

CURRICULUM VITAE

Personal Data:

Name: John H. J. Petrini
Date of Birth: May 30, 1960
Place of Birth: Detroit, MI
Office Address: Memorial Sloan-Kettering Cancer Center
1275 York Avenue
RRL 901 C
New York, NY 10021
Tel. #: 212-639-2927
E-mail: petrinij@mskcc.org
Fax #: 646-422-2062

Education:

1982 BA Kalamazoo College
Kalamazoo, MI
1988 Ph. D. University of Michigan Medical School
Ann Arbor, MI

Post-doctoral training:

1988-1989 Postdoctoral Associate, Fox Chase Cancer Center.
In the laboratory of Dr. M. J. Bosma
1989-1994 Postdoctoral Associate, Dana-Farber Cancer Institute,
Harvard Medical School. In the laboratory of Dr. David
T. Weaver.

Academic Appointments:

1994-1999 Assistant Professor, Department of Medical Genetics
University of Wisconsin Medical School
1999-2002 Associate Professor (with tenure), Department of Medical
Genetics, University of Wisconsin Medical School
2002-Present Member, Memorial Sloan Kettering Cancer Center
2002-Present Professor, Weill Graduate School of Medical Sciences at Cornell
University
2016-Present Chair, SKI Molecular Biology Program

Service:

2003-2014 Founding Organizer, Genome Integrity Discussion Group New
York Academy of Sciences
2006-2008 Adhoc member, MGB Study Section
2008-2012 Member, Cancer Etiology Study Section
2009-2012 Member, CPRIT Review Panel BRCR3
2009-2010 FASEB meeting on Genetic Recombination – Co Organizer
2011-2012 FASEB meeting on Genetic Recombination and Genome
Rearrangements – Organizer
2012-2013 Barcelona BioMed Conference on “The DNA damage response in
human disease” – Co Organizer

2012-Present	Member of Executive Committee, American-Italian Cancer Foundation Scientific Advisory Board
2014-Present	Chair, External Advisory Board of the Basser Center at the University of Pennsylvania
2014-Present	Member, CPRIT Review Panel BR3
2014-Present	SKI Committee on Appointments and Promotions
2014-Present	Member, Executive Committee, MSKCC Center for Metastasis Research
2014-Present	Director and Founder, MSKCC Functional Genomics Initiative
2014-Present	Member, Data Usage Committee, Center for Molecular Oncology
2015-2018	Member, Executive Committee, MSKCC GMTEC Committee
2016-2020	Member, Executive Committee, MSKCC Immunogenomics and Personalized Oncology Platform
2019-2023	Member, Executive Committee, Basic Research Innovation Award
2019-Present	Member, Executive Committee, American Association for Cancer Research
2021	Member, SAB MSKCC Pathology Department Committee
2021	Member, Faculty Recruitment Committee, SKI
2021	Internal Advisory Board for the Tow Center for Developmental Oncology

Editorial Boards

1999-2003	Member of Editorial Board, Mutation Research
1999-2002	Member of Editorial Board, Molecular and Cellular Biology
2005-2012	Senior Editor, Molecular Cancer Research
2009-2013	Joint Editor-in-Chief, Genome Integrity
2010-2018	Board of Review Editors, Science
2021-Present	Member of Editorial Board, NAR Cancer

Awards and Fellowships:

1993-1996	Leukemia Society of America Special Fellowship
1995-1997	ACS Research Grant Recipient
1995-1996	Collaborative Research Award (UW Medical School)
1996-1998	Basil O'Connor Scholar of The March of Dimes Foundation
1996-2000	Milwaukee Foundation Shaw Scientist Award
1999-2000	Human Frontiers Research Grant Awardee
2000-2001	Radiation Research Society Michael Fry Award.
2002-2006	The Joel and Joan Smilow Initiative for Research in Genomic Integrity
2005-Present	Paul A. Marks Chair in Molecular Cell Biology
2012-2022	NIGMS MERIT Award

Student research preceptorships:

Debra A. Bressan	1994 to 1999	UW Graduate student in Genetics
Richard S. Maser	1994 to 2000	UW Graduate student in Genetics
Junyu Lin	1998 to 1999	UW Graduate student in Genetics
Carla F. Bender	1998 to 2002	UW Graduate student in Genetics
Bret Williams	1999 to 2005	UW CMB Graduate student
Chantal Ly	1999 to 2002	UW CMB Graduate student
Santos Franco	2001 to 2002	UW CMB Graduate student
James Flemming	2003 to 2004	Cornell MCB Graduate student
Jan Theunissen	2001 to 2005	Cornell MCB Graduate student
Carrie Adelman	2002 to 2008	Cornell MCB Graduate student
Muge Akpinar	2008 to 2010	GSK Graduate student
Kendall Olsen	2009 to 2010	GSK Graduate student
Esther Sanchez de Leon Ley	2017 to 2023	Cornell BCMB Graduate Student
Hexiao Wang	2017 to 2023	Cornell BCMB Graduate Student

Publications:

(⇒ Indicates shared senior authorship)

