

CURRICULUM VITAE

Peter J. Gillespie

PERSONAL DETAILS

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Date of Birth July 1974

Place of Birth Glasgow, UK

EDUCATION

1992 - 1997 B.Sc. First Class Honours (Medical Biochemistry)
University of Glasgow, Glasgow

1997 - 2001 Ph.D. (Biochemistry)
ICRF Clare Hall Laboratory, Hertfordshire &
University of Dundee, Dundee

Title: The Reconstitution of Replication Licensing

Supervisor: Professor J. Julian Blow

Examiners: Professor John F. Diffley & Professor Paul R. Clarke

EMPLOYMENT

2001 -2005 Research Fellow
Cold Spring Harbor Laboratory, Cold Spring Harbor, New York, USA

Project: The Coordination of DNA Replication and the Establishment of Sister Chromatid Cohesion
Supervisor: Professor Tatsuya Hirano

2005 - 2024 Senior Research Associate
University of Dundee, Dundee

Project: The Regulation of Genome Duplication
Supervisor: Professor J. Julian Blow

2024 - Pres. Senior Postdoctoral Research Assistant
University of East Anglia, Norwich

Project: The Regulation of Chromosome Maintenance
Supervisor: Professor J. Julian Blow

AWARDS AND SCHOLARSHIPS

1996 Carnegie Trust Prize Vacation Scholarship

1997 University of Glasgow Merit Award

1997 Imperial Cancer Research Fund Postgraduate Studentship

2001 - 2002 Andrew Seligson Memorial Fellowship of CSHL Lab Association

2002 - 2005 Jane Coffin Childs Memorial Fund for Medical Research Fellowship

PUBLICATIONS

(1) Gillespie PJ and Blow JJ,
Nucleoplasmin-mediated chromatin remodelling is required for *Xenopus* nuclei to become licensed for DNA replication.
Nucleic Acids Research, 28(2): 472-480 (2000).

(2) Blow JJ, Gillespie PJ, Francis D and Jackson D,
Replication origins in *Xenopus* egg extracts are 5-15kb apart and are activated in clusters that fire at different times.
Journal of Cell Biology, 152(1): 15-25 (2001).

(3) Gillespie PJ, Li A and Blow JJ,
The reconstitution of licensed replication origins on *Xenopus* nuclei using purified proteins.
BMC Biochemistry, 2(1): 15 (2001).

- (4) Chapman NC, Webster GA, Gillespie PJ, Wilson B, Crouch DH and Perkins ND,
A novel form of the RelA nuclear factor kappaB subunit is induced by and forms a complex with the proto-oncogene c-Myc.
Biochemical Journal, 366(2): 459-469 (2002).
- (5) Gillespie PJ and Hirano T,
SMC Proteins.
Current Biology, 12(15): R513 (2002).
- (6) Gillespie PJ and Hirano T,
Scc2 couples replication licensing to the establishment of sister chromatid cohesion in *Xenopus* egg extracts.
Current Biology, 14(1): 1598-1603 (2004).
- (7) Gandhi R, Gillespie PJ and Hirano T,
Human WAPL is a cohesin-binding protein that promotes sister-chromatid resolution in mitotic prophase.
Current Biology, 16(24): 2406-2417 (2006).
- (8) Gillespie PJ, Khoudoli G, Stewart G, Swedlow JR and Blow JJ,
ELYS/MEL-28 chromatin association coordinates nuclear pore complex assembly and replication licensing.
Current Biology, 17(19):1657-1662 (2007).
- (9) Khoudoli GA, Gillespie PJ, Stewart G, Andersen JS, Swedlow JR and Blow JJ,
Temporal profiling of the chromatin proteome reveals system-wide responses to replication inhibition.
Current Biology, 18(11):838-843 (2008).
- (10) Blow JJ and Gillespie PJ,
Replication licensing and cancer – a fatal entanglement?
Nature Review Cancer, (10):799-806 (2008).
- (11) De Marco V, Gillespie PJ, Li A, Karantzelis N, Christodoulou E, Klompaker R, van Gerwen S, Fish A, Petoukhov MV, Iliou MS, Lygerou Z, Medema RH, Blow JJ, Svergun DI, Taraviras S and Perrakis A,
Quaternary structure of the human Cdt1-geminin complex regulates DNA replication licensing.
PNAS, 106(47) (2009).
- (12) Thomson AM, Gillespie PJ and Blow JJ,
Replication factory activation can be decoupled from the replication timing program by modulating CDK levels.
Journal of Cell Biology, 188(2):209-221 (2010).
- (13) Gillespie PJ and Blow JJ,
Clusters, factories and domains: the complex structure of S-phase comes into focus.
Cell Cycle, 9(16):3218-3226 (2010).
- (14) Sasaki T, Li A, Gillespie PJ, Blow JJ and Gilbert DM,
Evidence for a mammalian late-G1 phase inhibitor of replication licensing distinct from geminin or Cdk activity.
Nucleus, 2(5):455-464 (2011).
- (15) Gillespie PJ, Gambus A and Blow JJ,
Preparation and use of *Xenopus* egg extracts to study DNA replication and chromatin associated proteins.
Methods, 57(2):203-213 (2012).
- (16) Caillat C, Pefani DE, Gillespie PJ, Taraviras S, Blow JJ, Lygerou Z and Perrakis A,
The Geminin and Idas coiled coils preferentially form a heterodimer that inhibits Geminin function in DNA replication licensing.
Journal of Biological Chemistry, 288(44):31624-33164 (2013).
- (17) Poh WT, Chadha GS, Gillespie PJ, Kaldis P and Blow JJ,
Xenopus Cdc7 executes its essential function early in S phase and is counteracted by checkpoint-regulated protein phosphatase 1.
Open Biology, 4:130-138 (2014).
- (18) Gillespie PJ, Neusiedler J, Creavin K, Chadha GS and Blow JJ,
Cell Cycle Synchronization in *Xenopus* Egg Extracts.
Methods Molecular Biology, 1342:101-147 (2016).

