

Cold Spring Harbor Laboratory Watson School of Biological Sciences

Student Publications

2001

Bernstein, E., **A.A. Caudy**, S.M. Hammond, and G. J. Hannon. 2001. Role for a bidentate ribonuclease in the initiation step of RNA interference. *Nature* **409**: 363–366.

Bernstein, E., **A.M. Denli**, and G.J. Hannon. 2001. The rest is silence. *RNA* **7**: 1509–1521.

Hammond, S.M., **A.A. Caudy**, and G.J. Hannon. 2001. Post-transcriptional gene silencing by double-stranded RNA. *Nat. Rev. Genet.* **2**: 110–119.

Hammond, S.M., S. Boettcher, **A.A. Caudy**, R. Kobayashi, and G. J. Hannon. 2001. Argonaute2, a link between genetic and biochemical analyses of RNAi. *Science* **293**: 1146–1150.

Salghetti, S.E., **A.A. Caudy**, J.G. Chenoweth, and W.P. Tansey. 2001. Regulation of transcriptional activation domain function by ubiquitin. *Science* **293**: 1651–1653.

2002

Bjerling, P., R.A. Silverstein, G. Thon, **A. Caudy**, S. Grewal, and K. Ekwall. 2002. Functional divergence between histone deacetylases in fission yeast by distinct cellular localization and *in vivo* specificity. *Mol. Cell. Biol.* **22**: 2170–2181.

Caudy, A.A., M. Myers, G. J. Hannon, and S.M. Hammond. 2002. Fragile X-related protein and VIG associate with the RNA interference machinery. *Genes Dev.* **16**: 2491–2496.

Ejkova, E., and W.P. Tansey. 2002. Old dogs and new tricks: meeting on mechanisms of eukaryotic transcription. *EMBO Reports* **3**: 219–223.

Cilia, M.,* L. Cantrill,* and A. van Bel. 2002. Plasmodesma 2001: on safari through the symplast. *Plant Cell* **14**: 7–10.

Gendrel, A-V. *, **Z. Lippman** *, C. Yordan, V. Colot, and R.A. Martienssen. 2002. Dependence of heterochromatic histone H3 methylation patterns on the *Arabidopsis* gene *DDMI*. *Science* **297**: 1871–1873.

Hall, I. M.,* G.D. Shankaranarayana*, K. Noma*, N. Ayoub, A. Cohen, and S.I. Grewal. 2002. Establishment and maintenance of a heterochromatin domain. *Science* **297**: 2232–2237.

Kim, J. Y., Z. Yuan, **M. Cilia**, Z. Khalfan-Jagani, and D. Jackson. 2002. Intercellular trafficking of a *KNOTTED1* green fluorescent protein fusion in the leaf and shoot meristem of *Arabidopsis*. *Proc. Natl. Acad. Sci. USA* **99**: 4103–4108.

Muratani, M.*, D. Gerlich*, S.M. Janicki, M. Gebhard, R. Eils, and D.L. Spector. 2002. Metabolic-energy-dependent movement of PML bodies within the mammalian cell nucleus. *Nat. Cell Biol.* **4**: 106–110.

Paddison, P. J.,* **A.A. Caudy**,* and G.J. Hannon. 2002. Stable suppression of gene expression by RNAi in mammalian cells. *Proc. Natl. Acad. Sci. USA* **99**: 1443–1448.

Paddison, P. J., **A.A. Caudy**, E. Bernstein, G.J. Hannon, and D.S. Conklin. 2002. Short hairpin RNAs (shRNAs) induce sequence-specific silencing in mammalian cells. *Genes Dev.* **16**: 948–958.

Paddison, P.J., and G.J. Hannon. 2002. RNA interference: the new somatic cell genetics? *Cancer Cell* **2**: 17–23.

Volpe, T.A., C. Kidner, **I.M. Hall**, G. Teng, S.I. Grewal, and R.A. Martienssen. 2002. Regulation of heterochromatic silencing and histone H3 lysine-9 methylation by RNAi. *Science* **297**: 1833–1837.

2003

Bernstein, E., S.Y. Kim, M.A. Carmell, **E.P. Murchison**, H. Alcorn, M.Z. Li, A.A. Mills, S.J. Elledge, K.V. Anderson, and G.J. Hannon. 2003. Dicer is essential for mouse development. *Nat. Genet.* **35**: 215–217.

Caudy, A.A., R.F. Ketting, S.M. Hammond, **A.M. Denli**, A.M. Bathorn, B.B. Tops, J.M. Silva, M.M. Myers, G.J. Hannon, and R.H. Plasterk. 2003. A micrococcal nuclease homologue in RNAi effector complexes. *Nature* **425**: 411–414.

