

BIOGRAPHICAL SKETCH

NAME Jingyue Ju	POSITION TITLE Professor of Chemical Engineering & Molecular Pharmacology and Therapeutics Director, Center for Genome Technology and Biomolecular Engineering Columbia University
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EDUCATION/TRAINING

INSTITUTION AND LOCATION	DEGREE	YEAR(s)	FIELD OF STUDY
University of California at Berkeley	Postdoctoral	1994-95	Genomics Research
University of Southern California	Ph.D.	1994	Bioorganic Chemistry
Dalian Institute of Chemical Physics, Chinese Academy of Sciences	M.S.	1988	Organic Chemistry
Inner Mongolia University, China	B.S.	1985	Chemistry

PROFESSIONAL POSITIONS

2011-Present	Samuel Ruben-Peter G. Viele Professor of Engineering, Columbia University
2010-Present	Professor of Chemical Engineering & Molecular Pharmacology and Therapeutics, Columbia University
2003-Present	Director, Center for Genome Technology and Biomolecular Engineering, Columbia University
2005-2010	Professor of Chemical Engineering, Head of DNA Sequencing and Chemical Biology, Columbia Genome Center, Columbia University
1999-2005	Associate Professor of Chemical Engineering, Head of DNA Sequencing and Chemical Biology, Columbia Genome Center, Columbia University
1995-1999	Senior Scientist & Director, Chemistry and Assay Development, Incyte Genomics, Inc.

AWARDS

The Department of Chemistry Distinguished Alumnus Award, University of Southern California, 2023

Elected Fellow of National Academy of Inventors, 2018.

Top 20 Translational Researchers of 2019 & 2020, Nature Biotechnology (2021, 39, 1332-1333; 2020, 38, 1121-1122).

Distinguished Fundamental Research Award for Next Generation DNA Sequencing Research & Development. Next Generation Sequencing (NGS) Research and Development Association, 2017.

Samuel Ruben-Peter G. Viele Professor of Engineering, Columbia University, 2011.

Outstanding Chinese Scholar Achievement Award, Columbia University Chinese Students and Scholars Association, 2004.

Packard Fellowship in Science and Engineering, 2001-2006.

Invited Attendee, National Academy of Engineering *8th Annual Frontiers of Engineering Symposium*, 2002.

DOE Human Genome Distinguished Postdoctoral Fellowship, 1994-1995.

U.S. Biochemical Postdoctoral Fellowship, 1993.

PROFESSIONAL ACTIVITIES

Session Chair, *Next Generation Sequencing Conference*, July 7-8, 2011, San Francisco.

Organizer and Chair, *2008 International Conference on Genomics*, Hong Kong, China, 11/2-11/5, 2008.

Organizer and Chair, *2007 International Conference on Genomics*, Hong Kong, China, 10/30-11/2, 2007.

Session Chair, "*Symposium on New DNA Sequencing Technologies*", International Conference on Genomics, Hangzhou, China, October 23-24, 2006.

Organizer and Chair, “*New Technologies & Genome Sequencing*” BioArrays-2004-New York Conference, July 26-27, 2004.

Organizer and Chair, “*New Technology and Toxicogenomics*” BioArrays-2003-New York Conference, October 1-2, 2003.

Organizer and Chair, *Symposium on Genomics and Chemical Biology*, Post 15th International Conference on Phosphorus Chemistry, Beijing, China, August 6-8, 2001.

Chair, *DNA Sequencing Technology Session, Human Genome Meeting*, Human Genome Organization (HUGO), 1997.

NIH Small Business (SBIR/STTR) NIH Study Section 2024

NIH Review Panel (*Single Molecule Protein Sequencing*) 2022

NIH Review Panel (*Emerging Centers of Excellence in Genomic Sciences*) 2020, 2021

NIH Review Panel (*Genomics Computational Biology and Technology Study Section*) 2005, 2006

NIH Review Panel (*Genetic and Genomic Approaches to Nervous System Function and Dysfunction*) 2004

NIH Review Panel (*Biophysical and Chemical Sciences*) SBIR/STTR 1997-2001

NSF Review Panel (*Biochemical Engineering and Biotechnology*) 2001

DOE Human Genome Program Review Panel (*Advanced DNA Sequencing Technology*) 1998

Reviewer for the Journal *Proceedings of the National Academy of Sciences, Nature Materials, Nucleic Acids Research, Analytical Chemistry, JACS, Organic Letters, Bioconjugate Chemistry* and *Biotechniques*.

