

Paul Hasty, D.V.M.

Professor, Department of Molecular Medicine
Location: Texas Research Park Campus, Institute of
Biotechnology, Room 2.030
Phone: (210) 567-7278
Fax: (210) 567-7277
E-mail: hastye@uthscsa.edu
Web links:
<http://www.molecularmedicine.uthscsa.edu/faculty.aspx>



We focus on the impact chromatin metabolism has on cancer and aging in genetically altered cells and mice using embryonic stem cell/gene targeting technology. Specifically we study DNA damage repair and DNA damage responses. Defects in DNA repair pathways increase DNA damage and genomic instability. Increased DNA damage can accelerate DNA damage checkpoint responses designed to suppress cancer. An increase in these responses can lead to early aging while an increase in genomic instability can lead to cancer. Ongoing research focuses on the molecular mechanisms important for DNA damage repair and DNA damage checkpoint responses with attention given to their impact on aging and oncogenesis.

Selected Publications

1. **Hasty, P.**, Campisi, J., Hoeijmakers, J., van Steeg, H., Vijg, J. (2003) Aging and Genome Maintenance: Lessons from the mouse? [*Science*. 299:1355-9.](#)
2. Holcomb, V.B., Vogel, H., Marple, T., Kornegay, R.W. and **Hasty, P.** (2006) Ku80 and p53 suppress medulloblastoma that arise independent of Rag-1-Induced DSBs. [*Oncogene* 25\(54\):7159-65.](#)
3. Chen, M.J., Ma, S.M., Dumitrache, L.C., and **Hasty, P.** (2007) Biochemical And Cellular Characteristics Of The 3'->5' Exonuclease TREX2. [*Nucleic Acids Res.* 35\(8\):2682-94.](#)
4. Li, H., Vogel, H., Holcomb, V. B., Gu, Y., and Hasty, P. (2007) Deletion of either Ku70, Ku80 or both causes early aging without increased cancer. *Molec. Cell. Biol.* 27:8205-14.
5. Holcomb, V. B., Rodier, F., Choi, Y. J., Busuttil, R. A., Vogel, H., Vijg, J., Campisi, J., and Hasty, P. (2008) Ku80-deletion suppresses spontaneous tumors and induces p53-mediated DNA damage responses. *Cancer Res.* 68:9497-502
6. Chen, M. J., Dumitrache, L. C., Wangsa, D., Ma, S. M., Padilla-Nash, H., Ried, T., and **Hasty, P.** (2007) Cisplatin depletes TREX2 and causes Robertsonian translocations as seen in TREX2 knockout cells. *Cancer Res.* 67:9077-83.
7. Li, H., Choi, Y. J., Hanes, M. A., Marple, T., Vogel, H., and Hasty, P. (2009) Deleting Ku70 is milder than deleting Ku80 in p53-mutant mice and cells. *Oncogene* 23:1875-8.