1. Szurek, P., **Petrini, J.H.** and Dunnick W. (1985). *Complete nucleotide sequence of the murine gamma 3 switch region and analysis of switch recombination sites in two gamma 3-expressing hybridomas.* J Immunol, **135**. 620-626.
2. **Petrini, J.H.**, Shell, B., Hummel, M., and Dunnick, W. (1987). *The immunoglobulin heavy chain switch: structural features of gamma 1 recombinant switch regions.* J Immunol, **138**. 1940-1946.
3. Carroll, A.M., Hardy, R.R., **Petrini, J.H.**, and Bosma, M.J. (1989). *T cell leakiness in scid mice.* Curr Top Microbiol Immunol, **152**. 117-123.
4. **Petrini, J.H.**, and Dunnick W.A. (1989). *Products and implied mechanism of H chain switch recombination.* J Immunol, **142**. 2932-2935.
5. **Petrini, J.H.**, Carroll A.M., and Bosma M.J. (1990). *T-cell receptor gene rearrangements in functional T-cell clones from severe combined immune deficient (scid) mice: reversion of the scid phenotype in individual lymphocyte progenitors.* Proc Natl Acad Sci U S A, **87**. 3450-3453.
6. Schultz, C., **Petrini, J.H.**, Collins, J., Claflin, J.L., Denis, K.A., Gearhart, P., Gritzmacher, C., Manser, T., Schulman, M., and Dunnick, W. (1990). *Patterns and extent of isotype-specificity in the murine H chain switch DNA rearrangement.* J Immunol, **144**. 363-370.
7. **Petrini, J.H.**, Huwiler K.G., and Weaver D.T. (1991). *A wild-type DNA ligase I gene is expressed in Bloom's syndrome cells.* Proc Natl Acad Sci U S A, **88**. 7615-7619.
8. Vivier, E., Rochet, N., Ackerly, M., **Petrini, J.H.**, Levine H., Daley J., and Anderson, P. (1992). *Signaling function of reconstituted CD16: zeta: gamma receptor complex isoforms.* Int Immunol, **4**. 1313-1323.
9. **Petrini, J.H.**, Donovan, J.W., Dimare, C., and Weaver, D.T. (1994). *Normal V(D)J coding junction formation in DNA ligase I deficiency syndromes.* J Immunol, **152**. 176-183.

10. **Petrini, J.H.**, Walsh, M.E., DiMare C., Chen, X.N., Korenberg, J.R. and Weaver, D.T. (1995). *Isolation and characterization of the human MRE11 homologue*. *Genomics*, **29**. 80-86.
11. **Petrini, J.H.**, Y. Xiao, and Weaver, D.T. (1995). *DNA ligase I mediates essential functions in mammalian cells*. *Mol Cell Biol*, **15**. 4303-4308.
12. Dolganov, G.M., Maser, R.S., Novikov, A., Tosto, L., Chong, S., Bressan, D.A., and **Petrini, J.H.**, (1996). *Human Rad50 is physically associated with human Mre11: identification of a conserved multiprotein complex implicated in recombinational DNA repair*. *Mol Cell Biol*, **16**. 4832-4841.
13. Maser, R.S., Monsen, K.J., Nelms, B.E., and **Petrini, J.H.** (1997). *Mre11 and hRad50 nuclear foci are induced during the normal cellular response to DNA double-strand breaks*. *Mol Cell Biol*, **17**. 6087-6096. PMID: PMC232458
14. **Petrini, J.H.**, Bressan, D.A. and Yao, M.S. (1997). *The RAD52 epistasis group in mammalian double strand break repair*. *Semin Immunol*, **9**. 181-188. PMID: 9200329
15. Bressan, D.A., Olivares, H.A., Nelms, B.E., and **Petrini, J.H.** (1998). *Alteration of N-terminal phosphoesterase signature motifs inactivates *Saccharomyces cerevisiae* Mre11*. *Genetics*, **150**. 591-600. PMID: PMC1460356
16. Carney, J.P., Maser R.S., Olivares, H., Davis, E.M., Le Beau, M., Yates JR 3rd, Hays, L., Morgan W.F., and **Petrini, J.H.** (1998). *The hMre11/hRad50 protein complex and Nijmegen breakage syndrome: linkage of double-strand break repair to the cellular DNA damage response*. *Cell*, **93**. 477-486.
17. Nelms, B.E., Maser, R.S., MacKay, J.F., Lagally M.G., and **Petrini, J.H.** (1998). *In situ visualization of DNA double-strand break repair in human fibroblasts*. *Science*, **280**. 590-592.
18. Bressan, D.A., Baxter, B.K. and **Petrini, J.H.** (1999). *The Mre11-Rad50-Xrs2 protein complex facilitates homologous recombination-based double-strand break repair in *Saccharomyces cerevisiae**. *Mol Cell Biol*, **19**. 7681-7687.
19. Luo, G., Yao, M.S. Bender, C.F., Mills, M., Bladl, A.R., Bradley, A. and **Petrini, J.H.**, (1999). *Disruption of mRad50 causes embryonic stem cell lethality, abnormal embryonic development, and sensitivity to ionizing radiation*. *Proc Natl Acad Sci U S A*, **96**. 7376-7381.
20. **Petrini, J.H.** (1999). *The mammalian Mre11-Rad50-nbs1 protein complex: integration of functions in the cellular DNA-damage response*. *Am J Hum Genet*, **64**. 1264-1269.
21. ⇒ Stewart, G.S., Maser, R.S., Stankovic, T., Bressan, D.A., Kaplan, M.I., Jaspers, N.G., Raams, A., Byrd, P.J., **Petrini, J.H.**, and Taylor, A.M. (1999). *The DNA double-strand break repair gene hMRE11 is mutated in individuals with an ataxia-telangiectasia-like disorder*. *Cell*, **99**. 577-587.
22. Girard, P.M. Foray, N., Stumm, M., Waugh, A., Riballo, E., Maser, R.S., Phillips, W.P., **Petrini, J.H.**, Arlett, C.F., and Jeggo, P.A. (2000). *Radiosensitivity in Nijmegen Breakage Syndrome cells is attributable to a repair defect and not cell cycle checkpoint defects*. *gir.*, **60**. 4881-4888.
23. Lim, D.S., Kim, S.T., Xu, B., Maser, R.S., Lin, J., **Petrini, J.H.**, and Kastan, M.B. (2000). *ATM phosphorylates p95/nbs1 in an S-phase checkpoint pathway*. *Nature*, **404**. 613-617.
24. **Petrini, J.H.** (2000). *When more is better*. *Nat Genet*, **26**. 257-258.
25. **Petrini, J.H.** (2000). *The Mre11 complex and ATM: collaborating to navigate S phase*. *Curr Opin Cell Biol*, **12**. 293-296.