ISSUED US PATENTS

1. United States Patent 12,559,797B2 (2026) J. Ju, D.H. Kim, L. Bi, Q. Meng, X. Li. “*Four-color DNA Sequencing by Synthesis Using Cleavable Fluorescent Nucleotide Reversible Terminators*”.
2. United States Patent 12,559,796B2 (2026) J. Ju, S. Kumar, J.J. Russo, S. Jockusch, Z. Li, X. Li, S. Kalachikov, I. Morozova. “*Fluorescence Energy Transfer-Based Single Molecule/Ensemble DNA Sequencing by Synthesis*”.
3. United States Patent 12,535,477B2 (2026) J. Ju, J.J. Russo, S. Kalachikov, C. Tao, S. Kumar, I. Morozova, X. Li. “*Single-Molecule Electronic Multiplex Nanopore Immunoassays for Biomarker Detection*”.
4. United States Patent 12,503,730B2 (2025) J. Ju, X. Li, X. Chen, Z. Li, S. Kumar, S. Shi, C. Guo, J. Ren, M. Hsieh, M. Chien, C. Tao, E. Erturk, S. Kalachikov, J. J. Russo. “*Detectable Nucleotide Analogues*”.
5. United States Patent 12,467,085B2 (2025) J. Ju, C. Fuller, S. Kumar, S. Kalachikov, X. Li, I. Morozova, J.J. Russo, S. Jockusch. “*High Accuracy Nanopore-Based Single Molecule Sequencing by Synthesis with Tagged Nucleotides*”.
6. United States Patent 12,337,009B2 (2025) J. Ju, X. Chen, X. Li, Z. Li, M. Hsieh, M. Chien, S. Shi, J. Ren, C. Guo, S. Kumar, J.J. Russo, C. Tao, S. Jockusch, S. Kalachikov. “*Nucleotide Derivatives and Methods of Use Thereof*”.
7. United States Patent 12,331,352B2 (2025) J. Ju, D.H. Kim, J. Guo, Q. Meng, Z. Li, H. Cao. “*DNA Sequencing with Non-fluorescent Nucleotide Reversible Terminators and Cleavable Label Modified Nucleotide Terminators*”.
8. United States Patent 12,188,086B2 (2025) J. Ju, X. Li, S. Kumar, X. Chen, J.J. Russo, M. Chien, S. Jockusch, C. Tao, X. Wang, S. Kalachikov, I. Morozova, S. Shi. “*Nucleotide Analogues and Use Thereof for Nucleic Acid Sequencing and Analysis Preliminary Class*”.
9. United States Patent 12,180,544B2 (2024) J. Ju, H. Cao, Z. Li, Q. Meng, J. Guo, S. Zhang, Y. Lin. “*Synthesis of Cleavable Fluorescent Nucleotides as Reversible Terminators for DNA Sequencing by Synthesis*”.

