CURRICULUM VITAE

Roy Parker
Howard Hughes Medical Institute
Department of Biochemistry
University of Colorado Boulder
Jennie Smoly Caruthers Biotechnology Building
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EDUCATION:

Postdoctoral:	University of Massachusetts Medical School, 1/88-9/89 (Laboratory of Dr. Allan Jacobson)
	University of California at San Diego, 10/86-12/87 (Laboratory of Dr. Michael Yaffe)
	University of California at San Francisco, 4/85-9/86 (Laboratory of Dr. Christine Guthrie)
Ph.D.:	University of California at San Francisco, 1985 (Genetics)
B.S.:	Carnegie Mellon University, Pittsburgh, PA, 1979 (Chemistry)

ACADEMIC POSITIONS:

1989-1995	Assistant Professor Department of Molecular and Cellular Biology, University of Arizona
1994-1997	Assistant Investigator Howard Hughes Medical Institute
1995-1998	Associate Professor Department of Molecular and Cellular Biology, University of Arizona
1997-2002	Associate Investigator Howard Hughes Medical Institute
1998-2001	Professor Department of Molecular and Cellular Biology, University of Arizona
2001-2012	Regents' Professor Department of Molecular and Cellular Biology, University of Arizona
2002-present	Investigator Howard Hughes Medical Institute
2012-present	Cech-Leinwand Endowed Chair of Biochemistry, and Professor, Department of Biochemistry, University of Colorado Boulder
2018-present	Distinguished Professor, Department of Biochemistry, University of Colorado Boulder
2020-present	Executive Director, BioFrontiers Institute, University of Colorado Boulder

OTHER PROFESSIONAL ACTIVITIES:

1996-1997	Member, Defense Science Study Group
1996-2005	Consultant, Institute for Defense Analyses
1997	Co-Chair. Gordon Conference on Nucleic Acids
1999	Co-Organizer, CSHL Conference on RNA Processing
1997-2000	Member, NIH Molecular Biology Study Section
1999-2000	Chair, NIH Molecular Biology Study Section
2004	Co-Organizer FASEB Conference on Post-Transcriptional Control
2014-2021	Friedrich Miescher Institute for Biomedical Research, Scientific Advisory Board
2019-2022	Consultant for Third Rock Ventures
2019-2022	Co-Founder of Faze Medicines
2023- present	Scientific Advisory Board, Center for RNA Biomedicine, University of Michigan, Ann Arbor

HONORS:

Regents' Fellowship (1979)
Searle Scholarship (1990)
Regents' Professor (2003)
Galileo Fellow (2003)
NIH Merit Award (2004)
President, RNA Society
Member, American Academy of Arts & Sciences (2010)
Member, National Academy of Sciences (2012)
Executive Director, BioFrontiers Institute, University of Colorado Boulder, (2020)
Robert Sterns Award for Extraordinary Service (2021)
Over 30 Keynote and Distinguished Lectures (2001-present)

EDITOR & EDITORIAL BOARDS:

Molecular and Cellular Biology 1994 - 1997
Science Board of Reviewing Editors 1997 – 1999, 2001 - 2004
RNA 1999 – present
Nucleic Acids Research 2004 – 2017
Editor, Journal of Cell Biology 2008 – 2017
Cell 2009 – present
Current Biology 2014 – present

PUBLICATIONS:

ORIGINAL RESEARCH PAPERS

1. Jones, E.W., Zubenko, G.S. and **R.R. Parker**. (1982) PEP4 gene function is required for expression of several vacuolar hydrolases in *Saccharomyces cerevisiae.* **Genetics** 102:665-677. PMCID: PMC1201965

2. **Parker, R.** and C. Guthrie. (1985) A point mutation in the conserved hexanucleotide at a yeast 5' splice site uncouples recognition, cleavage and ligation. **Cell** 41:107-118.

3. Cellini, A., **Parker, R.**, McMahon, J., Guthrie, C. and J. Rossi. (1986) Activation of a cryptic TACTAAC box in the *Saccharomyces cerevisiae*. **Molecular and Cellular Biology** 6:1571-1578. PMCID: PMC367683

Original Research Papers (continued)

4. Vijayraghavan, U., **Parker, R.**, Tamm, J., Iimura, Y., Rossi, J., Abelson, J.A. and C. Guthrie. (1986) Mutations in conserved intron sequences affect multiple steps in the yeast splicing pathway, particularly assembly of the spliceosome. **EMBO Journal** 5:1683-1695. PMCID: PMC1166995

5. Couto, J.R., Tamm, J., **Parker, R.** and C. Guthrie. (1987) A trans-acting suppressor restores splicing of a yeast intron with a branch point mutation. **Genes & Development** 1:445-455.