26. Wu, X., **Petrini, J.H.**, Heine W.F., Weaver D.T., Livingston, D.M. and Chen, J. (2000). *Independence of R/M/N focus formation and the presence of intact BRCA1*. Science, **289**. 11.
27. Zhu, X.D., Kuster, B., Mann, M. **Petrini, J.H.**, and de Lange, T. (2000). *Cell-cycle-regulated association of RAD50/MRE11/NBS1 with TRF2 and human telomeres*. Nat Genet, **25**. 347-352.
28. **Petrini, J.H.** (2000). *S phase functions of the Mre11 complex*. CSHSQB, **65**. 405-411.
29. De Lange, T. and **Petrini, J.H.** (2001). *A new connection at human telomeres: association of the Mre11 complex with TRF2*. CSHSQB, **65**. 265-273.
30. Maser, R.S., Zinkel R., and **Petrini, J.H.** (2001). *An alternative mode of translation permits production of a variant NBS1 protein from the common Nijmegen breakage syndrome allele*. Nat Genet, **27**. 417-421.
31. Maser, R.S., Bressan D.A., and **Petrini, J.H.** (2001). *The Mre11-Rad50 Complex: Diverse Functions in the Cellular DNA Damage Response*, in *DNA Damage and Repair*, M.F. Hoekstra and J.A. Nickoloff, Editors. Humana Press: Totowa.
32. Mirzoeva, O.K. and **Petrini, J.H.** (2001). *DNA damage-dependent nuclear dynamics of the Mre11 complex*. Mol Cell Biol, **21**. 281-288.
33. ⇒Usui, T., Ogawa H., and **Petrini, J.H.** (2001). *A DNA damage response pathway controlled by Tel1 and the Mre11 complex*. Mol Cell, **7**. 1255-1266.
34. Maser, R.S., Mirzoeva, O.K., Wells, J., Olivares, H., Williams, B.R., Zinkel, R.A., Farnham, P.J., and **Petrini, J.H.** (2001). *The MRE11 complex and DNA replication: linkage to E2F and sites of DNA synthesis*. Mol Cell Biol, **21**. 6006-6016.
35. Lee, S. E., Bressan, D. A., **Petrini, J.H.**, and Haber, J. E. (2002). *Complementation between N-terminal Saccharomyces cerevisiae mre11 alleles in DNA repair and telomere length maintenance*. DNA Repair, **1**. 27-40.
36. Bender, C. F., Sikes M. L., Sullivan R., Huye L.E., Le Beau M. M., Roth D. B., Mirzoeva, O.K., Oltz E. M., and **Petrini, J.H.** (2002). *Cancer predisposition and hematopoietic failure in Rad50S/S mice*. Genes Dev, **16**. 2237-2251.
37. Williams, B. R., Mirzoeva, O. K., Morgan, W. F., Lin, J., Dunnick, W. and **Petrini, J.H.** (2002). *A murine model of Nijmegen breakage syndrome*. Current Biology, **12**. 648-653.
38. Falck, J., **Petrini, J.H.**, Williams, B. R., Lukas, J., and Bartek, J. (2002). *The DNA damage-dependent intra--S phase checkpoint is regulated by parallel pathways*. Nat Genet, **30**. 290-294.
39. ⇒Hopfner, K. P., Craig, L., Moncalian, G., Zinkel, R.A., Usui, T., Owen, B.A., Karcher, A., Henderson, B., Bodmer, J.L., McMurray, C.T., Carney, J. P., **Petrini, J.H.**, and Tainer, J. A. (2002). *The Rad50 molecular hook: a novel structure underlying Mre11 complex functions in DNA recombination and repair*. Nature, **418**. 562-566.
40. Mirzoeva, O. K. and **Petrini, J.H.** (2003). *DNA Replication-dependent nuclear dynamics of the Mre11 complex*. Mol Can Res, **1**. 207-218.
41. **Petrini, J.H.**, and Stracker T. H. (2003). *The cellular response to DNA double strand breaks: defining the sensors and mediators*. Trends Cell Biology, **13**. 458-462.
42. Theunissen, J-W. F., Kaplan, M. I., Hunt, P. A., Williams, B. R., Furguson, D. O., Alt, F. W., and **Petrini, J.H.** (2003). *Checkpoint failure and chromosomal instability without lymphomagenesis in Mre11^{ATLD1/ATLD1} mice*. Mol Cell, **12**. 1511-23.
43. Borde, V., Lin, W., Novikov, E., **Petrini, J.H.**, Lichten, M., and Nicolas, A. (2004). *Association of Mre11p with double strand break sites during yeast meiosis*. Mol Cell, **13**. 389-401.