10. United States Patent 12,173,366B2 (2024) J. Ju, S. Kumar, Z. Li, C. Tao, M. Chien, J.J. Russo, S. Kalachikov, K. Shepard, J.K. Rosenstein. *"DNA Sequencing by Synthesis Using Modified Nucleotides and Nanopore Detection"*.
11. United States Patent 12,018,325B2 (2024) J. Ju, X. Li, X. Chen, S. Kumar, J. Russo, M. Chien. *"3'-O-Modified Nucleotide Analogues with Different Cleavable Linkers for Attaching Fluorescent Labels to the Base for DNA Sequencing by Synthesis"*.
12. United States Patent 12,006,540B2 (2024) J. Ju, X. Li, X. Chen, Z. Li, S. Kumar, S. Shi, C. Guo, J. Ren, M. Hsieh, M. Chien, C. Tao, E. Erturk, S. Kalachikov, J. J. Russo. *"Synthesis of Novel Disulfide Linker Based Nucleotides as Reversible Terminators for DNA Sequencing by Synthesis"*.
13. United States Patent 11,999,999B2 (2024) J. Ju, X. Li, X. Chen, Z. Li, S. Kumar, S. Shi, C. Guo, J. Ren, M. Hsieh, M. Chien, C. Tao, E. Erturk, S. Kalachikov, J. J. Russo. *"Synthesis of Novel Disulfide Linker Based Nucleotides as Reversible Terminators for DNA Sequencing by Synthesis"*.
14. United States Patent 11,959,137B2 (2024) J. Ju, X. Li, X. Chen, Z. Li, S. Kumar, S. Shi, C. Guo, J. Ren, M. Hsieh, M. Chien, C. Tao, E. Erturk, S. Kalachikov, J. J. Russo. *"Synthesis of Novel Disulfide Linker Based Nucleotides as Reversible Terminators for DNA Sequencing by Synthesis"*.
15. United States Patent 11,939,631 (2024) J. Ju, D.H. Kim, L. Bi, Q. Meng, X. Li. *"Four-color DNA Sequencing by Synthesis Using Cleavable Fluorescent Nucleotide Reversible Terminators"*.
16. United States Patent 11,795,191B2 (2023) J. Ju, S. Kumar, C. Tao, M. Chien, J.J. Russo, J.J. Kasianowicz, J.W.F. Robertson. *"Method of Preparation of Nanopore and Uses Thereof"*.
17. United States Patent 11,674,174B2 (2023) S. Kalachikov, J. Ju, I. Morozova, M. Dorwart. *"Nucleic Acid Sequences Using Tags"*.
18. United States Patent 11,608,523 (2023) J. Ju, R. Davis, R. Chen. *"Nucleic Acid Sequencing by Nanopore Detection of Tag Molecules"*.
19. United States Patent 11,499,186 (2023) J. Ju, S. Kumar, Z. Li, C. Tao, M. Chien, J.J. Russo, S. Kalachikov, K. Shepard, J.K. Rosenstein. *"DNA Sequencing by Synthesis Using Modified Nucleotides and Nanopore Detection"*.
20. United States Patent 11,396,677 (2023) C. Fuller, S. Kumar, J. Ju, R. Davis, R. Chen *"Chemical Methods for Producing Tagged Nucleotides"*.
21. United States Patent 11,384,391 (2023) J. Ju, S. Kumar, J.J. Russo, S. Jockusch, Z. Li, X. Li, S. Kalachikov, I. Morozova. *"Fluorescence Energy Transfer-Based Single Molecule/Ensemble DNA Sequencing by Synthesis"*.
22. United States Patent 11,266,673 (2022) J. Ju, X. Chen, X. Li, Z. Li, M. Hsieh, M. Chien, S. Shi, J. Ren, C. Guo, S. Kumar, J.J. Russo, C. Tao, S. Jockusch, S. Kalachikov. *"Nucleotide Derivatives and Methods of Use Thereof"*.
23. United States Patent 11,242,561 (2022) J. Ju, D.H. Kim, J. Guo, Q. Meng, Z. Li, H. Cao. *"DNA Sequencing with Non-fluorescent Nucleotide Reversible Terminators and Cleavable Label Modified Nucleotide Terminators"*.
24. United States Patent 11,225,687 (2022) J. Ju, S. Kumar, J.J. Russo, S. Jockusch, Z. Li, X. Li, S. Kalachikov, I. Morozova. *"DNA Sequencing by Synthesis with Nucleotide Analogues and Raman Detection"*.
25. United States Patent 11,208,691 (2021) J. Ju, H. Cao, Z. Li, Q. Meng, J. Guo, S. Zhang, Y. Lin. *"Synthesis of Cleavable Fluorescent Nucleotides as Reversible Terminators for DNA Sequencing by Synthesis"*.
26. United States Patent 11,098,353 (2021) J. Ju, D.H. Kim, L. Bi, Q. Meng, X. Li. *"Four-color DNA Sequencing by Synthesis Using Cleavable Fluorescent Nucleotide Reversible Terminators"*.
27. United States Patent 11,085,076 (2021) J. Ju, X. Li, X. Chen, Z. Li, S. Kumar, S. Shi, C. Guo, J. Ren, M. Hsieh, M. Chien, C. Tao, E. Erturk, S. Kalachikov, J.J. Russo. *"Design and Synthesis of"*

