Stanford



Eric Kool

George A. and Hilda M. Daubert Professor of Chemistry

CONTACT INFORMATION

- **Administrative Contact**

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Bio

BIO

Eric Kool received his Ph.D. in Chemistry from Columbia University and did postdoctoral work in nucleic acids chemistry at Caltech. He started his career at the University of Rochester before moving to Stanford in 1999, where he is the George and Hilda Daubert Professor of Chemistry. He teaches Organic Chemistry and Chemical Biology to undergraduate and graduate students.

The Kool lab uses the tools of chemistry to study the structures, interactions and biological activities of nucleic acids and the enzymes that process them. Molecular design and synthesis play a major role in this work, followed by analysis of structure and function, both in test tubes and in living systems. These studies are aimed at gaining a better basic understanding of biology, and applying this knowledge to practical applications in biomedicine.

Recent research interests include the development of chemical tools for mapping RNA structure and interactions in cells, methods for stabilization and conjugation of RNAs, and the development of probes of DNA repair pathways and their connections to cancer.

ACADEMIC APPOINTMENTS

- Professor, Chemistry
- Member, Bio-X
- Member, Maternal & Child Health Research Institute (MCHRI)
- Member, Stanford Cancer Institute
- Member, Wu Tsai Neurosciences Institute

HONORS AND AWARDS

- Murray Goodman Memorial Prize in Biopolymer Research, American Chemical Society (2021)
- Breslow Award for Achievement in Biomimetic Chemistry, American Chemical Society (2015)
- O. K. Rice Lectureship, University of North Carolina (2015)
- Dean’s Award for Distinguished Teaching, Stanford University (2014)

- Frontiers in Chemistry Distinguished Lecturer, Case Western Reserve University (2014)
- Tarrant Distinguished Lectureship, University of Florida (2014)
- O'Malley Lectureship, Boston College (2012)
- Tortellotte Lectureship, Kalamazoo College (2010)
- Hirschmann Lectureship, Oberlin College (2003)
- Novartis Lecturer, Massachusetts Institute of Technology (2003)
- Fellow of the AAAS, American Association for the Advancement of Science (2002)
- Bernard Belleau Memorial Lecturer, McGill University (2001)
- Dean's Award for Distinguished Teaching, Stanford University (2001)
- Arthur C. Cope Scholar Award, American Chemical Society (2000)
- Pfizer Award, American Chemical Society (2000)
- Alfred P. Sloan Foundation Fellow, Alfred P. Sloan Foundation (1994)
- American Cyanamid Faculty Award, American Cyanamid (1994)
- Army Young Investigator Award, Army Research Office (1993)
- Camille and Henry Dreyfus Teacher - Scholar Award, Camille and Henry Dreyfus Foundation (1993)
- Arnold & Mabel Beckman Foundation Young Investigator, Arnold & Mabel Beckman Foundation (1992)
- Office of Naval Research Young Investigator Award, Office of Naval Research (1992)

PROFESSIONAL EDUCATION

- PhD, Columbia University , Organic Chemistry, Biochemistry (1988)

LINKS

- My Lab Site: https://web.stanford.edu/group/kool/

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Our lab uses the tools of molecular design and chemical synthesis, combined with modern molecular biology and genomics techniques, to study the biology of nucleic acids. We have a general interest in the design of small-molecule probes and reagents for the study of RNA and DNA in the cell, and of enzymes that modify them. For example, we are designing cell-permeable reagents that can be used to map structure and contacts of RNAs in living systems. We are also developing novel tools for labeling and caging RNAs, and methods for profiling transcriptome interactions. We are using these tools to uncover new knowledge about the functions of noncoding RNAs in the cell, and to study the potential of new anticancer targets in the transcriptome.

Our lab is also studying DNA repair enzymes, with a focus on development of tools that will help us measure, and potentially treat, cancer and inflammation. We design enzyme mechanism-specific fluorescent probes of DNA base excision repair, and employ them in cellular and animal models of disease. We also use these probes to discover and develop small molecule inhibitors of these enzymes, to be used in translational models of disease. We collaborate with biomedical research groups in translational studies to test our hypotheses regarding the connections of DNA repair to disease.