44. **Petrini, J.H.** and Theunissen. J-W. F. (2004). *Double strand break metabolism and cancer susceptibility: Lessons from the Mre11 complex*. Cell Cycle, **3**. 541-542.
45. Stracker, T.H. Theunissen J-W. F. Morales, M. and **Petrini, J.H.** (2004). *The Mre11 complex and the metabolism of chromosome breaks: the importance of communicating and holding things together*. DNA Repair, **3**. 845-854.
46. Karlseder, J. Hoke, K. Mirzoeva, O. K. Bakkenist, C. Kastan, M. B. **Petrini, J.H.**, and de Lange T. (2004). *The telomeric protein TRF2 binds the ATM kinase and can inhibit the ATM dependent DNA damage response* PloS Biol, **2**. 1150-1156.
47. Shroff, R. Arbel-Eden, A. Pilch, D. Ira, G. Bonner, W. M. **Petrini, J.H.**, Haber, J. E. and Lichten, M. (2004). *Distribution and dynamics of chromatin modification induced by a defined DNA double strand break*. Current Biology, **14**. 1703-1711.
48. Wiltzius. Jed J. W., Hohl. Marcel, Fleming James C., **Petrini, J.H.** (2005). *The Rad50 hook domain is required for Mre11 complex functions in DNA repair, telomere maintenance and meiotic double strand break formation*. Nat Struct Mol Biol, **12**. 403-407.
49. Chiolo, I., Carotenuto, W., Maffioloetti, G., **Petrini, J.H.**, Foiani, M., and Liberi, G. (2005). *Srs2 and Sgs1 DNA helicases associate with Mre11 in different sub-complexes following checkpoint activation and CDK1-mediated Srs2 phosphorylation*. Mol Cell Biol, **25**. 5738-5751.
50. Levran, O., Attwooll, C., Henry, R.T., Milton, K.L., Neveling, K., Rio, P., Batish, S.D., Kalb, R., Velleuer, E., Barral, S., Ott, J., **Petrini, J.H.**, Schindler, D., Hanenberg, H., and Auerbach, A.D. (2005). *The BRCA1-interacting helicase BRIP1 is deficient in Fanconi anemia*. Nat Genet, **37**. 931-933.
51. Theunissen J-W. F., **Petrini, J.H.** (2005). *Methods for studying the cellular response to DNA damage: influence of the Mre11 complex on chromosome metabolism*. Methods Enzymol, **409**. 251-284.
52. Adelman, C., **Petrini, J.H.**, and Attwooll, C. (2005) *Modeling Disease in the Mouse: Lessons from DNA Damage Response and Cell Cycle Control Genes*. J Cell Biochem, **97**. 459-473.
53. Morales, M, Theunissen, JWF, Bender Kim, CF, Kitagawa, R, Kastan, M. B., **Petrini, J.H.** (2005). *The Rad50S allele promotes ATM-dependent DNA damage responses and suppresses ATM deficiency: Implications for the Mre11 complex as a DNA damage sensor*. Genes Dev, **19**. 3043-3054.
54. **Petrini, J.H.** (2005). *At the end, remodeling leads to eviction*. Nat Struct Mol Biol, **12**. 1028-1029.
55. Heikkinen K, Rapakko K, Karppinen SM, Erkko H, Knuutila S, Lundan T, Mannermaa A, Borresen-Dale, AL, Borg A, Barkardottir RB, **Petrini, J.H.**, Winqvist R. (2006). *RAD50 and NBS1 are breast cancer susceptibility genes associated with genomic instability*. Carcinogenesis, **8**. 1593-1599. PMC3006189
56. Usui, T., **Petrini, J.H.**, (2007) *The S. cerevisiae 14-3-3 Proteins Bmh1 and Bmh2 Directly Influence the DNA Damage-Dependent Functions of Rad53*. Proc Natl Acad Sci, **104**. 2797-2802. PMC1797148
57. Krishna, S., Wagener, B., Liu, Hui Ping, Sterk, R., **Petrini, J.H.**, Nickoloff, J. (2007). *Mre11 and Ku regulation of double-strand break repair by gene conversion and break-induced replication* DNA Repair, **6**. 797-808. PMC1948817
58. Cherry, S.M., Adelman, C.A., Theunissen, J.W., Hassold, T.J., Hunt, P.A., **Petrini, J.H.** (2007) *The Mre11 Complex Influences DNA Repair, Synapsis, and Crossing Over in Murine Meiosis*. Curr Biol, **17**. 373-378. PMC1839861
59. Stracker, T.H., Morales, M., Couto, S.S., Hussein, H., **Petrini, J.H.** (2007) *The C-terminus of Nbs1 is required for Mre11 complex dependent induction of apoptosis*. Nature, **447**. 218-223. PMC5994899