- Novel Disulfide Linker Based Nucleotides as Reversible Terminators for DNA Sequencing by Synthesis*".
28. United States Patent 10,907,194 (2021) J. Ju, Q. Meng, D.H. Kim, L. Bi, X. Bai, N.J. Turro. *"Synthesis of Four-Color 3'-O-Allyl Modified Photocleavable Fluorescent Nucleotides and Related Methods"*.
 29. United States Patent 10,732,183 (2020) J. Ju, S. Kumar, C. Tao, S. Kalachikov, J.J. Russo, *"Method for Detecting Multiple Predetermined Compounds in A Sample"*.
 30. United States Patent 10,718,011 (2020) C. Tao, S. Kumar, M. Chien, J. Ju. *"Single Molecule Electronic Multiplex SNP Assay and PCR Analysis"*.
 31. United States Patent 10,689,412 (2020) J. Ju, J. Wu, Z. Li. *"DNA Sequencing by Synthesis Using Raman and Infrared Spectroscopy Detection"*.
 32. United States Patent 10,669,582 (2020) J. Ju, Z. Li, J.R. Edwards, Y. Itagaki. *"Massive Parallel Method for Decoding DNA and RNA"*.
 33. United States Patent 10,669,577 (2020) J. Ju, Z. Li, J.R. Edwards, Y. Itagaki. *"Massive Parallel Method for Decoding DNA and RNA"*.
 34. United States Patent 10,662,472 (2020) J. Ju, Z. Li, J.R. Edwards, Y. Itagaki. *"Massive Parallel Method for Decoding DNA and RNA"*.
 35. United States Patent 10,662,463 (2020) J. Ju, Y. Cho, S. Kumar, S. Kalachikov, C. Tao, M. Chien, J.J. Russo. *"Polymer Tagged Nucleotides for Single Molecule Electronic SNP Assay"*.
 36. United States Patent 10,648,028 (2020) J. Ju, Z. Li, J.R. Edwards, Y. Itagaki. *"Massive Parallel Method for Decoding DNA and RNA"*.
 37. United States Patent 10,648,026 (2020) J. Ju, S. Kumar, M. Palla, J.J. Russo. *"Raman Cluster Tagged Molecules for Biological Imaging"*.
 38. United States Patent 10,633,700 (2020) J. Ju, Z. Li, J.R. Edwards, Y. Itagaki. *"Massive Parallel Method for Decoding DNA and RNA"*.
 39. United States Patent 10,577,652 (2020) J. Ju, Z. Li, J.R. Edwards, Y. Itagaki. *"Massive Parallel Method for Decoding DNA and RNA"*.
 40. United States Patent 10,570,446 (2020) J. Ju, Z. Li, J.R. Edwards, Y. Itagaki. *"Massive Parallel Method for Decoding DNA and RNA"*.
 41. United States Patent 10,526,647 (2020) S. Kalachikov, J. Ju, I. Morozova, M. Dorwart. *"Nucleic Acid Sequences Using Tags"*.
 42. United States Patent 10,457,984 (2019) J. Ju, Z. Li, J.R. Edwards, Y. Itagaki. *"Massive Parallel Method for Decoding DNA and RNA"*.
 43. United States Patent 10,443,096 (2019) J. Ju, S. Kumar, Z. Li, C. Tao, M. Chien, J.J. Russo, S. Kalachikov, K. Shepard, J.K. Rosenstein. *"DNA Sequencing by Synthesis Using Modified Nucleotides and Nanopore Detection"*.
 44. United States Patent 10,435,742 (2019) J. Ju, Z. Li, J.R. Edwards, Y. Itagaki. *"Massive Parallel Method for Decoding DNA and RNA"*.
 45. United States Patent 10,428,380 (2019) J. Ju, Z. Li, J.R. Edwards, Y. Itagaki. *"Massive Parallel Method for Decoding DNA and RNA"*.
 46. United States Patent 10,407,459 (2019) J. Ju, Z. Li, J.R. Edwards, Y. Itagaki. *"Massive Parallel Method for Decoding DNA and RNA"*.
 47. United States Patent 10,407,458 (2019) J. Ju, Z. Li, J.R. Edwards, Y. Itagaki. *"Massive Parallel Method for Decoding DNA and RNA"*.
 48. United States Patent 10,337,049 (2019) T.H. Bestor, J. Ju, X. Li, J.J. Russo. *"Universal Methylation Profiling Methods"*.
 49. United States Patent 10,260,094 (2019) J. Ju, D.H. Kim, J. Guo, Q. Meng, Z. Li, H. Cao. *"DNA Sequencing with Non-fluorescent Nucleotide Reversible Terminators and Cleavable Label Modified Nucleotide Terminators"*.
 50. United States Patent 10,246,479 (2019) J. Ju, S. Kumar, C. Tao, M. Chien, J.J. Russo, J.J. Kasianowicz, J.W.F. Robertson. *"Method of Preparation of Nanopore and Uses Thereof"*.