Denli, A.M., and G.J. Hannon. 2003. RNAi: an ever growing puzzle. *Trends Biochem Sci.* **28**: 196–201.

Hall, I.M., and S.I.S Grewal. 2003. Structure and function of heterochromatin: implications for epigenetic gene silencing and genome organization. In *RNAi: a guide to gene silencing* (ed. G.J. Hannon), pp. 205–232. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY.

Hall I.M., K. Noma, and S.I. Grewal. 2003. RNA interference machinery regulates chromosome dynamics during mitosis and meiosis in fission yeast. *Proc. Natl. Acad. Sci. USA* **100**: 193–198.

Healy, J., **E.E. Thomas**, J.T. Schwartz, and M. Wigler. 2003. Annotating large genomes with exact word matches. *Genome Res.* **13**: 2306–2315.

Hemann M.T., J. S. Fridman, J.T. Zilfou, E. Hernando, **P.J. Paddison**, C. Cordon-Cardo, G.J. Hannon, and S.W. Lowe. 2003. An epi-allelic series of p53 hypomorphs created by stable RNAi produces distinct tumor phenotypes *in vivo*. *Nat. Genet.* **33**: 396–400.

Lippman, Z.,* B. May,* C. Yordan, T. Singer, and R. Martienssen. 2003. Distinct mechanisms determine transposon inheritance and methylation via small RNA and histone modification. *Public Library of Science* **1**: 420–428.

Muratani, M., and W.P. Tansey. 2003. How the ubiquitin-proteasome system controls transcription. *Nat. Rev. Mol. Cell. Biol.* **4**: 192–201.

Paddison, P.J., and G.J. Hannon. 2003. siRNAs and shRNAs: Skeleton keys to the human genome. *Curr. Opin. Mol. Ther.* **5**: 217–224.

Song, J.-J., J. Liu, **N.H. Tolia**, J. Schneiderman, S.K. Smith, R.A. Martienssen, G.J. Hannon, and L. Joshua-Tor. 2003. The crystal structure of the Argonaute2 PAZ domain reveals an RNA binding motif in RNAi effector complexes. *Nat. Struct. Biol.* **10**: 1026–1032.

2004

Bastow, R., J. Mylne, C. Lister, **Z.B. Lippman**, R.M. Martienssen, and C. Dean. 2004. Vernalization requires epigenetic silencing of *FLC* by histone methylation. *Nature* **427**: 164–167.

Ezhkova, E., and W.P. Tansey. 2004. Proteasomal ATPases Link Ubiquitylation of Histone H2B to Methylation of Histone H3. *Mol. Cell* **13**: 435–442.

Juarez M.T., **J.S. Kui**, J. Thomas, B.A. Heller, and M.C. Timmermans. 2004. microRNA-mediated repression of *rolled leaf1* specifies maize leaf polarity. *Nature* **428**: 84–88.

Chiang A.S.,* **A. Blum**,* J. Barditch, Y.H. Chen, **S.L. Chiu**, M. Regulski, J.D. Armstrong, T. Tully, and J. Dubnau. 2004. *radish* encodes a phospholipase-A2 and defines a neural circuit involved in anesthesia-resistant memory. *Curr. Biol.* **14**: 263–72.

Paddison, P.J., J.M. Silva, D.S. Conklin, M. Schlabach, M. Li, S. Aruleba, V. Balija, A. O'Shaughnessy, L. Gnoj, K. Scobie, K. Chang, T. Westbrook, M. Cleary, R. Sachidanandam, W.R. McCombie, S.J. Elledge, and G.J. Hannon.

2004. A resource for large-scale RNA-interference-based screens in mammals. *Nature* **428**: 427–431.

Thomas, E.E., N. Srebro, J. Sebat, N. Navin, J. Healy, B. Mishra, and M. Wigler. 2004. Distribution of short paired duplications in mammalian genomes. *Proc. Natl. Acad. Sci. USA*. 2004 **101**: 10349–10354.

Hemann, M.T., J.T. Zilfou, Z. Zhao, **D.J. Burgess**, G.J. Hannon, and S.W. Lowe. 2004. Suppression of tumorigenesis by the p53 target PUMA. *Proc. Natl. Acad. Sci. USA*. **101**: 9333–9338.

Murchison, E.P., and G.J. Hannon. 2004. miRNAs on the move: miRNA biogenesis and the RNAi machinery. *Curr. Opin. Cell Bio.* **16**: 223–229.

Tian G.W., A. Mohanty, S.N. Chary, S. Li, B. Paap, G. Drakakaki, **C.D. Kopec**, J. Li, D. Ehrhardt, D. Jackson, S.Y. Rhee, N.V. Raikhel, and V. Citovsky. 2004. High-throughput fluorescent tagging of full-length *Arabidopsis* gene products in planta. *Plant Physiol.* **135**: 25–38.