6. **Parker, R.**, Siliciano, P.G. and C. Guthrie. (1987) Recognition of the TACTAAC box during mRNA splicing in yeast involves base-pairing to the U2-like snRNA. **Cell** 49:229-239.

7. Ruohola, H., Baker, S.M., **Parker, R.** and T. Platt. (1988) Orientation-dependent function of a short CYC1 DNA fragment in directing mRNA 3' end formation in yeast. **Proceeding of the National Academy of Science** 85:5041-5045. PMCID: PMC281683

8. **Parker, R.**, Simmons, T., Shuster, E., Siliciano, P.G. and C. Guthrie. (1988) Genetic analysis of small nuclear RNAs in *Saccharomyces cerevisiae:* viable sextuple mutant. **Molecular and Cellular Biology** 8:3150-3159. PMCID: PMC363543

9. **Parker, R.** and A. Jacobson. (1990) Translation and a 42-nucleotide segment within the coding region of the mRNA encoded by the *MATα1* gene are involved in promoting rapid mRNA decay in yeast. **Proceeding of the National Academy of Science** 87:2780-2784. PMCID: PMC53774

10. Herrick, D., **Parker, R.** and A. Jacobson. (1990) Identification and comparison of stable and unstable mRNAs in *Saccharomyces cerevisiae.* **Molecular and Cellular Biology** 10:2269-2284. PMCID: PMC360574

11. Muhlrad, D., Hunter, R. and **R. Parker**. (1992) A rapid method for the localized mutagenesis of yeast genes. **Yeast** 8:79-82.

12. Heaton, B., Decker, C., Muhlrad, D., Donahue, J., Jacobson, A. and **R. Parker**. (1992) Analysis of chimeric mRNAs derived from STE3 mRNA identifies multiple regions within yeast mRNAs that regulate mRNA decay. **Nucleic Acids Research** 20:5365-5373. PMCID: PMC334343

13. Muhlrad, D. and **R. Parker**. (1992) Mutations affecting stability and deadenylation of the yeast MFA2 transcript. **Genes & Development** 6:2100-2111.

14. **Parker, R.** and P.G. Siliciano. (1993) Evidence for a non-Watson Crick interaction between the first and last nucleotides of a nuclear pre-mRNA intron. **Nature** 361:660-662.

15. Decker, C.J. and **R. Parker**. (1993) A turnover pathway for both stable and unstable mRNAs in yeast: evidence for a requirement for deadenylation. **Genes & Development** 7:1632-1643.

Original Research Papers (continued)

16. Caponigro, G., Muhlrad, D. and **R. Parker**. (1993) A small segment of the MATalpha1 transcript promotes mRNA decay in yeast: a stimulatory role for rare codons. **Molecular and Cellular Biology** 13:5141-5148. PMCID: PMC360202

17. Beelman, C.A. and **R. Parker**. (1994) Differential effects of translational inhibition in cis and in trans on the decay of the unstable yeast MFA2 mRNA. **Journal of Biological Chemistry** 269:9687-9692.

18. Muhlrad, D., Decker, C.J. and **R. Parker**. (1994) Deadenylation of the unstable mRNA encoded by the yeast MFA2 gene leads to decapping followed by 5'→3' digestion of the transcript. **Genes & Development** 8:855-866.

19. Muhlrad, D. and **R. Parker.** (1994) Premature translational termination triggers mRNA decapping. **Nature** 370:578-581.

20. Muhlrad, D., Decker, C.J. and **R. Parker**. (1995) Turnover mechanisms of the stable PGK1 mRNA in yeast. **Molecular and Cellular Biology** 15:2145-2156. PMCID: PMC230442

21. Caponigro, G. and **R. Parker**. (1995) Multiple functions of the Poly(A) binding protein in mRNA decapping and deadenylation in yeast. **Genes & Development** 9:2421-2432.