60. Kim, H., Vijayakumar, S., Reger, M., Harrison, J., Haber, J.E., Weil, C., **Petrini, J.H.** (2008) *Functional interactions between Sae2 and the Mre11 complex*. *Genetics*, **178**. 711-723. PMC2248341
61. Morales, M., Liu, Y., Laiakis, E. C., Morgan, W.F., Nimer, S. D., **Petrini, J.H.** (2008) *DNA damage signaling alters the behavior of primitive hematopoietic cells: A role for Mre11 complex-mediated repair of topoisomerase lesions*. *Can Res*, **68**. 2186-2193. PMC3950343
62. Adelman, C., **Petrini, J.H.** (2008) *ZIP4H (TEX11) Deficiency in the Mouse Impairs Meiotic Double Strand Break Repair and the Regulation of Crossing Over*. *PLoS Genet*, **4**. e1000042. PMC2267488
63. Stracker, T.H., Cuoto, S.S., Cardon-Cardo, C., Matos, T., **Petrini, J.H.** (2008) *Chk2 suppresses the oncogenic potential of DNA replication-associated DNA damage*. *Mol Cell*, **31**. 21-32. PMC2586815
64. Stracker, T.H., **Petrini, J.H.** (2008) *Working together and apart: the twisted relationship of the Mre11 complex and Chk2 in apoptosis and tumor suppression*. *Cell Cycle*, **23**. 3618-3621. PMC2994099
65. Stracker, T.H., Williams, B.R., Deriano, L., Theunissen, J.W., Adelman, C.A., Roth, D.B., and **Petrini, J.H.** (2009) *Artemis and NHEJ -independent influence of DNA-PKcs on chromosome stability*. *Mol Cell Biol*, **29**. 503-514. PMC2612508
66. Adelman, C., De, S., **Petrini, J.H.** (2009) *Rad50 is dispensable for the maintenance and viability of post-mitotic tissues*. *Mol Cell Biol*, **29**. 483-492. PMC2612516
67. Shull, Erin R. P., Lee, Youngsoo, Nakane, H., Stracker, T. H., Zhao, J., Russell, H. R., **Petrini, J.H.** and McKinnon, P. J. (2009). *Differential DNA damage signaling accounts for distinct neural apoptotic responses*. *ATLD and NBS*. *Genes Dev*, **23**. 171-80. PMC2648541
68. Usui, T., Foster, S. S., and **Petrini, J.H.** (2009) *Maintenance of the DNA damage checkpoint requires DNA damage-induced mediator protein oligomerization*. *Mol Cell*, **33**. 147-159. PMC2995296
69. Deriano, L., Stracker, T.H., Baker, A., **Petrini, J.H.**, Roth, D.B., (2009) *Roles for NBS1 in alternative and joining of V (D) J recombination intermediates*. *Mol Cell*, **34**. 13-25. PMC2704125
70. Adelman, C., **Petrini, J.H.** (2009) *Division Of Labor: DNA repair and the cell cycle specific functions of the Mre11 Complex*. *Cell Cycle*, **8**. 1-5. PMC3059805
71. Halberg, R., Waggoner, J., Rasmussen, K., White, A., Clipson, L., Prunuske, A., Bacher, J., Sullivan, R., Washington, M., Pitot, H., **Petrini, J. H.**, Albertson, D., Dove, W. (2009) *Long-lived Min Mice Develop Advanced Intestinal Cancers through a Genetically Conservative Pathway*. *Can Res*, **69**. 5768-75. PMC2775466
72. **Petrini, J.H.** (2009) *DNA Replication Reaches the Breaking Point*. *Cell*, **137**. 211-212. PMC392878
73. Stracker, TH, Usui, T., **Petrini, J.H.** (2009) *Taking the time to make important decisions: The checkpoint effector kinases Chk1 and Chk2 and the DNA damage response*. *DNA Repair*, **8**. 1047-1054. PMC2725228
74. Attwood, C. Akpınar, M., **Petrini, J.H.** (2009) *The Mre11 Complex and Response to Dysfunctional Telomeres*. *Mol Cell Biol*, **20**. 5540-51. PMC2756889
75. Brungmans, L., Verkaik, N., Kunen, M., Van Drunen, E., Williams, B., **Petrini, J.H.**, Kanaar, R., Essers, J., Van Gent, D. (2009) *NBS1 cooperates with homologous recombination to counteract chromosomes breakage during replication*. *DNA Repair*, **8**. 1363–1370. PMC2995292
76. Squatrito, M., Brennan, C.W., Helmeij, K., Huse T., **Petrini, J.H.**, Holland, E. (2010) *Loss of ATM/Chk2/p53 pathway components accelerates tumor development and contributes to radiation resistance in gliomas*. *Cancer Cell*, **18**. 619-29. PMC3828087
77. Stracker, T.H., **Petrini, J.H.** (2011) *The MRE11 Complex: Starting from the ends*. *Nat Rev Mol Cell Biol*, **12**. 90-103. PMC3905242