Teaching

COURSES

2026-27

- Department Colloquium: CHEM 300 (Aut, Spr)
- Inorganic Chemistry Seminar: CHEM 359 (Aut, Spr)
- Organic Chemistry Seminar: CHEM 329 (Aut, Spr)
- Physical Chemistry Seminar: CHEM 379 (Aut, Spr)
- Structure and Reactivity of Carbon-Based Molecules: CHEM 33 (Spr)
- Understanding the Natural and Unnatural World through Chemistry: CHEM 121 (Aut)

2025-26

- Department Colloquium: CHEM 300 (Aut, Spr)
- Inorganic Chemistry Seminar: CHEM 359 (Aut, Spr)
- Organic Chemistry Seminar: CHEM 329 (Aut, Spr)
- Physical Chemistry Seminar: CHEM 379 (Aut, Spr)
- Structure and Reactivity of Carbon-Based Molecules: CHEM 33 (Spr)

2024-25

- Structure and Reactivity of Carbon-Based Molecules: CHEM 33 (Spr)
- Synthesis and Analysis at the Chemistry-Biology Interface: CHEM 281 (Win)

2023-24

- Structure and Reactivity of Organic Molecules: CHEM 33 (Spr)
- Synthesis and Analysis at the Chemistry-Biology Interface: CHEM 281 (Win)

STANFORD ADVISEES

Charlotte Bravo

Doctoral Dissertation Reader (AC)

Krystal Brodsky, Matthew Gill, Pradnya Narkhede, Luis Valencia, Steven Yee

Postdoctoral Faculty Sponsor

Luna Kim, Weifeng Lin, Sumon Pratihar, Jinwoo Shin, Zhenxiang Zhao

Doctoral Dissertation Advisor (AC)

Allan Lee

Doctoral Dissertation Co-Advisor (AC)

Hajime Fujita

GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Biophysics (PhD Program)

Publications

PUBLICATIONS

- **A SMUG1 Inhibitor Modulates the Excision of Pyrimidine DNA Damage.** *ACS medicinal chemistry letters*
  Thacker, P. S., Gao, Y., McPherson, L., Lee, A., Averill, A. M., Pratihar, S., Doublié, S., Ford, J. M., Kool, E. T.
  2026; 17 (6): 1285-1293
- **DNA Content and DNA Damage in Raw and Heat-Processed Foods (vol 73, pg 29069, 2025)** *JOURNAL OF AGRICULTURAL AND FOOD CHEMISTRY*

