

BIOGRAPHICAL SKETCH

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NAME Dinshaw J. Patel		POSITION TITLE Abby Rockefeller Mauze Chair in Experimental Therapeutics, Structural Biology Program, MSKCC	
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
University of Bombay, India	B.Sc.	1961	Chemistry
California Institute of Technology	M.S.	1963	Chemistry
New York University	Ph.D.	1968	Chemistry

Positions and HonorsPostdoctoral Training:

1967	Postdoc	Biochemistry	New York Univ. Medical School
1968 - 1969	Postdoc	Biophysics	AT&T Bell Laboratories

Appointments:

1970 - 1984	Member of Technical Staff, Polymer Chemistry Department, AT&T Bell Laboratories, Murray Hill, NJ
1984 - 1992	Professor of Biochemistry & Molecular Biophysics, College of Physicians & Surgeons, Columbia University, New York, NY
1992 -	Member, Structural Biology Program Memorial Sloan-Kettering Cancer Center (MSKCC), New York, New York
1994 -	Professor, Graduate Program in Biochemistry & Structural Biology, Weill School of Medical Sciences, Cornell University, New York, NY

Honors:

1961 - 1963	Jamshetjee N. Tata Fellow
1983	AT&T Bell Laboratories Distinguished Technical Staff Award
1992 -	Abby Rockefeller Mauzé Chair in Experimental Therapeutics (MSKCC)
1997	Distinguished Alumnus Award, New York University
1997 - 1999	Harvey Society (Vice-President 97-98; President 98-99)
2009	Member, National Academy of Sciences, USA
2010	2010 John D. Roberts Lecture, California Institute of Technology, Pasadena, CA

External Review Committees:

1984 -	National Institutes of Health, Bethesda, MD • Member, Molecular and Cellular Biophysics Study Section (84-88) • National Cancer Institute, Board of Scientific Counselors-B (00-05)
1989 - 1996	Howard Hughes Medical Institute, Chevy Chase, MD • Member, Scientific Review Board - Structural Biology (89-92) • Member, Medical Advisory Board (93-96)
2009 -	Scientific Advisory Board, European Institute of Chemistry & Biology, Bordeaux, France
2010 -	Scientific Advisory Board, Epinova, GlaxoSmithKline, Stevenage, United Kingdom
2011-	Scientific Advisory Board, Institute for Research in Biomedicine, Barcelona, Spain

Selected publications:

2003

Ye, K., Malinina, L. & Patel, D. J. (2003). Recognition of siRNA by a viral suppressor of RNA silencing. **Nature** 426, 874-878.

2004

Ma, J.-B., Ye, K. & Patel, D. J. (2004). Structural basis for overhang-specific small interfering RNA recognition by the PAZ domain. **Nature** 429, 318-322.

Malinina, L., Malakhova, M. L., Teplov, A., Brown, R. E. & Patel, D. J. (2004). Structural basis for glycosphingolipid transfer specificity. **Nature** 430, 1048-1053.

2005

Ma, J. B., Yuan, Y. R., Meister, G., Pei, Y., Tuschl, T. & Patel, D. J. (2005). Structural basis for 5'-end-specific recognition of the guide RNA strand by the *A. fumigatus* PIWI protein. **Nature** 434, 666-670.

Serganov, A., Keiper, S., Malinina, L., Tereschko, V., Skripkin, E., Hobartner, C., Polonskaia, A., Phan, A. T., Wombacher, R., Micura, R., Dauter, Z., Jaschke, A. & Patel, D. J. (2005). Structural basis for Diels-Alder ribozyme catalyzed carbon-carbon bond formation. **Nat. Struct. Mol. Biol.** 12, 218-224.

Phan, A. T., Kuryavyi, V., Gaw, H. Y. & Patel, D. J. (2005). Targeting anticancer drugs to a parallel-stranded snapback G-quadruplex formed by five-guanine tracts of the human c-myc promoter. **Nat. Chem. Biol.** 1, 167-173.

Yuan, Y. R., Ma, J. B., Kuryavyi, V., Pei, Y., Zhadina, M., Meister, G., Chen, H. Y., Dauter, Z., Tuschl, T. & Patel, D. J. (2005). Crystal structure of *Aquifex aeolicus* Argonaute provides unique perspectives into the mechanism of guide strand-mediated mRNA cleavage. **Mol. Cell** 19, 405-419.

2006

Serganov, A., Polonskaia, A., Phan, A. T., Breaker, R. R. & Patel, D. J. (2006). Structural basis for gene regulation by a riboswitch that senses thiamine pyrophosphate. **Nature** 441, 1167-1171.

Li, H., Ilin, S., Wang, W. K., Wysocka, J., Allis, C. D. & Patel, D. J. (2006). Molecular basis for site-specific readout of H3 lysine 4 trimethylation by the BPTF PHD finger. **Nature** 442, 91-95.

Teplova, M., Yuan, Y. R., Phan, A. T., Malinina, L., Ilin, S., Teplov, A. & Patel, D. J. (2006). Structural basis for recognition and sequestration of UUU_{OH} 3'-termini of nascent mRNA polymerase III transcripts by La autoantigen. **Mol. Cell** 21, 75-85.

Rechko, O., Malinina, L., Cheng, Y., Kuryavyi, V., Broyde, S., Geacintov, N. & Patel, D. J. (2006). Stepwise translocation of Dpo4 polymerase during error-free bypass of oxoG lesion. **PLoS Biology** 4, 25-42.