22. Mandart, E. and **R. Parker**. (1995) Effects of mutations in the RNA14, RNA15 and PAP1 genes on polyadenylation *in vivo*. **Molecular and Cellular Biology** 15:6979-6986. PMCID: PMC230953

23. Hatfield, L., Beelman, C. A., Stevens A. and **R. Parker**. (1996) Mutations in trans-acting factors affecting mRNA decapping in *Saccharomyces cerevisiae.* **Molecular and Cellular Biology** 16:5830-5838. PMCID: PMC231584

24. Beelman, C. A., Stevens A., Caponigro G., LaGrandeur, T.E., Hatfield L., Fortner, D. and **R. Parker**. (1996) An essential component of the decapping enzyme required for normal rates of mRNA decay in yeast. **Nature** 382:642-646.

25. Caponigro, G. and **R. Parker**. (1996) mRNA turnover in yeast promoted by the MATα1 instability element. **Nucleic Acids Research** 24:4304-4312. PMCID: PMC146253

26. Olivas, W. M., Muhlrad, D. and **R. Parker**. (1997) Analysis of the yeast genome: identification of new non-coding and small ORF-containing RNAs. **Nucleic Acids Research** 25:4619-4625. PMCID: PMC147069

27. Anderson, J.S.J. and **R. Parker**. (1998) The 3' to 5' degradation of yeast mRNAs is a general mechanism for mRNA turnover that requires the SKI2 DEVH box protein and 3' to 5' exonucleases of the exosome complex. **EMBO Journal** 17:1497-1506. PMCID: PMC1170497

28. LaGrandeur, T.E. and **R. Parker**. (1998) Isolation and characterization of Dcp1p, the yeast mRNA decapping enzyme. **EMBO Journa**l 17:1487-1496. PMCID: PMC1170496

Original Research Papers (continued)

29. LaGrandeur, T. and **R. Parker**. (1999) The *cis* acting sequences responsible for the differential decay of the unstable MFA2 and stable PGK1 transcripts in yeast includes the context of the translational start codon. **RNA** 5:420-433. PMCID: PMC1369770

30. Tharun, S. and **R. Parker**. (1999) Analysis of mutations in the yeast mRNA decapping enzyme. **Genetic**s 151:1273-1285. PMCID: PMC1460575

31. Schwartz, D.C. and **R. Parker**. (1999) Mutations in translation initiation factors lead to increased rates of deadenylation and decapping of mRNAs in *Saccharomyces cerevisiae*. **Molecular and Cellular Biology** 19:5247-5256. PMCID: PMC84368

32. Dunckley, T. and **R. Parker**. (1999) The DCP2 protein is required for mRNA decapping in *Saccharomyces cerevisia*e and contains a functional MutT motif. **EMBO Journal** 18: 5411-5422. PMCID: PMC1171610

33. Muhlrad, D. and **R. Parker**. (1999) Recognition of yeast mRNAs as "nonsense containing" leads to both inhibition of mRNA translation and mRNA degradation: Implications for the control of mRNA decapping. **Molecular Biology of the Cell** 10: 3971-3978. PMCID: PMC25692

34. Muhlrad, D. and **R. Parker**. (1999) Aberrant mRNAs with extended 3' UTRs are substrates for rapid degradation by mRNA surveillance. **RNA** 5:1299-1307. PMCID: PMC1369852

35. van Hoof, A., Lennertz, P. and **R. Parker**. (2000) Yeast exosome mutants accumulate 3'-extended polyadenylated forms of U4 small nuclear RNA and small nucleolar RNAs. **Molecular and Cellular Biology** 20:441-452. PMCID: PMC85098

36. van Hoof, A., Lennertz, P. and **R. Parker**. (2000) Three conserved members of the RNase D family have unique and overlapping functions in the processing of 5S, 5.8S, U4, U5, RNase MRP and RNase P RNAs in yeast. **EMBO Journal** 19: 1357-1365. PMCID: PMC305676

37. Tharun, S., He, W., Mayes, A.E., Lennertz, P., Beggs, J.D. and **R. Parker**. (2000) Yeast Sm-like proteins function in mRNA decapping and decay. **Nature** 404:515-518.