78. Hohl, M., Kwon Y., Galvan M. S., Xue, X., Tous, C., Aguilera A., Sung, P., **Petrini, J.H.** (2011) *The Rad50 Coiled Coil Domain is indispensable for Mre11 complex functions*. Nat Struct Mol Biol, **18**. 1124-31 PMC3190017
79. Foster, S., Balestrini, A., **Petrini, J.H.** (2011) *Functional interplay of the Mre11 nuclease and Ku in the response to replication-associated DNA damage*, Mol Cell Biol, **31**. 4379-4389 PMC3209331
80. Foster, S., De, S., Johnson, L.K., **Petrini, J.H.**, Stracker, T.H., (2012) *Cell cycle and DNA repair pathway specific effects of apoptosis on tumor suppression*. Proc Natl Acad Sci, **109**. 9953-9958 PMC3382548
81. Lovejoy, C., Li, W., Reisenweber, S., Thongthip, S., Bruno, J., De Lange, T., De, S., **Petrini, J.H.**, Sung, P.A., Jasin, M., Rosenbluh, J., Zwang, Y., Weir, B.A., Hatton, C., Ivanova, E., Macconaoil, L., Hanna, M., Hahn, W.C., Lue, N.F., Reddel, R.R., Jiao, Y., Kinzler, K., Vogelstein, B., Papadopoulos, N., Meeker, A.K., (2012) *Loss of ATRX, Genome Instability, and an Altered DNA Damage Response are Hallmarks of the Alternative Lengthening of Telomeres Pathway*. PLoS Genet, **7**. PMC3400581
82. Tittel-Elmer, M., Lengronne, A., Davidson, M., Bascal, J., Francois, P., Hohl, M., **Petrini, J.H.**, Pasero, P., Cobb, J. (2012) *Cohesin association to replication sites depends on Rad50 and promotes fork restart*. Mol Cell, **48**. 98-108. PMC3904740
83. Wohbold, L., Merrick, K., De, S., Amat, R., Kim, J., Larochele, S., Allen, J., Zhang, C., Shokat, K., **Petrini, J.H.**, Fisher, R. (2012) *Chemical genetics reveals a specific requirement for Cdk2 activity in the DNA damage response and identifies Nbs1 as a Cdk2 substrate in human cells*. PLoS Genet, **8**. PMC3426557
84. Kannan, K., Inagaki, A., Silber, J., Gorovets, D., Zhang, J., Kastenhuber, E., Heguy A., **Petrini, J.H.**, Chan, T., Huse, J., (2012) *Whole exome sequencing identifies ATRX mutation as a key molecular determinant in lower-grade glioma*. Oncotarget, **3**. 1194-203. PMC3717947
85. Balestrini, A., Ristic, D., Dionne, I., Liu, X., Wyman, C., Wellinger, R.C., **Petrini, J.H.** (2013) *The Ku heterodimer and the metabolism of single-ended DNA double strand breaks*. Cell Reports, **3**. 2033-45. PMC3815622
86. Ballew, B., Joseph, V., De, S., Sarek, G., Vannier, J-B., Stracker, T., Schrader, K.A., Small, T.N., O'Reilly, R., Manschreck, C., Harlan Fleischut, M.M., Sullivan, J., Stratton, K., Yeager, M., Jacobs, K., Giri, N., Alter, B.P., Boland, J., Burdett, L., Offit, K., Boulton, S., Savage, S.A., **Petrini, J.H.** (2013) *A Recessive Founder Mutation in Regulator of Telomere Elongation Helicase 1, RTEL1, Underlies Severe Immunodeficiency and Features of Hoyeraal Hreidarsson Syndrome*. PLoS Genet, **8**.: e1003695 PMC3757051
87. Gupta, G., Vanness, K., Barlas, A., Manova-Todorova, K., Wen, Y.H., **Petrini, J.H.** (2013) *The Mre11 Complex Suppresses Oncogene-driven Breast Tumorigenesis and Metastasis*. Mol Cell **52**. 353-365 PMC3902959
88. Roset, R., Inagaki, A., Hohl, M., Brenet, F., Lafrance-Vanasse, J., Lange, J., Scandura, J., Tainer, J., Keeney, S., **Petrini, J.H.** (2014) *The Rad50 hook domain regulates DNA damage signaling and tumorigenesis*. Genes Dev, **28**. 451-462 PMC3950343
89. Roth S., Rottach, A., Lotz-Havia, Amelie S., Lux, V., Muschwackh, A., Gersting, Soren W., Muntau, Ania C., Hopfner, Karl-Peter, Vanness, K., **Petrini, J.H.**, Drexler I., Leonhard, H., Ruland, J. (2014) *Rad50/Card9 interactions link cytosolic DNA sensing to IL-1 production*. Nat. Immunol. **6**. 538-45 PMC4309842
90. Katyal, S., Lee, Y., Nitiss, K., Downing, S.M., Li, Y., Zhao, J., Russell, H., **Petrini, J.H.**, Nitiss J.L., McKinnon, P.J. (2014) *ATM prevents accumulation of pathogenic topoisomerase-1 lesions*. Nat. Neurosci. **17**. 813-821 PMC4074009
91. ⇨Al-Ahmadie, H., Iyer, G., Hohl, M., Inagaki, A., Shultz N., Hanrahan, AJ., Scott, S.N., Brannon, A.R., McDermott, G.C., Pirun, M., Ostrovnya, I., Kim, P., Socci, N.D., Viale, A., Schwartz, G.K., Reuter, V., Bochner, B.H., Rosenberg, JE., Bajorin, DF., Berger, M.F., **Petrini, J.H.**, Solit, D.B., Taylor, B.S. (2014) *Synthetic lethality in ATM-deficient RAD50-*

