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| **Affiliation:** **Address:** **Contact:** |  |

**Narrative**

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| *I am interested in understanding how mitochondrial DNA repair processes contribute to physiological functions. Studies in aging and pathological conditions such as cancer and some neurodegenerative disorders have revealed that maintenance of mitochondrial DNA integrity is essential for physiological processes. I am interested in understand how DNA repair contributes to mitochondrial function and how this relates to aging and cancer. In addition, my laboratory studies how environmental factors may affect mitochondrial DNA integrity and mitochondrial function. My laboratory uses a variety of experimental models such as yeast cells, mice, and human cells to ask questions about DNA repair and mitochondrial function.* |

**Publications**

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| **1.** | *Forestier-Román IS, López-Rivas A, Sánchez-Vázquez MM, Rohena-Rivera K, Nieves-Burgos G, Ortiz-Zuazaga H, Torres-Ramos CA, Martínez-Ferrer M. Andrographolide induces DNA damage in prostate cancer cells. Oncotarget. 2019 Feb 01; 10(10):1085-1101.* | [PubMed](http://www.ncbi.nlm.nih.gov/pubmed/30800220) |
| **2.** | *Ramírez Lugo JS, Torres-Ramos CA. Rebuilding Caribbean science. Science. 2017 Oct 13; 358(6360):151.* | [PubMed](http://www.ncbi.nlm.nih.gov/pubmed/29026018) |
| **3.** | *Ballista-Hernández J, Martínez-Ferrer M, Vélez R, Climent C, Sánchez-Vázquez MM, Torres C, Rodríguez-Muñoz A, Ayala-Peña S, Torres-Ramos CA. Mitochondrial DNA Integrity Is Maintained by APE1 in Carcinogen-Induced Colorectal Cancer. Mol Cancer Res. 2017 07; 15(7):831-841.* | [PubMed](http://www.ncbi.nlm.nih.gov/pubmed/28360037) |
| **4.** | *Barreto-Torres G, Hernandez JS, Jang S, Rodríguez-Muñoz AR, Torres-Ramos CA, Basnakian AG, Javadov S. The beneficial effects of AMP kinase activation against oxidative stress are associated with prevention of PPARa-cyclophilin D interaction in cardiomyocytes. Am J Physiol Heart Circ Physiol. 2015 Apr 01; 308(7):H749-58.* | [PubMed](http://www.ncbi.nlm.nih.gov/pubmed/25617357) |
| **5.** | *Jansen RJ, Fonseca-Williams S, Bamlet WR, Ayala-Peña S, Oberg AL, Petersen GM, Torres-Ramos CA. Detection of DNA damage in peripheral blood mononuclear cells from pancreatic cancer patients. Mol Carcinog. 2015 Oct; 54(10):1220-6.* | [PubMed](http://www.ncbi.nlm.nih.gov/pubmed/25111947) |
| **6.** | *López-López L, Nieves-Plaza M, Castro Mdel R, Font YM, Torres-Ramos CA, Vilá LM, Ayala-Peña S. Mitochondrial DNA damage is associated with damage accrual and disease duration in patients with systemic lupus erythematosus. Lupus. 2014 Oct; 23(11):1133-41.* | [PubMed](http://www.ncbi.nlm.nih.gov/pubmed/24899636) |
| **7.** | *Siddiqui A, Rivera-Sánchez S, Castro Mdel R, Acevedo-Torres K, Rane A, Torres-Ramos CA, Nicholls DG, Andersen JK, Ayala-Torres S. Mitochondrial DNA damage is associated with reduced mitochondrial bioenergetics in Huntington''s disease. Free Radic Biol Med. 2012 Oct 01; 53(7):1478-88.* | [PubMed](http://www.ncbi.nlm.nih.gov/pubmed/22709585) |
| **8.** | *Vogel KS, Perez M, Momand JR, Acevedo-Torres K, Hildreth K, Garcia RA, Torres-Ramos CA, Ayala-Torres S, Prihoda TJ, McMahan CA, Walter CA. Age-related instability in spermatogenic cell nuclear and mitochondrial DNA obtained from Apex1 heterozygous mice. Mol Reprod Dev. 2011 Dec; 78(12):906-19.* | [PubMed](http://www.ncbi.nlm.nih.gov/pubmed/21919107) |