Shin, J., Jaruga, P., Dizdaroglu, M., Kool, E. T.
2026

- **A SMUG1 Inhibitor Modulates the Excision of Pyrimidine DNA Damage** *ACS MEDICINAL CHEMISTRY LETTERS*
  Thacker, P. S., Gao, Y., McPherson, L., Lee, A., Averill, A. M., Pratihar, S., Doublie, S., Ford, J. M., Kool, E. T.
  2026
- **Protocol for covalent RNA labeling by RiboLight dyes for detection by in-gel fluorescence and fluorescence microscopy.** *STAR protocols*
  Kim, M. J., Shin, J., Kool, E. T.
  2026; 7 (2): 104579
- **C#Nucleosides Stabilize RNA by Reducing Nucleophilicity at 2'-OH.** *ACS central science*
  Banerjee, D., Xiao, L., Thacker, P. S., Kundu, J., Manoharan, M., Kool, E. T.
  2025; 11 (12): 2400-2409
- **Fluorogenic Covalent Probes for RNA.** *Journal of the American Chemical Society*
  Shin, J., Kim, M. J., Kool, E. T.
  2025
- **DNA Content and DNA Damage in Raw and Heat-Processed Foods.** *Journal of agricultural and food chemistry*
  Shin, J., Jaruga, P., Dizdaroglu, M., Kool, E. T.
  2025
- **Redox maintenance of the nucleotide pool as a key oncogenic dependency in KRAS-driven cancer and its tumor microenvironment**
  Mateo-Victoriano, B., Pokharel, S., challu, B., Samaranayake, G., Mohsen, M. G., nagathihalli, N., Kool, E. T., Mcdonald, O. G., Rai, P.
  ELSEVIER SCIENCE INC.2025
- **C-Nucleosides Stabilize RNA by Reducing Nucleophilicity at 2′-OH** *ACS CENTRAL SCIENCE*
  Banerjee, D., Xiao, L., Thacker, P. S., Kundu, J., Manoharan, M., Kool, E. T.
  2025
- **RNA 2'-OH modification with stable reagents enabled by nucleophilic catalysis.** *RSC advances*
  Kool, E. T., Pratihar, S., Thacker, P. S., Banerjee, D., Kim, M. J., Shioi, R.
  2025; 15 (43): 35749-35755
- **Sequence-Specific Installation of Aryl Groups in RNA via DNA-Catalyst Conjugates.** *Angewandte Chemie (International ed. in English)*
  Pratihar, S., Zhong, W., Feng, S., Chatterjee, S., Kool, E. T.
  2025: e202515681
- **Localized 2'-OH Acylation at Poly(A) Extends RNA Translation.** *Journal of the American Chemical Society*
  Fang, L., Zhong, W., Xiao, L., Shioi, R., Lee, A., Bravo, C. H., Kool, E. T.
  2025
- **Oncogenic KRAS addiction states differentially influence MTH1 expression and 8-oxodGTPase activity in lung adenocarcinoma.** *Redox biology*
  Mateo-Victoriano, B., Samaranayake, G. J., Pokharel, S., Sahayanathan, G. J., Jayaraj, C., Troccoli, C. I., Watson, D. C., Mohsen, M. G., Guo, Y., Kool, E. T., Rai, P.
  2025; 82: 103610
- **Nitric oxide inhibits ten-eleven translocation DNA demethylases to regulate 5mC and 5hmC across the genome.** *Nature communications*
  Palczewski, M. B., Kuschman, H. P., Hoffman, B. M., Kathiresan, V., Yang, H., Glynn, S. A., Wilson, D. L., Kool, E. T., Montfort, W. R., Chang, J., Petenkaya, A., Chronis, C., Cundari, et al
  2025; 16 (1): 1732
- **Small-molecule activator of SMUG1 enhances repair of pyrimidine lesions in DNA.** *DNA repair*
  Gao, Y., McPherson, L., Adimoolam, S., Suresh, S., Wilson, D. L., Das, I., Park, E. R., Ng, C. S., Jun, Y. W., Ford, J. M., Kool, E. T.
  2025; 146: 103809
- **P2 Receptor Antagonists Rescue Defective Heme Content in an In Vitro SLC25A38-Associated Congenital Sideroblastic Anemia Cell Model.** *International journal of molecular sciences*

Santoro, A., De Santis, S., Palmieri, F., Vozza, A., Agrimi, G., Andolfo, I., Russo, R., Palazzo, A., Storlazzi, C. T., Ferrucci, A., Jun, Y. W., Kool, E. T., Fiermonte, et al
2024; 25 (24)

- **Convenient syntheses of isotopically labeled pyrimidine 2'-deoxynucleosides and their 5-hydroxy oxidation products.** *Nucleosides, nucleotides & nucleic acids*
  Gao, Y., Kool, E. T.
  2024: 1-23

- **P2 Receptor Antagonists Rescue Defective Heme Content in an In Vitro SLC25A38-Associated Congenital Sideroblastic Anemia Cell Model** *INTERNATIONAL JOURNAL OF MOLECULAR SCIENCES*
  Santoro, A., De Santis, S., Palmieri, F., Vozza, A., Agrimi, G., Andolfo, I., Russo, R., Palazzo, A., Storlazzi, C., Ferrucci, A., Jun, Y., Kool, E. T., Fiermonte, et al
  2024; 25 (24)