51. United States Patent 10,240,195 (2019) C. Fuller, S. Kumar, J. Ju, R. Davis, R. Chen “*Chemical Methods for Producing Tagged Nucleotides*”.
52. United States Patent 10,144,961 (2018) J. Ju, H. Cao, Z. Li, Q. Meng, J. Guo, S. Zhang, L. Yu. “*Synthesis of Cleavable Fluorescent Nucleotides as Reversible Terminators for DNA Sequencing by Synthesis*”.
53. United States Patent 10,000,801 (2018) J. Ju, D.H. Kim, L. Bi, Q. Meng, X. Li. “*Four-color DNA Sequencing by Synthesis Using Cleavable Fluorescent Nucleotide Reversible Terminators*”.
54. United States Patent 9,868,985 (2018) J. Ju, Z. Li, J.R. Edwards, Y. Itagaki “*Massive Parallel Method for Decoding DNA and RNA*”.
55. United States Patent 9,909,177 (2018) J. Ju, J. Wu, D.H. Kim “*Pyrosequencing Methods and Related Compositions*”.
56. United States Patent 9,890,426 (2018) J. Ju, Z. Li, S. Kalachikov, C. Fuller “*Pore-Forming Protein Conjugate Compositions and Methods*”.
57. United States Patent 9,738,922 (2017) T.H. Bestor, J.R. Edwards, J. Ju, X. Li “*Universal Methylation Profiling Methods*”.
58. United States Patent 9,725,480 (2017) J. Ju, Z. Li, J.R. Edwards, Y. Itagaki “*Massive Parallel Method for Decoding DNA and RNA*”.
59. United States Patent 9,719,139 (2017) J. Ju, Z. Li, J.R. Edwards, Y. Itagaki “*Massive Parallel Method for Decoding DNA and RNA*”.
60. United States Patent 9,718,852 (2017) J. Ju, Z. Li, J.R. Edwards, Y. Itagaki “*Massive Parallel Method for Decoding DNA and RNA*”.
61. United States Patent 9,708,358 (2017) J. Ju, Z. Li, J.R. Edwards, Y. Itagaki “*Massive Parallel Method for Decoding DNA and RNA*”.
62. United States Patent 9,670,539 (2017) J. Ju, H. Cao, Z. Li, Q. Meng, J. Guo, S. Zhang, L. Yu. “*Synthesis of Cleavable Fluorescent Nucleotides as Reversible Terminators for DNA Sequencing by Synthesis*”.
63. United States Patent 9,624,539 (2017) J. Ju, J. Wu, Z. Li. “*DNA Sequencing by Synthesis Using Raman and Infrared Spectroscopy Detection*”.
64. United States Patent 9,528,151 (2016) J. Ju, D.H. Kim, L. Bi, Q. Meng, X. Li. “*Four-color DNA Sequencing by Synthesis Using Cleavable Fluorescent Nucleotide Reversible Terminators*”.
65. United States Patent 9,297,042 (2016) J. Ju, L. Bi, D.H. Kim, Q. Meng. “*Chemically Cleavable 3'-O-Allyl-dNTP-Allyl-Fluorophore Fluorescent Nucleotide Analogues and Related Methods*”.
66. United States Patent 9,255,292 (2016) J. Ju, Q. Meng, D.H. Kim, L. Bi, X. Bai, N. Turro. “*Synthesis of Four-color 3'-O-allyl Modified Photocleavable Fluorescent Nucleotides and Related Methods*”.
67. United States Patent 9,250,169 (2016) J. Ju, D.W. Landry, Q. Lin, T. Nguyen, R. Pei, C. Oiu, M.N. Stojanovic “*Selective Capture and Release of Analytes*”.
68. United States Patent 9,175,342 (2015) J. Ju, H. Cao, Z. Li, Q. Meng, J. Guo, S. Zhang “*Synthesis of Cleavable Fluorescent Nucleotides as Reversible Terminators for DNA Sequencing by Synthesis*”.
69. United States Patent 9,169,510 (2015) J. Ju, J. Wu, D.H. Kim “*Pyrosequencing Methods and Related Compositions*”.
70. United States Patent 9,133,511 (2015) J. Ju, Z. Li, J.R. Edwards, Y. Itagaki “*Massive Parallel Method for Decoding DNA and RNA*”.
71. United States Patent 9,115,163 (2015) J. Ju, D.H. Kim, J. Guo, Q. Meng, Z. Li, H. Cao “*DNA Sequencing with Non-fluorescent Nucleotide Reversible Terminators and Cleavable Label Modified Nucleotide Terminators*”.
72. United States Patent 8,889,348 (2014) J. Ju “*DNA Sequencing by Nanopore Using Modified Nucleotides*”.
73. United States Patent 8,796,432 (2014) J. Ju, L. Bi, D.H. Kim, Q. Meng “*Chemically Cleavable 3'-O-Allyl-dNTP-Allyl-Fluorophore Fluorescent Nucleotide Analogues and Related Methods*”.
74. United States Patent 8,298,792 (2012) J. Ju, D.H. Kim, L. Bi, Q. Meng, X. Li “*Four-Color DNA Sequencing By Synthesis Using Cleavable Fluorescent Nucleotide Reversible Terminators*”.