Ruthenberg, A. J., Wang, W., Graybosch, D. M., Li, H., Allis, C. D., Patel, D. J. & Verdine, G. L. (2006). Histone H3 lysine 4 methylation state recognition and presentation by the WDR5 module of the MLL1 complex. **Nat. Struct. Mol. Biol.** 13, 704-712.

Malinina, L., Malakhova, M. L., Kanack, A. T., Brown, R. E. & Patel, D. J. (2006). The liganding mode of glycolipid transfer protein is controlled by glycolipid acyl structure. **PLoS Biology** 4, 1996-2011.

Taverna, S. D., Ilin, S., Rogers, R. S., Tanny, J. C., Lavender, H., Li, H., Baker, L., Boyle, J., Blair, L. P., Chait, B., Patel, D. J., Aitchison, J. D., Tackett, A. J. & Allis, C. D. (2006). Yng1 PHD finger binding to H3 trimethylated at K4 targets promotes NuA3 HAT activity at K14 of H3 and transcription at a subset of targeted ORFs. **Mol. Cell** 24, 785-796.

Zhang, X., Yuan, Y.-R., Pei, Y., Tuschl, T., Patel, D. J. & Chua, N.-H. (2006). Cucumber mosaic virus-encoded 2b suppressor inhibits *Arabidopsis* AGO1 cleavage activity to counter plant defense. **Genes Dev.** 20, 3255-3268.

2007

Bailor, M. H., Musselman, C., Hansen, A. L., Gulati, K., Patel, D. J. & Al-Hashimi, H. M. (2007). Characterizing the relative orientation and dynamics of RNA A-form helices using NMR residual dipolar couplings. *Nat. Protocols* 2, 1536-1546.

Li, H., Wang, W. K., Fischle, W., Duncan, E. M., Liang, L., Allis, C. D. & Patel, D. J. (2007). Structural basis for lower lysine methylation state-specific readout by MBT repeats and an engineered PHD finger module. *Mol. Cell* 28, 677-691.

Taverna, S. D., Li, H., Ruthenburg, A. J., Allis, C. D. & Patel, D. J. (2007). How chromatin-binding modules interpret histone modifications: Lessons from professional pocket pickers. *Nat. Struct. Mol. Biol.* 14, 1025-1040.

Serganov, A. & Patel, D. J. (2007). Ribozymes and riboswitches: beyond simple RNA. *Nat. Rev. Genetics* 8, 776-790.

Ruthenburg, A. J., Li, H., Patel, D. J. & Allis, C. D. (2007). Multivalent engagement of chromatin modifications by linked binding modules. *Nat. Rev. Mol. Cell Biol.* 8, 983-994.

2008

Serganov, A., Huang, L. & Patel, D. J. (2008). Structural insights into amino acid binding and gene control by a lysine riboswitch. *Nature* 455, 1263-1267.

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2009

Xiao, A., Li, H., Shechter, D., Ahn, S. H., Fabrizio, L., Erajument-Bromage, H., Murakami-Ishibe, S., Wang, B., Tempst, P., Hofmann, K., Patel, D. J., Elledge, S. J. & Allis, C. D. (2009). WSTF regulates the DNA damage response of H2A.X via a novel tyrosine kinase activity. *Nature* 457, 57-62.

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Wang, Y., Juranek, S., Li, H., Sheng, G., Wardle, G. S., Tuschl, T. & Patel, D. J. (2009). Nucleation, propagation and cleavage of target RNAs in argonaute silencing complexes. *Nature* 461, 754-761.

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Weinberg, D., Nakanishi, K., Patel, D. J. & Bartel, D. P. (2011). The inside-out mechanism of Dicers from budding yeasts. **Cell** in press.

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Eerappa R., Law, J. A., Shimanshu, D. K., Voigt, P., Johnson, L. M., Reinberg, D., Patel, D. J. & Jacobsen, S. E. (2011). A dual flip out mechanism for 5mC recognition by the *Arabidopsis* SUVH5 SRA domain and its impact on DNA methylation and H3K9 dimethylation *in vivo*. **Genes Dev.** 25, 137-152.

Tian, Y., Simanshu, D. K., Ascano, M., Daiz-Avalos, R., Park, A. Y., Juranek, S. A., Rice, W. J., Yin, Q., Robinson, C. C., Tuschl, T. & Patel, D. J. (2011). Multimeric assembly of *Drosophila* C3PO, a RISC-activation-promoting endoribonuclease. **Nat. Struct. Mol. Biol.** in press.

Iwase, S., Xiang, B., Ghosh, S., Ren, T., Lewis, P. W., Cochrane, J. C., Allis, C. D., Picketts, D. J., Patel, D. J., Li, H. & Shi, Y. (2011). ATRX links atypical histone methylation recognition mechanisms to human brain function. **Nat. Struct. Mol. Biol.** in press.

Phan, A. T., Kuryavyi, V., Darnell, J. C., Serganov, A., Majumdar, A., Raslin, T., Polonskaia, A., Chen, C., Clain, D., Darnell, R. B. & Patel, D. J. (2011). Structure-function studies of FMRP RGG peptide recognition of an RNA duplex-quadruplex junction. **Nat. Struct. Mol. Biol.** in press.

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