38. Jacobs Anderson, J.S. and **R. Parker**. (2000) Computational identification of *cis*-acting elements affecting post-transcriptional control of gene expression in *Saccharomyces cerevisiae.* **Nucleic Acids Research** 28:1604-1617. PMCID: PMC102784

39. Schwartz, D.C. and **R. Parker**. (2000) mRNA decapping in yeast requires dissociation of the cap binding protein, eukaryotic translation initiation factor 4E. **Molecular and Cellular Biology** 20:7933-7942. PMCID: PMC86404

40. van Hoof, A., Staples, R.R., Baker, R.E. and **R. Parker**. (2000) Function of the Ski4p (Csl4p) and Ski7p proteins in 3'-to-5' degradation of mRNA. **Molecular and Cellular Biology** 20:8230-8243. PMCID: PMC86432

Original Research Papers (continued)

41. Olivas, W. and **R. Parker**. (2000) The Puf3 protein is a transcript-specific regulator of mRNA degradation in yeast. **EMBO Journal** 19:6602-6611. PMCID: PMC305854

42. Dunckley T., Tucker, M. and **R. Parker**. (2001) Two related proteins, Edc1p and Edc2p, stimulate mRNA decapping in *Saccharomyces cerevisiae.* **Genetics** 157:27-37. PMCID: PMC1461477

43. Tucker, M., Valencia-Sanchez M.A., Staples R.R., Chen J., Denis C.L. and **R. Parker**. (2001) The transcription factor associated proteins Ccr4 and Caf1 proteins are components of the major cytoplasmic mRNA deadenylase in *Saccharomyces cerevisiae.* **Cell** 104:377-386.

44. Hilleren, P. and **R. Parker**. (2001) Defects in the mRNA export factors Rat7p, Gle1p, Mex67p and Rat8p cause hyperadenylation during 3' end formation of nascent transcripts. **RNA** 7:753-764. PMCID: PMC1370127

45. He, W. and **R. Parker**. (2001) The yeast cytoplasmic LsmI/Pat1p complex protects mRNA 3' termini from partial degradation. **Genetics** 158:1445-1455. PMCID: PMC1461746

46. Cao, D. and **R. Parker**. (2001) Computational modeling of eukaryotic mRNA turnover. **RNA** 7:1192-1212. PMCID: PMC1370166

47. Tharun, S. and **R. Parker**. (2001) Targeting an mRNA for decapping: displacement of translation factors and association of the Lsm1p-7p complex on deadenylated yeast mRNAs. **Molecular Cell** 8:1075-1083.

48. Coller, J.M., Tucker, M., Sheth, U., Valencia-Sanchez, M.A. and **R. Parker**. (2001) The DEAD box helicase, Dhh1p, functions in mRNA decapping and interacts with both the decapping and deadenylase complexes. **RNA** 7:1717-1727. PMCID: PMC1370212

49. Hilleren, P., McCarthy, T., Rosbash, M., **Parker, R.** and T.H. Jensen. (2001) Quality control of mRNA 3'-end processing is linked to the nuclear exosome. **Nature** 413:538-542.

50. Tucker, M., Staples, R.R., Valencia-Sanchez, M.A., Muhlrad, D. and **R. Parker**. (2002) Ccr4p is the catalytic sub-unit of a Ccr4/Pop2p/Notp mRNA deadenylase complex in *Saccharomyces cerevisiae*. **EMBO Journal** 21:1427-1436. PMCID: PMC125913

51. van Hoof, A., Frischmeyer, P.A., Dietz, H.C. and **R. Parker**. (2002) Exosome-mediated recognition and degradation of mRNAs lacking a termination codon. **Science** 295:2262-2264.

52. Frischmeyer, P.A., van Hoof, A., O'Donnell, K., Guerrerio, A.L., **Parker, R.** and H.C. Dietz. (2002) An mRNA surveillance mechanism that eliminates transcripts lacking termination codons. **Science** 295:2258-2261.

53. Steiger, M., Carr-Schmid, A., Schwartz, D.C., Kiledjian, M. and **R. Parker**. (2003) Analysis of recombinant yeast decapping enzyme. **RNA** 9:231-238. PMCID: PMC1370389

Original Research Papers (continued)

54. Schwartz, D., Decker, C.J. and **R. Parker**. (2003) The enhancer of decapping proteins, Edc1p and Edc2p, bind RNA and stimulate activity of the decapping enzyme. **RNA** 9:239-251. PMCID: PMC1370390

55. Sheth, U. and **R. Parker**. (2003) Decapping and decay of messenger RNA occur in cytoplasmic processing bodies. **Science** 300:805-808. PMCID: PMC1876714

56. Cao, D. and **R. Parker**. (2003) Computational modeling and experimental analysis of nonsense-mediated decay in yeast. **Cell** 113:533-545.