Lippman, Z.B., and R.M. Martienssen. 2004. The role of RNA interference in heterochromatic silencing. *Nature* **431**: 364–370.

Song J.-J., S.K. Smith, G.J. Hannon, and L. Joshua-Tor. 2004. Crystal structure of Argonaute and its implications for RISC slicer activity. *Science* **305**: 1434–1437.

Liu, J., M.A. Carmell, F.V. Rivas, C.G. Marsden, J.M. Thomson, **Song, J.-J.**, S.M. Hammond, L. Joshua-Tor, and G.J. Hannon. 2004. Argonaute2 is the catalytic engine of mammalian RNAi. *Science* **305**: 1437–1441.

Paddison, P.J., **A.A. Caudy**, R. Sachidanandam, and G.J. Hannon. 2004. Short hairpin activated gene silencing in mammalian cells. *Methods Mol. Biol.* **265**: 85–100.

Caudy, A.A., and G.J. Hannon. 2004. Induction and biochemical purification of RNA-induced silencing complex from *Drosophila* S2 cells. *Methods Mol. Biol.* **265**: 59–72.

Denli, A.M., B.B. Tops, R.H. Plasterk, R.F. Ketting, and G.J. Hannon. 2004. Processing of primary microRNAs by the Microprocessor complex. *Nature* **432**: 231–235.

Lippman, Z., A.V. Gendrel, M. Black, M.W. Vaughn, N. Dedhia, W.R. McCombie, K. Lavine, V. Mittal, B. May, K.D. Kasschau, J.C. Carrington, R.W. Doerge, V. Colot, and R. Martienssen. 2004. Role of transposable elements in heterochromatin and epigenetic control. *Nature* **430**: 471–476.

Cilia, M.L., and D. Jackson. 2004. Plasmodesmata form and function. *Curr. Opin. Cell Biol.* **16**: 500–506.

Martienssen R., **Z. Lippman**, B. May, M. Ronemus, and M. Vaughn. 2004. Transposons, tandem repeats, and the silencing of imprinted genes. *Cold Spring Harb Symp Quant Biol.* **69**: 1-10.

2005

Chen, N., **S. Pai**, Z. Zhao, A. Mah, R. Newbury, R.C. Johnson, Z. Altun, D.G. Moerman, D.L. Baillie, and L. Stein. 2005. Identification of a nematode chemosensory gene family. *Proc. Natl. Acad. Sci.* **102**: 145-141.

Siolas D., C. Lerner, J. Burchard, W. Ge, P.S. Linsley, **P.J. Paddison**, G.J. Hannon and M.A. Cleary. 2005. Synthetic shRNAs as potent RNAi triggers. *Nat. Biotechnol.* **23**: 227-231.

Muratani, M., C. Kung, K.M., and W.P. Tansey. 2005. The F-box protein Dsg1/Mdm30 is a transcriptional co-activator that stimulates Gal4 turnover and cotranscriptional mRNA processing. *Cell* **120**: 887-899.

Gendrel, A.-V., **Z. Lippman**, R. Martienssen, and V. Colot. 2005. Profiling histone modification patterns in plants using genomic tiling microarrays. *Nature Methods* **2**: 213-218.

Lippman, Z., A.-V. Gendrel, V. Colot, and R. Martienssen. 2005. Profiling DNA methylation patterns using genomic tiling microarrays. *Nature Methods* **2**: 219-224.

Rivas, F.V., **N.H. Tolia**, **J.J. Song**, J.P. Aragon, J. Liu, G.J. Hannon, and L. Joshua-Tor. 2005. Purified Argonaute2 and an siRNA form recombinant human RISC. *Nat. Struct. Mol. Biol.* **12**: 340-349.

Tolia, N.H., E.J. Enemark, B.K.L. Sim, and L. Joshua-Tor. 2005. Structural basis for the EBA-175 erythrocyte invasion pathway of the malaria parasite *Plasmodium falciparum*. *Cell* **122**: 183-193.

Schramke, V., D.M. Sheedy, **A.M. Denli**, C. Bonila, K. Ekwall, G.J. Hannon, and R.C. Allshire. 2005. RNA-interference-directed chromatin modification coupled to RNA polymerase II transcription. *Nature* **435**: 1275-1279.

Qi, Y., **A.M. Denli**, and G.J. Hannon. 2005. Biochemical specialization within *Arabidopsis* RNA silencing pathways. *Molec. Cell* **19**: 421-428.

* - Authors contributed equally to the work.

- Watson School student