75. United States Patent 8,088,575 (2012) J. Ju, Z. Li, J.R. Edwards, Y. Itagaki “*Massive Parallel Method for Decoding DNA and RNA*”.
76. United States Patent 7,982,029 (2011) J. Ju, Q. Meng, D.H. Kim, L. Bi, X. Bai, N.J. Turro “*Synthesis of Four Color 3'O-allyl, Modified Photocleavable Fluorescent Nucleotides and Related Methods*”.
77. United States Patent 7,883,869 (2011) J. Ju, D.H. Kim, L. Bi, Q. Meng, X. Li “*Four-Color DNA Sequencing By Synthesis Using Cleavable Fluorescent Nucleotide Reversible Terminators*”.
78. United States Patent 7,790,869 (2010) J. Ju, Z. Li, J.R. Edwards, Y. Itagaki “*Massive Parallel Method for Decoding DNA and RNA*”.
79. United States Patent 7,713,698 (2010) J. Ju, Z. Li, J.R. Edwards, Y. Itagaki “*Massive Parallel Method for Decoding DNA and RNA*”.
80. United States Patent 7,635,578 (2009) J. Ju, Z. Li, J.R. Edwards, Y. Itagaki “*Massive Parallel Method for Decoding DNA and RNA*”.
81. United States Patent 7,622,279 (2009) J. Ju, “*Photocleavable Fluorescent Nucleotides for DNA Sequencing on Chip Constructed by Site-Specific Coupling Chemistry*”.
82. United States Patent 7,345,159 (2008) J. Ju, Z. Li, J.R. Edwards, Y. Itagaki “*Massive Parallel Method for Decoding DNA and RNA*”.
83. United States Patent 7,074,597 (2006) J. Ju “*Multiplex Genotyping Using Solid Phase Capturable Dideoxynucleotides and Mass Spectrometry*”.
84. United States Patent 7,015,000 (2006) R.A. Mathies, A.N. Glazer, J. Ju “*Probes Labeled with Energy Transfer Coupled Dyes*”.
85. United States Patent 6,664,079 (2003) J. Ju, Z. Li, J.R. Edwards, Y. Itagaki “*Massive Parallel Method for Decoding DNA and RNA*”.
86. United States Patent 6,627,748 (2003) J. Ju, Z. Li, A. Tong, J. Russo “*Combinatorial Fluorescence Energy Transfer Tags and their Applications for Multiplex Genetic Analyses*”.
87. United States Patent 6,544,744 (2003) R.A. Mathies, A.N. Glazer, J. Ju “*Probes Labeled with Energy Transfer Coupled Dyes*”.
88. United States Patent 6,177,247 (2001) R.A. Mathies, A.N. Glazer, J. Ju “*Detection Methods Using Probes Labeled with Energy Transfer Coupled Dyes for DNA Fragment Analysis*”.
89. United States Patent 6,046,005 (2000) J. Ju, K. Konrad. “*Nucleic Acid Sequencing with Solid Phase Capturable Terminators Comprising a Cleavable Linking Group*”.
90. United States Patent 6,150,107 (2000) A.N. Glazer, R.A. Mathies, S-C. Hung, J. Ju “*Methods of Sequencing and Detection Using Energy Transfer Labels with Cyanine Dyes as Donor Chromophores*”.
91. United States Patent 6,028,190 (2000) R.A. Mathies, A.N. Glazer, J. Ju “*Probes Labeled with Energy Transfer Coupled Dyes*”.
92. United States Patent 5,876,936 (1999) J. Ju “*Nucleic Acid Sequencing with Solid Phase Capturable Terminators*”.
93. United States Patent 5,952,180 (1999) J. Ju “*Sets of Energy Transfer Fluorescent Tags and Their Use in Multi-Component Analysis*”.
94. United States Patent 5,869,255 (1999) R.A. Mathies, A.N. Glazer, J. Ju “*Probes Labeled With Energy Transfer Coupled Dyes Exemplified with DNA Fragment Analysis*”.
95. United States Patent 5,804,386 (1998) J. Ju “*Sets of Energy Transfer Fluorescent Tags and Their Use in Multi-Component Analysis*”.
96. United States Patent 5,707,804 (1998) R.A. Mathies, A.N. Glazer, J. Ju “*Primers Labeled with Energy Transfer Coupled Dyes for DNA Sequencing*”.
97. United States Patent 5,728,528 (1998) R.A. Mathies, A.N. Glazer, J. Ju “*Universal Spacer/Energy Transfer Dyes*”.
98. United States Patent 5,853,992 (1998) A.N. Glazer, S-C. Hung, R.A. Mathies, J. Ju “*Cyanine Dyes with High-Absorbance Cross Section as Donor Chromophores in Energy Transfer Labels*”.
99. United States Patent 5,814,454 (1998) J. Ju “*Sets of Energy Transfer Fluorescent Tags and Their Use in Multi-Component Analysis*”.
100. United States Patent 5,654,419 (1997) R.A. Mathies, A.N. Glazer, J. Ju “*Fluorescent Labels and Their Use in Separations*”.