57. Hilleren, P.J. and **R. Parker**. (2003) Cytoplasmic degradation of splice-defective pre-mRNAs and intermediates. **Molecular Cell** 12:1453-1465.

58. She, M., Decker, C.J., Sundramurthy, K., Liu, Y., Chen, N., **Parker, R.** and H. Song. (2004) Crystal structure of Dcp1p and its functional implications in mRNA decapping. **Nature Structural & Molecular Biology** 11:249-256. PMCID: PMC2040073

59. Kshirsagar, M. and **R. Parker**. (2004) Identification of Edc3p as an enhancer of mRNA decapping in *Saccharomyces cerevisiae.* **Genetics**166:729-739. PMCID: PMC1470743

60. Baker, K.E., Coller, J.M. and **R. Parker**. (2004) The yeast Apq12 protein affects nucleocytoplasmic mRNA transport. **RNA** 10:1352-1358. PMCID: PMC1370622

61. Cheng, Z., Liu, Y., Wang, C., **Parker R.** and H. Song. (2004) Crystal structure of Ski8p, a WD-repeat protein with dual roles in mRNA metabolism and meiotic recombination. **Protein Science** 13:2673-2684. PMCID: PMC2001155

62. Chen, N., Walsh, M.A., Liu, Y., **Parker, R.** and H. Song. (2005) Crystal structures of human DcpS in ligand-free and m^7GDP-bound forms suggest a dynamic mechanism for scavenger mRNA decapping. **Journal of Molecular Biology** 347:707-718.

63. Muhlrad, D. and **R. Parker**. (2005) The yeast EDC1 mRNA undergoes deadenylation-independent decapping stimulated by Not2p, Not4p, and Not5p. **EMBO Journal** 24:1033-1045. PMCID: PMC554118

64. Teixeria, D., Sheth, U., Valencia-Sanchez, MA, Brengues, M. and **R. Parker**. (2005) Processing bodies require RNA for assembly and contain non-translating mRNAs. **RNA** 11:371-382. PMCID: PMC1370727

65. Tharun, S., Muhlrad, D., Chowdhury, A. and **R. Parker**. (2005) Mutations in the *Saccharomyces cerevisiae* LSM1 gene that affect mRNA decapping and 3' end protection. **Genetics** 170:33-46. PMCID: PMC1449704

66. Cheng, Z., Coller, J., **Parker, R.** and H. Song. (2005) Crystal structure and functional analysis of DEAD-box protein Dhh1p. **RNA** 11:1258-1270. PMCID: PMC1370809

67. Wilson, M.A., Meaux, S., **Parker, R.** and A. van Hoof. (2005) Genetic interactions between [*PSI*$^+$] and nonstop mRNA decay affect phenotypic variation **Proceeding of the National Academy of Science** 102:10244-10249. PMCID: PMC1173365

Original Research Papers (continued)

68. Coller, J. and **R. Parker**. (2005) General translational repression by activators of mRNA decapping. **Cell** 122:875-886. PMCID: PMC1853273

69. Brengues, M., Teixeria, D. and **R. Parker**. (2005) Movement of eukaryotic mRNAs between polysomes and cytoplasmic processing bodies. **Science** 310:486-489. PMCID: PMC1863069

70. Liu, J., Valencia-Sanchez, M.A., Hannon, G.J. and **Parker, R.** (2005). MicroRNA-dependent localization of targeted mRNAs to mammalian P-bodies. **Nature Cell Biology** 7:719-723. PMCID: PMC1855297

71. Liu, J., Rivas, F.V., Wohlschlegel, J., Yates III, J.R., **Parker, R.** and G.J. Hannon. (2005) A role for the P-body component GW182 in microRNA function. **Nature Cell Biology** 7:1261-1266. PMCID: PMC1804202

72. Beliakova-Bethell, N., Beckham, C., Giddings Jr., T.H., Winey, M., **Parker, R.** and S. Sandmeyer. (2006) Virus-like particles of the Ty3 retrotransposon assemble in association with P-body components. **RNA** 12:94-101. PMCID: PMC1370889

73. She, M., Decker, C.J., Chen, N., Tumati, S., **Parker, R.** and H. Song. (2006) Crystal structure and functional analysis of Dcp2p from *Schizosaccharomyces pombe.* **Nature Structural and Molecular Biology** 13:63-70. PMCID: PMC1952686

