**JEAN GAUTIER**

**Overview**

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**Academic Appointments**

* Professor of Genetics & Development

**Administrative Appointments**

* Leader, Cancer Genomics and Epigenomics Program, Herbert Irving Comprehensive Cancer Center

**Research**

Jean Gautier studies the mechanisms responsible for the maintenance of genome stability. The laboratory employs diverse experimental approaches to elucidate the causes and the role of genome instability in cancer. Cell-free extracts derived from the egg of the frog Xenopus laevis are used as a simple model system to study processes that govern genome stability, including DNA replication control, DNA repair, and the cellular response to DNA damage. In addition, cultured normal and tumor cells and mouse models are exploited to analyze biological responses to DNA damage. The Gautier laboratory use a range of techniques including biochemistry, proteomics, live-cell imaging, super-resolution microscopy, Hi-C and genome-wide translocation sequencing.

**Selected Publications**

1. **Dual-Color Plasmonic Nanosensor for Radiation Dosimetry**Tao Y, Li M, Liu X, Leong KW, Gautier J, Zha S  
   ACS Appl Mater Interfaces. 2020.  
   PMID: 32337977, DOI: 10.1021/acsami.0c03001
2. **Assembling nuclear domains: Lessons from DNA repair**Schrank B, Gautier J  
   J Cell Biol. 2019.  
   PMID: 31324649, DOI: 10.1083/jcb.201904202
3. **Nuclear ARP2/3 drives DNA break clustering for homology-directed repair**Schrank BR, Aparicio T, Li Y, Chang W, Chait BT, Gundersen GG, Gottesman ME, Gautier J  
   Nature. 2018.  
   PMID: 29925947, DOI: 10.1038/s41586-018-0237-5
4. **Sensing and Processing of DNA Interstrand Crosslinks by the Mismatch Repair Pathway**Kato N, Kawasoe Y, Williams H, Coates E, Roy U, Shi Y, Beese LS, Schärer OD, Yan H, Gottesman ME, Takahashi TS, Gautier J  
   Cell Rep. 2017.  
   PMID: 29091773, DOI: 10.1016/j.celrep.2017.10.032
5. **MRN, CtIP, and BRCA1 mediate repair of topoisomerase II-DNA adducts**Aparicio T, Baer R, Gottesman M, Gautier J  
   J Cell Biol. 2016.  
   PMID: 26880199, DOI: 10.1083/jcb.201504005
6. **MYC is a critical target of FBXW7**Sato M, Rodriguez-Barrueco R, Yu J, Do C, Silva JM, Gautier J  
   Oncotarget. 2015.  
   PMID: 25669969, DOI: 10.18632/oncotarget.3203
7. **Cdc45 is a critical effector of myc-dependent DNA replication stress**Srinivasan SV, Dominguez-Sola D, Wang LC, Hyrien O, Gautier J  
   Cell Rep. 2013.  
   PMID: 23643534, DOI: 10.1016/j.celrep.2013.04.002
8. **Activation of DSB processing requires phosphorylation of CtIP by ATR**Peterson SE, Li Y, Wu-Baer F, Chait BT, Baer R, Yan H, Gottesman ME, Gautier J  
   Mol Cell. 2013.  
   PMID: 23273981, DOI: 10.1016/j.molcel.2012.11.020
9. **Replication-independent repair of DNA interstrand crosslinks**Williams HL, Gottesman ME, Gautier J  
   Mol Cell. 2012.  
   PMID: 22658724, DOI: 10.1016/j.molcel.2012.05.001
10. **Double-strand break end resection and repair pathway choice**Symington LS, Gautier J  
    Annu Rev Genet. 2011.  
    PMID: 21910633, DOI: 10.1146/annurev-genet-110410-132435
11. **Checkpoint signaling from a single DNA interstrand crosslink**Ben-Yehoyada M, Wang LC, Kozekov ID, Rizzo CJ, Gottesman ME, Gautier J  
    Mol Cell. 2009.  
    PMID: 19748363, DOI: 10.1016/j.molcel.2009.08.014
12. **A forward chemical genetic screen reveals an inhibitor of the Mre11-Rad50-Nbs1 complex**DuprÃ© A, Boyer-Chatenet L, Sattler RM, Modi AP, Lee JH, Nicolette ML, Kopelovich L, Jasin M, Baer R, Paull TT, Gautier J  
    Nat Chem Biol. 2008.  
    PMID: 18176557, DOI: 10.1038/nchembio.63
13. **Non-transcriptional control of DNA replication by c-Myc**Dominguez-Sola D, Ying CY, Grandori C, Ruggiero L, Chen B, Li M, Galloway DA, Gu W, Gautier J, Dalla-Favera R  
    Nature. 2007.  
    PMID: 17597761, DOI: 10.1038/nature05953
14. **ATR and ATM regulate the timing of DNA replication origin firing**Shechter D, Costanzo V, Gautier J  
    Nat Cell Biol. 2004.  
    PMID: 15220931, DOI: 10.1038/ncb1145
15. **An ATR- and Cdc7-dependent DNA damage checkpoint that inhibits initiation of DNA replication**Costanzo V, Shechter D, Lupardus PJ, Cimprich KA, Gottesman M, Gautier J  
    Mol Cell. 2003.  
    PMID: 12535533, DOI: 10.1016/s1097-2765(02)00799-2