| **9.** | *Acevedo-Torres K, Fonseca-Williams S, Ayala-Torres S, Torres-Ramos CA. Requirement of the Saccharomyces cerevisiae APN1 gene for the repair of mitochondrial DNA alkylation damage. Environ Mol Mutagen. 2009 May; 50(4):317-27.* | [PubMed](http://www.ncbi.nlm.nih.gov/pubmed/19197988) |
| **10.** | *Acevedo-Torres K, Berríos L, Rosario N, Dufault V, Skatchkov S, Eaton MJ, Torres-Ramos CA, Ayala-Torres S. Mitochondrial DNA damage is a hallmark of chemically induced and the R6/2 transgenic model of Huntington''s disease. DNA Repair (Amst). 2009 Jan 01; 8(1):126-36.* | [PubMed](http://www.ncbi.nlm.nih.gov/pubmed/18935984) |
| **11.** | *Guzder SN, Torres-Ramos C, Johnson RE, Haracska L, Prakash L, Prakash S. Requirement of yeast Rad1-Rad10 nuclease for the removal of 3''-blocked termini from DNA strand breaks induced by reactive oxygen species. Genes Dev. 2004 Sep 15; 18(18):2283-91.* | [PubMed](http://www.ncbi.nlm.nih.gov/pubmed/15371342) |
| **12.** | *Haracska L, Torres-Ramos CA, Johnson RE, Prakash S, Prakash L. Opposing effects of ubiquitin conjugation and SUMO modification of PCNA on replicational bypass of DNA lesions in Saccharomyces cerevisiae. Mol Cell Biol. 2004 May; 24(10):4267-74.* | [PubMed](http://www.ncbi.nlm.nih.gov/pubmed/15121847) |
| **13.** | *Torres-Ramos CA, Prakash S, Prakash L. Requirement of RAD5 and MMS2 for postreplication repair of UV-damaged DNA in Saccharomyces cerevisiae. Mol Cell Biol. 2002 Apr; 22(7):2419-26.* | [PubMed](http://www.ncbi.nlm.nih.gov/pubmed/11884624) |
| **14.** | *Torres-Ramos CA, Johnson RE, Prakash L, Prakash S. Evidence for the involvement of nucleotide excision repair in the removal of abasic sites in yeast. Mol Cell Biol. 2000 May; 20(10):3522-8.* | [PubMed](http://www.ncbi.nlm.nih.gov/pubmed/10779341) |
| **15.** | *Johnson RE, Torres-Ramos CA, Izumi T, Mitra S, Prakash S, Prakash L. Identification of APN2, the Saccharomyces cerevisiae homolog of the major human AP endonuclease HAP1, and its role in the repair of abasic sites. Genes Dev. 1998 Oct 01; 12(19):3137-43.* | [PubMed](http://www.ncbi.nlm.nih.gov/pubmed/9765213) |
| **16.** | *Torres-Ramos CA, Prakash S, Prakash L. Requirement of yeast DNA polymerase delta in post-replicational repair of UV-damaged DNA. J Biol Chem. 1997 Oct 10; 272(41):25445-8.* | [PubMed](http://www.ncbi.nlm.nih.gov/pubmed/9325255) |
| **17.** | *Torres-Ramos CA, Yoder BL, Burgers PM, Prakash S, Prakash L. Requirement of proliferating cell nuclear antigen in RAD6-dependent postreplicational DNA repair. Proc Natl Acad Sci U S A. 1996 Sep 03; 93(18):9676-81.* | [PubMed](http://www.ncbi.nlm.nih.gov/pubmed/8790390) |
| **18.** | *Grompe M, Lindstedt S, al-Dhalimy M, Kennaway NG, Papaconstantinou J, Torres-Ramos CA, Ou CN, Finegold M. Pharmacological correction of neonatal lethal hepatic dysfunction in a murine model of hereditary tyrosinaemia type I. Nat Genet. 1995 Aug; 10(4):453-60.* | [PubMed](http://www.ncbi.nlm.nih.gov/pubmed/7545495) |
| **19.** | *Rabek JP, Zhang DE, Torres-Ramos CA, Papaconstantinou J. Analysis of the mechanism of glucocorticoid-mediated down regulation of the mouse alpha-fetoprotein gene. Biochim Biophys Acta. 1994 Jun 21; 1218(2):136-44.* | [PubMed](http://www.ncbi.nlm.nih.gov/pubmed/7517187) |
| **20.** | *Zhang DE, Rabek JP, Hsieh CC, Torres-Ramos C, Papaconstantinou J. Functional analysis of the mouse alpha-fetoprotein enhancers and their subfragments in primary mouse hepatocyte cultures. J Biol Chem. 1992 May 25; 267(15):10676-82.* | [PubMed](http://www.ncbi.nlm.nih.gov/pubmed/1375227) |

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