- **8-Oxoguanine DNA Glycosylase 1 Recruits Transcription Factor STAT1 to Promote the Inflammatory Responses in Sickle Cell Disease**
  Le, K., Quezado, Z., Li, H., Kamimura, S., Smith, M. L., Tahara, Y., Lee, Y., Conrey, A., Schultz, J., Andresson, T., Kool, E., Thein, S.
  ELSEVIER.2024: 2490-2491

- **RNA infrastructure profiling illuminates transcriptome structure in crowded spaces.** *Cell chemical biology*
  Xiao, L., Fang, L., Zhong, W., Kool, E. T.
  2024

- **Chemical diversity of reagents that modify RNA 2′-OH in water: a review** *CHEMICAL SCIENCE*
  Shioi, R., Kool, E. T.
  2024

- **Chemical diversity of reagents that modify RNA 2'-OH in water: a review.** *Chemical science*
  Shioi, R., Kool, E. T.
  2024

- **Reversible RNA Acylation Using Bio-Orthogonal Chemistry Enables Temporal Control of CRISPR-Cas9 Nuclease Activity.** *ACS chemical biology*
  Pandit, B., Fang, L., Kool, E. T., Royzen, M.
  2024

- **Promoter dependent RNA polymerase II bypass of the epimerizable DNA lesion, Fapy•dG and 8-Oxo-2'-deoxyguanosine.** *Nucleic acids research*
  Gao, S., Tahara, Y., Kool, E. T., Greenberg, M. M.
  2024

- **Second-Generation Chiral Amino Acid Derivatives Afford High Stereoselectivity and Stability in Aqueous RNA Acylation.** *The Journal of organic chemistry*
  Shioi, R., Chatterjee, S., Xiao, L., Zhong, W., Kool, E. T.
  2024

- **Selective Arylation of RNA 2'-OH Groups via SNAr Reaction with Trialkylammonium Heterocycles.** *Angewandte Chemie (International ed. in English)*
  Chatterjee, S., Xiao, L., Zhong, W., Feng, S., Kool, E. T.
  2024: e202403496

- **Nitric oxide inhibits ten-eleven translocation DNA demethylases to regulate 5mC and 5hmC across the genome.** *Research square*
  Thomas, D., Palczewski, M., Kuschman, H., Hoffman, B., Yang, H., Glynn, S., Wilson, D., Kool, E., Montfort, W., Chang, J., Petenkaya, A., Chronis, C., Cundari, et al
  2024

- **RNA Control via Redox-Responsive Acylation.** *Angewandte Chemie (International ed. in English)*
  Guo, J., Chen, S., Onishi, Y., Shi, Q., Song, Y., Mei, H., Chen, L., Kool, E. T., Zhu, R.
  2024: e202402178

- **Aqueous Activation of RNA 2'-OH for Conjugation with Amines and Thiols.** *Bioconjugate chemistry*

Shioi, R., Xiao, L., Kool, E. T.
2023

- **Efficient post-synthesis incorporation and conjugation of reactive ketones in RNAvia2'-acylation.** *Chemical communications (Cambridge, England)*
Shioi, R., Xiao, L., Fang, L., Kool, E. T.
2023

- **Stereoselective RNA reaction with chiral 2'-OH acylating agents.** *Chemical science*
Shioi, R., Xiao, L., Chatterjee, S., Kool, E. T.
2023; 14 (45): 13235-13243

- **2'-OH as a universal handle for studying intracellular RNAs.** *Cell chemical biology*
Xiao, L., Fang, L., Kool, E. T.
2023

- **Stereoselective RNA reaction with chiral 2′-OH acylating agents** *CHEMICAL SCIENCE*
Shioi, R., Xiao, L., Chatterjee, S., Kool, E. T.
2023

- **8-Oxoguanine DNA Glycosylase 1 Inhibition Suppresses Inflammatory Responses in Sickle Cell Disease**
Le, K., Quezado, Z., Kamimura, S., Smith, M. L., Tahara, Y., Lee, Y., Tumburu, L., Conrey, A., Kool, E. T., Thein, S.
AMER SOC HEMATOLOGY.2023