- mutant tumors underlie outlier response to cancer therapy.* Cancer Discov. **9**. 1014-1021
PMC4155059
92. Hohl, M., Kochanczyk, T., Tous, C., Aguilera, A., Krezel, A. **Petrini, J.H.** (2015) *Interdependence of the Rad50 hook and globular domain functions.* Mol. Cell. **57**: 479-491. PMC4527088
93. Sarek, G., Vannier, J.B., Panier, S., **Petrini, J.H.**, Boulton, S., (2015) *TRF2 recruits RTEL1 to telomeres in S-phase to promote t-loop unwinding.* Mol Cell. **57**. 622-635. PMC4339303
94. Inagaki, A., Roset, R., **Petrini, J.H.** (2015) *Functions of the MRE11 complex in the development and maintenance of oocytes.* Chromosoma. **125**. 151-162. PMC4734907
95. Balestrini, A., Nicolas, L., Yang-Lott, K., Guryanova, O., Levine, R., Bassing, C., Chaudhuri, J., **Petrini, J.H.** (2015) *Defining ATM-independent Functions of the Mre11 Complex with Novel Mouse Model.* Mol Cancer Res. **14**. 185-95. PMID: PMC4755792
96. Piscuoglio, S., Ng C., Murray, M., Burke, K., Edelweiss, M., Geyer, F., Macedo, G., Inagaki, A., Papanastasiou, A., Martelotto, L., Marchio, C., Lim, R., Ioris, R., Nahar, P., De Bruijn, I., Smyth, L., Akram, M., Ross, D., **Petrini, J.H.**, Norton, L., Solit, D., Baselga, J., Brogi, E., Ladanyi, M., Weigelt, B., Reis-Filho, J. (2015) *Massively parallel sequencing of Phyllodes tumours of the breast reveals actionable mutations, and TERT promoter hotspot mutations and TERT gene amplification as likely drivers of progression.* Am. J. Pathol. **238**. 508-518. PMC4962788
97. Asai, T., Hatlen M. A., Lossos, C., Ndiaye-Lobry, D., Deblasio, A., Murata, K., Fleisher, M., Cortizas, E. M., Verdun, R. E., **Petrini, J.H.**, Nimer, S. (2016) *Generation of novel, multi-stage progressive, and transplantable model of plasma cells neoplasms.* Sci. Rep. **6**, 22760; doi: 10.1038/srep22760. PMC4785351
98. Rocha, P., Raviram, R., Fu, Y., Kim, J.H., Luo, V., Aljoufi, A., Swanzey, E., Pasquarella, A., Balestrini, A., Miraldi, E., Bonneau, R., **Petrini, J.H.**, Schotta, G., Skok, J.,(2016) *A damage independent role for 53BP1 that impacts break order and Igh architecture during CSR.* Cell Rep. **16**. 48-55 PMC4927351
99. Park YB, Hohl, M., Padjasek, M., Jeong, E., Kyeong J.S., Kretzel, A., **Petrini, J.H.**, Cho, Y., (2017) *Eukaryotic Rad50 Functions as a Rod-shaped Dimer.* Nat Struct Mol Biol (3) 248-257 PMC5625350
100. Kim, JH., Grosbart, M., Anand, R., Wyman C., Cejka, P., **Petrini, J.H.**, (2017) *The Mre11-Nbs1 interface is essential for viability and tumor suppression.* Cell Rep. **18**. (2) 496-507 PMC5234850
101. Henssen, A. G., Reed, C., Jiang, E., Garcia, H.D., von Stebut, J., MacArthur, I.C., Hundsdoerfer, P., Kim, J.H., de Stanchina, E., Kuwahara, Y., Hosoi, H., Ganem, N., Dela Cruz, F., Kung, A. L., Schulte, J.H., **Petrini, J.H.**, Kentsis, A. (2017) *Therapeutic targeting of PGBD5-induced DNA repair dependency in pediatric solid Tumors.* Science Transl Med. **9** (414) DOI: 10.1126/scitranslmed.aam9078 PMC5683417
102. Hung, P.J., Johnson, B., Chen, B., Byrum, A.K., Bredemeyer, A.L., Yewdell, W.T., Johnson, T.E., Lee, B.J., Deivasigamani, S., Hindi, I., Amatya, P., Gross, M. L., Paull, T., Pispia, D.J., Chaudhuri, J., **Petrini, J.H.**, Mosammamarast, N., Amarasinghe, G.K., Zha, S., Tyler, J.K., Sleckman, B.P. (2018) *MRI is a DNA Damage Response Adaptor during Classical Non-Homologous End Joining.* Mol Cell (2): 332-342 PMC6083883
103. Huang, G., Kaufman, AJ., Ryan, RJH, Romin, Y., Huryn, L., Bains, S., Manova-Todorova, K., Morris, PL., Hunnicutt, GR., Adelman, CA., **Petrini, J.H.**, Ramanathan, Y., Singh, B., (2019) *Mouse DCUN1D1 (SCCRO) is required for spermatogenetic individualization.* PLoS One **14**:e0209995. PMC6336273
104. Kim, JH., Penson, A.V., Taylor, B.S., **Petrini, J.H.**, (2019) *Nbn-Mre11 interaction is required for tumor suppression and genomic integrity.* 2019:201905305. doi: 10.1073/pnas.1905305116. Proc Natl Acad Sci. PMC6660787