- (19) Chadha GS, Gambus A, Gillespie PJ and Blow JJ, Xenopus Mcm10 is a CDK-substrate required for replication fork stability. *Cell Cycle*, 15(16):2183-2195 (2016).
- (20) Alver RC, Chadha GS, Gillespie PJ and Blow JJ, Reversal of DDK-Mediated MCM Phosphorylation by Rif1-PP1 Regulates Replication Initiation and Replisome Stability Independently of ATR/Chk1. *Cell Reports*, 18(10):2508-2520 (2017).
- (21) Gardner NJ*, Gillespie PJ*, Carrington JT, Shanks EJ, McElroy SP, Haagenen EJ, Frearson JA, Woodland A and Blow JJ, The High-Affinity Interaction Between ORC and DNA That Is Required for Replication Licensing is Inhibited by 2-Arylquinolin-4-Amines. *Cell Chemical Biology*, 24(8):981-991 (2017).
- (22) Gillespie PJ and Blow JJ, The Replication Licensing System. *Encyclopaedia of Cancer*, 3rd Edition (2018).
- (23) Shoaib M, Walter D, Gillespie PJ, Izard F, Fahrenkrog B, Lleres D, Lerdru M, Johansen JV, Hansen K, Julien E, Blow JJ and Sorensen CS, Histone H4K20 Methylation Mediated Chromatin Compaction Threshold Ensures Genome Integrity by Limiting Replication Licensing. *Nature Communications*, 9(1):3704 (2018).
- (24) Volpi I*, Gillespie PJ*, Chadha GS and Blow JJ, The Role of DDK and Treslin-MTBP in Coordinating Replication Licensing and Pre-Initiation Complex Formation. *Open Biology*, 11:210121 (2021).
- (25) Gillespie PJ and Blow JJ, DDK: The Outsourced Kinase of Chromosome Maintenance. *Biology (Basel)*, 11(6):877 (2022).
- (26) Kawasoe Y, Shimokawa S, Gillespie PJ, Blow JJ, Tsurimoto T and Takahashi TS, The Atad5 RFC-like complex is the major unloader of proliferating cell nuclear antigen in Xenopus egg extracts. *Journal of Biological Chemistry*, 300(1):105588 (2024).

JOURNAL AWARDS, COVERS, EDITORIALS & PREVIEWS

- (1) "License to glue"
'Research Roundup', *Journal of Cell Biology*,
On the publication of (6), Gillespie & Hirano, 2004.
- (2) "A Wapl a day keeps the sisters apart: Wapl and cohesion dynamics"
'Preview', *Developmental Cell*
On the publication of (7), Gandhi, Gillespie & Hirano, 2006.
- (3) "The NPC gets plugged in"
'Leading Edge Cell Biology Select', *Cell*,
On the publication of (8), Gillespie et al, 2007.
- (4) "Cdks keep replication on time"
Cover image and title paper, *Journal of Cell Biology*,
On the publication of (12), Thomson, Gillespie & Blow, 2010.
- (4b) "Cdks set the replication schedule"
'In This Issue', *Journal of Cell Biology*,
On the publication of (12), Thomson, Gillespie & Blow, 2010.
- (5) "10 years of Open Biology: Editors' Highlights" Volpi & Gillespie, et al, selected as 1 of 9 highlight papers from the first decade of publication of Open Biology.

IN PREPARATION

(1) Gillespie, PJ, Creavin K, Score AJ, Khoudoli GA, Karschau J, Da Moura A, Kisieleska J, Albergante L, Newman TJ and Blow JJ,
The density and distribution of licensed replication origins pre-MBT solves the replication random gap problem in developing *Xenopus laevis* eggs.

EDITORIAL

2022 - Pres. Section Board Member: Cell Biology
Biology (Basel)

2023 - Pres. Editor of Biology Special Issue: The Replication Licensing System
6 articles published, 2 in preparation