101. United States Patent 5,688,648 (1997) R.A. Mathies, A.N. Glazer, J. Ju “*Probes Labeled with Energy Transfer Coupled Dyes*”.

SELECTED PUBLICATIONS

1. “*Identifying Structural Features of Nucleotide Analogues to Overcome SARS-CoV-2 Exonuclease Activity*”. X. Wang, C. Tao, I. Morozova, S. Kalachikov, X. Li, S. Kumar, J. J. Russo, J. Ju. *Viruses*. 2022, **14**, 1413.
2. “*Discovery of SARS-CoV-2 Antiviral Synergy between Remdesivir and Approved Drugs in Human Lung Cells*”. X. Nguyenla, E. Wehri, E. V. Dis, S. B. Biering, L. H. Yamashiro, C. Zhu, J. Stroumza, C. Dugast-Darzacq, T. Graham, X. Wang, S. Jockusch, C. Tao, M. Chien, W. Xie, D. J. Patel, C. Meyer, A. Garzia, T. Tuschl, J. J. Russo, J. Ju, A. M. Näär, S. Stanley, J. Schaletzky. *Scientific Reports*. 2022, **12**, 18506.
3. “*Commercially Available Flavonols Are Better SARS-CoV-2 Inhibitors than Isoflavone and Flavones*”. O. A. Chaves, N. Fintelman-Rodrigues, X. Wang, C. Q. Sacramento, J. R. Temerozo, A. C. Ferreira, M. Mattos, F. Pereira-Dutra, P. T. Bozza, H. C. Castro-Faria-Neto, J. J. Russo, J. Ju, T. M. L. Souza. *Viruses*. 2022, **14**, 1458.
4. “*Combination of Antiviral Drugs Inhibits SARS-CoV-2 Polymerase and Exonuclease and Demonstrates COVID-19 Therapeutic Potential in Viral Cell Culture*”. X. Wang, C.Q. Sacramento, S. Jockusch, O.A. Chaves, C. Tao, N. Fintelman-Rodrigues, M. Chien, J. R. Temerozo, X. Li, S. Kumar, W. Xie, D.J. Patel, C. Meyer, A. Garzia, T.Tuschl, P.T. Bozza, J. J. Russo, T.M.L. Souza, J. Ju. *Communications Biology*. 2022, **5**, 154.
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