74. Doma, M.K. and **R. Parker**. (2006) Endonucleolytic cleavage of eukaryotic mRNAs with stalls in translation elongation. **Nature** 440:561-564. PMCID: PMC1839849

75. Sheth, U. and **R. Parker**. (2006) Targeting of aberrant mRNAs to cytoplasmic processing bodies. **Cell** 125:1095-1109. PMCID: PMC1858659

76. Hilgers, V., Teixeira, D. and **R. Parker**. (2006). Translation-independent inhibition of mRNA deadenylation during stress in *Saccharomyces cerevisiae*. **RNA** 12:1835-1845. PMCID: PMC1581975

77. Segal, S.P., Dunckley, T.C. and **R. Parker**. (2006) Sbp1p affects translational repression and decapping in *Saccharomyces cerevisiae.* **Molecular and Cellular Biology** 26:5120-5130. PMCID: PMC1489156

78. Baker, K.E. and **R. Parker**. (2006) Conventional 3' end formation is not required for NMD substrate recognition in *Saccharomyces cerevisiae*. **RNA** 12:1441-1445.

79. Barbee, S.A., Estes, P.S., Cziko, A-M., Hillebrand, J., Luedeman, R.A., Coller, J.M., Johnson, N., Howlett, I.C., Geng, C., Ueda, R., Brand, A.H., Newbury, S.F., Wilhelm, J.E., Levine, R.B., Nakamura, A., **Parker, R.**, and M. Ramaswami. (2006) Staufen- and FMRP-containing neuronal RNPs are structurally and functionally related to somatic P bodies. **Neuron** 52:997-1009. PMCID: PMC1955741

Original Research Papers (continued)

80. Thompson, D. M. and **R. Parker**. (2007) Cytoplasmic decay of intergenic transcripts in *Saccharomyces cerevisiae*. **Molecular and Cellular Biology** 27:92-101. PMCID: PMC1800667

81. Cheng, Z., Muhlrad, D., Lim, M.K., **Parker, R.** and H. Song (2007) Structural and functional insights into the human Upf1 helicase core. **EMBO Journal** 26:253-64. PMCID: PMC1782376

82. Teixeira, D. and **R. Parker.** (2007) Analysis of P-body assembly in *Saccharomyces cerevisiae.* **Molecular Biology of the Cell** 18:2274-2287. PMCID: PMC1877105

83. Brengues, M. and **R. Parker.** (2007) Accumulation of polyadenylated mRNA, Pab1p, eIF4E, and eIF4G with P-bodies in *Saccharomyces cerevisiae*. **Molecular Biology of the Cell** 18:2592-2602. PMCID: PMC1924816

84. Beckham, C.J., Light, H.R., Nissan, T.A., Ahlquist, P., **Parker, R.**, and A. Nouiery. (2007) Interactions between brome mosaic virus RNAs and cytoplasmic processing bodies. **Journal of Virology** 81:9759-9768. PMCID: PMC2045432

85. Decker, C.J., Teixeira, D., and **R. Parker**. (2007) Edc3p and a glutamine/asparagine-rich domain of Lsm4p function in processing body assembly in *Saccharomyces cerevisiae*. **Journal of Cell Biology** 179:437-449. PMCID: PMC2064791

86. Pilkington, G.R., and **R. Parker**. (2008) Pat1 contains distinct functional domains that promote P-body assembly and activation of decapping. **Molecular and Cellular Biology** 28:1298-1312. PMCID: PMC2258743

87. Beckham, C.J., Hilliker, A., Cziko, A.-M., Noueiry, A., Ramaswami, M., and **R. Parker.** (2008) The DEAD-Box RNA helicase Ded1p affects and accumulates in *Saccharomyces cerevisiae* P-bodies. **Molecular Biology of the Cell** 19:984-993. PMCID: PMC2262982

88. She, M., Decker, C.J., Svergun, D.I., Round, A., Chen, N., Muhlrad, D., **Parker, R.**, and H. Song. (2008) Structural basis of Dcp2 recognition and activation by Dcp1. **Molecular Cell** 29:337-349. PMCID: PMC2323275

89. Nissan, T. and **R. Parker**. (2008) Computational analysis of miRNA-mediated repression of translation: Implications for models of translation initiation inhibition. **RNA** 14:1480-1491. PMCID: PMC2491470

