

CURRICULUM VITAE

Roy Parker

Howard Hughes Medical Institute
Department of Biochemistry
University of Colorado Boulder
Jennie Smoly Caruthers Biotechnology Building
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United States

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
2024- 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)
RNA/Cold Spring Harbor Laboratory Press Distinguished Research Mentor Award (2025)

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](https://pubmed.ncbi.nlm.nih.gov/1201965/)
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.

Original Research Papers (continued)

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
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 *MAT α 1* 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. Muhlrads, 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., Muhlrads, 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. Muhlrads, 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.

Original Research Papers (continued)

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.
16. Caponigro, G., Muhlrads, D. and **R. Parker**. (1993) A small segment of the MAT α 1 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. Muhlrads, 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. Muhlrads, D. and **R. Parker**. (1994) Premature translational termination triggers mRNA decapping. **Nature** 370:578-581.
20. Muhlrads, 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 MAT α 1 instability element. **Nucleic Acids Research** 24:4304-4312. PMCID: PMC146253
26. Olivas, W. M., Muhlrads, 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

Original Research Papers (continued)

28. LaGrandeur, T.E. and **R. Parker**. (1998) Isolation and characterization of Dcp1p, the yeast mRNA decapping enzyme. **EMBO Journal** 17:1487-1496. [PMCID: PMC1170496](#)
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. **Genetics** 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 cerevisiae* and contains a functional MutT motif. **EMBO Journal** 18: 5411-5422. [PMCID: PMC1171610](#)
33. Muhlrads, 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. Muhlrads, 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](#)

Original Research Papers (continued)

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](#)
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 Lsm1/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., Muhlrads, 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., Guerrero, A.L., **Parker, R.** and H.C. Dietz. (2002) An mRNA surveillance mechanism that eliminates transcripts lacking termination codons. **Science** 295:2258-2261.

Original Research Papers (continued)

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](#)
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., Collier, 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 m⁷GDP-bound forms suggest a dynamic mechanism for scavenger mRNA decapping. **Journal of Molecular Biology** 347:707-718.
63. Muhlrads, 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. Teixeira, 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., Muhlrads, 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., Collier, J., **Parker, R.** and H. Song. (2005) Crystal structure and functional analysis of DEAD-box protein Dhh1p. **RNA** 11:1258-1270. [PMCID: PMC1370809](#)

Original Research Papers (continued)

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

Original Research Papers (continued)

79. Barbee, S.A., Estes, P.S., Cziko, A-M., Hillebrand, J., Luedeman, R.A., Collier, 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](#)
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., Muhlrads, 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., Nouiery, 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., Muhlrads, 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](#)

Original Research Papers (continued)

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](#)
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., Muhlrads, 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., Muhlrads, 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., Muhlrads, 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](#)
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