMPACT DTP PhD Studentship: Investigating the biological roles of oxidised forms of 5-methylcytosine and active demethylation in human pluripotent cell lines. 2016-2019, **approx. £75,000 (PI, Primary Supervisor)**
* BBSRC BB/J014508/1, DTP PhD Studentship: Epigenetic regulation of neuronal plasticity. 2016-2019, **approx. £60,000 (co-I, Second Supervisor)**
* BBSRC BB/J014508/1, DTP PhD Studentship: Studying the functions of Tet1 and Tet3 proteins in zebrafish and hESCs model systems. 2016-2019, **approx. £60,000 (co-I, Second Supervisor)**
* University of Nottingham FRSG enhancement initiative: Identification of genomic sequences undergoing active demethylation during spermatogenesis. 2012-2013, **£20,000** **(PI)**
* Royal Society Research Grant RG110530: Understanding the role of 5-hydroxymethylcytosine (5-hmC) in human pluripotent stem cells (hPSCs): do Kaiso-like proteins interact with 5-hmC-enriched DNA?2012-2013, **£15,000** **(PI)**

 ***Fellowships***

* MRC Career Development Fellowship: MRC Human Genetics Unit, Edinburgh, 2004–2008.
* Wellcome Trust Traveling Research Fellowship: The role of Kaiso, a putative transcriptional repressor, in Xenopus development. University of Edinburgh, 2001 – 2003, **approx.** **£100,000** (**R. Meehan and A. Ruzov**)
* Short term ICGEB fellowship: Investigation of transcription regulation of tag7/PGRP gene in different model systems. ICGEB, Trieste, Italy, Mar 1998 - Aug 1998.

***Travel grants*:** University of Nottingham International Collaboration Award: Studying molecular mechanisms of target-specific TET1-induced transcriptional activation of tumour suppressor p16 (visiting Beijing Cancer Hospital, China), 2016; ISSCR Travel Award, 2015; University of Nottingham Academic Conferences Fund, 2015; Royan Congress Travel Grant, 2015; CDB RIKEN Travelling Fellowship, (Logic of Development Symposium, Kobe, Japan) 2006

**5. SELECTED PRESENTATIONS**

* **Speaker:** The 16th Royan International Twin Congress, Tehran, Iran, Sep 2-4, 2015
* **Speaker:** ISSCR 2015 Annual Meeting, Stockholm, Sweden, Jun 24-27, 2015
* **Speaker:** The New Epigenetic Mark: 5-Hydroxymethylcytosine – What is its Function? Biochemical Society Conference, Cambridge, UK, Jun 2013
* **Speaker:** Epigenetics and Stem Cells Abcam conference, Cambridge, UK, Oct 16-17, 2012
* **Speaker:** Meeting of Scottish Stem Cell Biology Group, Edinburgh, UK Oct 18, 2007
* **Speaker:** Wellcome Trust International Fellows’ Meeting, London, UK Jan 20, 2003

***Selected seminars*:** Trinity College, Dublin, Ireland, Oct 2016; Cochin Institute, Paris, France, Jun 2016; Beijing Cancer Hospital, Peking University, China, Apr 2016;IRIBHM, Brussels, Belgium, Nov 2015; University of Perugia, Italy, May 2015; University of Perugia, Italy, Mar 2013; GReD, Clermont University, France, Mar 2012; UTMB, Galveston, Texas, USA, Mar, 2012; School of Biosciences, Cardiff University, UK, Jan 2012; Beijing Cancer Hospital, Peking University, Beijing, China, Mar 2011; NAIST, Nara, Japan, Mar 2011; Babraham Institute, Cambridge, UK, Oct 2009; Roslin Institute, Roslin, UK, Jun 2009; Kyoto Institute of Technology, Kyoto, Japan, Apr 2006; NAIST, Nara, Japan, Apr 2006; IMP, Vienna, Austria, Sep 2003; IGB RAS, Moscow, Russia, Sep 2003; London Chromatin Club, UK, Jan 2003

**6. TEACHING**

* **Course Director:** MSc in Stem Cell Technology and Regenerative Medicine, UoN 2018-
* **Lecturer and Module convener**: A34CDM, Cell, Developmental and Molecular Biology, MSc Stem Cell Technology, University of Nottingham
* **Lecturer**: A34ESC, Embryonic Stem Cells; B34RTS, Research Skills & Stem Cell Technology Exploitation (2011-17), MSc Stem Cell Technology, University of Nottingham
* **Research projects’ supervisor**: A34SCP, Regenerative Medicine Research Projects, MSc Stem Cell Technology, University of Nottingham, 1-2 students/year
* **Guest lecturer:** A34C01, Molecular Basis of Cancer, MSc in Oncology, UoN; A12REP, Reproduction, BSc in Medical Physiology and Therapeutics, UoN
* **Tutor:** MSc Stem Cell Technology, The University of Nottingham
* **Primary supervisor** for 4 PhD students and 1 MRes student, **co-supervisor** for 3 PhD students, **internal assessor** for 3 PhD students and 1 MRes student

**7. COMMITTEES MEMBERSHIPS, EDITORIAL AND REVIEWER COMMITMENTS**

* **Evaluation committee** **member**: Agence nationale de la recherché (ANR), France, Génétique selection panel "Genetics, genomics, gene expression and regulatory RNAs", 2014/2015, 2015/2016, 2017/2018
* **Grant proposal reviewer**: BBSRC, UK; Agence Nationale de la Recherché (ANR), France,
* **Manuscript reviewer:** *Cell Rep., EMBO J., Nucleic Acids Res., Ageing Res. Rev., Epigenetics, Clin Epigenetics, J Cell Mol Med., BioEssays, Sci. Rep., Oncotarget, PLOS ONE, Psychoneuroendocrinology, J Mol Histol., J Tissue Eng., Biol. Chem., Front Genet., F1000Research*
* **Guest Associate Editor**: Epigenomics and Epigenetics in Front Cell Dev Biol. and Front Genet., Frontiers Research Topic Editor: Beyond CpG Methylation: New Modifications in Eukaryotic DNA