90. Ling, S.H., Decker, C.J., Walsh, M.A., She, M., **Parker, R.** and H. Song (2008) Crystal structure of human Edc3 and its functional implications. **Molecular and Cellular Biology** 28:5965-5976. PMCID: PMC2547010

91. Pedro-Segura, E., Vergara, S.V., Rodríguez-Navarro, S., **Parker, R.**, Thiele, D.J. and S. Puig (2008) The Cth2 ARE-binding protein recruits the Dhh1 helicase to promote the decay of succinate dehydrogenase SDH4 mRNA in response to iron deficiency. **Journal of Biological Chemistry** 283:28527-28535. PMCID: PMC2568921

Original Research Papers (continued)

92. Thompson, D.M., Lu, C., Green, P.J. and **R. Parker**. (2008) tRNA cleavage is a conserved response to oxidative stress in eukaryotes. **RNA** 14:2095-2103. PMCID: PMC2553748

93. Buchan, J.R., Muhlrad, D. and **R. Parker**. (2008) P-bodies promote stress granule assembly in *Saccharomyces cerevisiae*. **Journal of Cell Biology** 183:441-455. PMCID: PMC2575786

94. Balagopal, V. and **R. Parker**. (2009) Stm1 modulates mRNA decay and Dhh1 function in *Saccharomyces cerevisiae*. **Genetics** 181:93-103. PMCID: PMC2621192

95. Thompson, D. and **R. Parker**. (2009) The RNase Rny1p cleaves tRNAs and promotes cell death during oxidative stress in *Saccharomyces cerevisiae.* **Journal of Cell Biology** 185:43-50. PMCID: PMC2700514

96. Chekulaeva, M., Filipowicz, W. and **R. Parker**. (2009) Multiple independent domains of dGW182 function in miRNA-mediated repression in *Drosophila* **RNA** 15:794-803. PMCID: PMC2673071

97. Passos, D.O., Doma, M.K, Shoemaker, C.J., Muhlrad, D., Green, R., Weissman, J., Hollien, J. and **R. Parker**. (2009) Analysis of Dom34 and its function in no-go decay. **Molecular Biology of the Cell** 20:3025-3032. PMCID: PMC2704154

98. Luhtala, N. and **R. Parker**. (2009) LSM1 over-expression in Saccharomyces cerevisiae depletes U6 snRNA levels. **Nucleic Acids Research** 37:5529-5536. PMCID: PMC2760792

99. Cziko, A.-M.J., McCann, C.T., Howlett, I.C., Barbee, S.A., Duncan, R.P., Luedemann, R., Zarnescu, D., Zinsmaier, K.E., **Parker, R.R.** and M. Ramaswami. (2009) Genetic modifiers of *dFMR1* encode RNA granule components in Drosophila. **Genetics** 182:1051-1060. PMCID: PMC2728847

100. Harigaya, Y., Jones, B.N., Muhlrad, D., Gross, J.D. and **R. Parker**. (2010) Identification and analysis of the interaction between Edc3 and Dcp2 in *Saccharomyces cerevisiae.* **Molecular and Cellular Biology** 30:1446-1456. PMCID: PMC2832485

101. Yoon, J-H., Choi, E-J. and **R. Parker**. (2010) Dcp2 phosphorylation by Ste20 modulates stress granule assembly and mRNA decay in *Saccharomyces cerevisiae.* **Journal of Cell Biology** 189:813-827. PMCID: PMC2878948

102. Swisher K.D. and **R. Parker**. (2010) Localization to, and Effects of Pbp1, Pbp4, Lsm12, Dhh1, and Pab1 on Stress Granules in *Saccharomyces cerevisiae.* **PLOS ONE** 5:e10006 PMCID: PMC2848848

103. Nissan, T., Rajyaguru, P., She, M., Song, H. and **R. Parker**. (2010) Decapping activators in Saccharomyces cerevisiae act by multiple mechanisms. **Molecular Cell** 39:773-783. PMCID: PMC2946179

104. Chen, L., Muhlrad, D., Hauryliuk, V., Cheng, Z., Lim, M.K., Shyp, V., **Parker, R.** and H. Song. (2010) Structure of the Dom34-Hbs1 complex and implications for no-go decay. **Nature Structural & Molecular Biology** 17:1233-1240. PMCID: PMC3682582

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