105. Mojumdar, A., Sorenson, K., Hohl, M., Lees-Miller, S., Dubrana, K., **Petrini, J.H.**, Cobb, A.J. (2019) *Nej1 interacts with Mre11 to regulate -tethering and Dna2 binding at DNA double-strand breaks*. Cell Rep. 28 (6): 1565-1573 PMC6746346
106. Hohl, M., Mojumar, A., Hailemariam, S. Kuryavi, V., Ghisays, F., Sorenson, K., Chang, M., Taylor, B.S., Patel, D., Burgers, P.M., Cobb, J.A., **Petrini, J.H.** (2020) *Modeling Cancer Genomic Data in Yeast Reveals Selection Against ATM Function During Tumorigenesis*. PLoS Genet., 16 (3): e1008422 PMID: 32187176
107. Hailemariam S, De Bona P, Galletto R, Hohl M, **Petrini, J.H.**, Burgers PM. (2019) *The telomere-binding protein Rif2 and ATP-bound Rad50 have opposing roles in the activation of yeast Tel1(ATM) kinase*. J Biol Chem. DOI: 10.1074/jbc.RA119.011077. PMID: 31640985.
108. Fagan-Solis, K, Simpson, D.A., Kumar, R. J., Martelotto, L., Mose, L. E., Rashid, R. U., Ho, A. Y., Powell, S., Wen, H., Parker, J., Reis-Filho, J., **Petrini, J.H.**, and Gupta, G. (2020) *A P53-independent DNA Damage Response Suppresses Oncogenic Proliferation and Genome Instability*. Cell Rep. 30 1385-1399. PMC7361372
109. Carbone, M., Aaron, T.S., Beutler, B., Bononi, A., Cavanee, W., Cleaver, E.J., Croce, M.C., D'Andrea, A., Foulkes, W., Gaudino, G., Groden, L.J., Henske, P.E., Hickson, D. I., Hwang, P.M., Kolodner, R., Mak, T., Malkin, D., Monnat, R., Novelli, F., Pass, L.H., **Petrini, J.H.**, Schmidt, L., Yang, H., (2020) *Tumour predisposition and cancer syndromes as models to study gene-environment interaction..* Nat Rev Cancer. 20(9):533-549.doi:10.1038/s41568-020-0265-y. doi.org/10.1038/S41568-020-0265-y PMC8104546
110. Wu, W., Bhowmick, R., Vogel, I., Ozer, O., Ghisays, F., Thakur, R.S., Sanchez De Leon, E., Richter, P.H., Ren, L., **Petrini, J.H.**, Hickson, I.D., Liu, Y., (2020) *RTEL1 Suppresses G-quadruplex-Associated R-Loops at Difficult-to-Replicate Loci in the Human Genome*. Nat Struct Mol Biol. 27. 424-437 PMID 32398827.
111. Fagin, J., **Petrini, J.H.** (2020) *Oncogene-induced DNA damage: cyclic AMP steps into the ring*. J Clin Invest. 2020. doi.org/10.1172/JCI142237
112. Da Cruz MC., Hohl, M., Ceppi, I., Kermasson, L., Maggiorella, L., Modesti, M., De Villarty J., Illeri, T., Cejka, P., **Petrini, J.H.**, Revy, P., (2020) *A disease-causing single amino-acid deletion in the coiled-coil domain of RAD50 impairs MRE11 complex functions in yeast and humans*. Cell Rep.PMC7788285
113. Ghisays, F., Garzia,A., Wang, H., Canasto-Chibuque, C., Hohl, M., Savage. S.A., Tuschl T., **Petrini, J.H.** (2021) *RTEL1 Influences the Abundance and Localization of TERRA RNA*. Nat. Commun. PMC8140157
114. Fernandez K.C., Feeney, L., Smolkin, R.M., Yen, W.F., Matthews, A. J., **Petrini, J.H.**, Chaudhuri, J., (2022) *The Structure-Selective Endonucleases GEN1 and MUS81 are Functionally Complementary in Safeguarding the Genome of Proliferating B Lymphocytes*. bioRxiv 2022.02.09.479711; doi: <https://doi.org/10.1101/2022.02.09.479711>. PMC9581529
115. Wardlaw, C., **Petrini, J.H.**, (2022) *ISG15 Conjugation to Proteins on Nascent DNA Mitigates DNA Replication Stress*. 10;13(1):5971. doi: 10.1038/s41467-022-33535-y. Nat Commun. PMC9550767.
116. Belhadj, S., Khurram, A., Bandlamudi. C., Ravichandran, V., Steinsnyder, Z., Wildman, T., Catchings, A., Kemel, Y., Mukherjee, S., Arora, K., Mehine, M., Dandiker, S., Izhar, A., **Petrini, J.H.**, Domchek, S., Nathanson, K., Brower, J., Couch, F., Stadler, Z., Robson, M., Walsh, W., Vijai, J., Berger, M., Topka, S., Offit, K., (2023) *NBN pathogenic germline variants are associated with pan-cancer susceptibility and in vitro DNA damage response defects*. Clin. Cancer Res. 17;29 (2):422-431. doi: 10.1158/1078-0432.CCR-22-1703. PMC9843434
117. Wardlaw, C., **Petrini, J.H.**, (2023) *A Link Between Innate Immune Signaling and DNA Replication*. Bioessays. PMID: 37147792.