- **Reactivity-based RNA profiling for analyzing transcriptome interactions of small molecules in human cells.** *STAR protocols*
Fang, L., Kool, E. T.
2023; 4 (4): 102670

- **RNA Infrastructure Profiling Illuminates Transcriptome Structure in Crowded Spaces.** *bioRxiv : the preprint server for biology*
Xiao, L., Fang, L., Kool, E. T.
2023

- **Pervasive transcriptome interactions of protein-targeted drugs.** *Nature chemistry*
Fang, L., Velema, W. A., Lee, Y., Xiao, L., Mohsen, M. G., Kietrys, A. M., Kool, E. T.
2023

- **Reversible 2'-OH acylation enhances RNA stability.** *Nature chemistry*
Fang, L., Xiao, L., Jun, Y. W., Onishi, Y., Kool, E. T.
2023

- **Possible Genetic Risks from Heat-Damaged DNA in Food** *ACS CENTRAL SCIENCE*
Jun, Y., Kant, M., Coskun, E., Kato, T. A. A., Jaruga, P., Palafox, E., Dizdaroglu, M., Kool, E. T. T.
2023

- **Sulfonylation of RNA 2'-OH groups.** *ACS central science*
Chatterjee, S., Shioi, R., Kool, E. T.
2023; 9 (3): 531-539

- **Diverse Reagent Scaffolds Provide Differential Selectivity of 2'-OH Acylation in RNA.** *Journal of the American Chemical Society*
Xiao, L., Fang, L., Chatterjee, S., Kool, E. T.
2022

- **Chemical Tools for the Study of DNA Repair.** *Accounts of chemical research*
Jun, Y. W., Kool, E. T.
2022

- **Cellular 8-oxodGTPase activity as a novel target in KRAS-driven pancreatic cancer**
Mateo-Victoriano, B., Zhang, L., Samaranayake, G., Due, C., Troccoli, C., Zaias, J., Nagathihalli, N., Mohsen, M., Kool, E., Rai, P.
ELSEVIER SCIENCE INC.2022

- **Efficient DNA fluorescence labeling via base excision trapping.** *Nature communications*
  Jun, Y. W., Harcourt, E. M., Xiao, L., Wilson, D. L., Kool, E. T.
  2022; 13 (1): 5043
- **Enhancing Repair of Oxidative DNA Damage with Small-Molecule Activators of MTH1.** *ACS chemical biology*
  Lee, Y., Onishi, Y., McPherson, L., Kietrys, A. M., Hebenbrock, M., Jun, Y. W., Das, I., Adimoolam, S., Ji, D., Mohsen, M. G., Ford, J. M., Kool, E. T.
  2022
- **Acylation probing of "generic" RNA libraries reveals critical influence of loop constraints on reactivity.** *Cell chemical biology*
  Xiao, L., Fang, L., Kool, E. T.
  2022
- **Mechanism-Based Strategy for Optimizing HaloTag Protein Labeling** *JACS AU*
  Marques, S. M., Slanska, M., Chmelova, K., Chaloupkova, R., Marek, M., Clark, S., Damborsky, J., Kool, E. T., Bodnar, D., Prokop, Z.
  2022; 2 (6): 1324-1337
- **Fluorescent detection of RNA using a base excision reporter.** *FASEB journal : official publication of the Federation of American Societies for Experimental Biology*
  Harcourt, E. M., Jun, Y. W., Wilson, D. L., Ledgerwood, E. D., Kool, E. T.
  2022; 36 Suppl 1
- **Microbial byproducts determine reproductive fitness of free-living and parasitic nematodes.** *Cell host & microbe*
  Venzon, M., Das, R., Luciano, D. J., Burnett, J., Park, H. S., Devlin, J. C., Kool, E. T., Belasco, J. G., Hubbard, E. J., Cadwell, K.
  2022
- **Integrating transcription-factor abundance with chromatin accessibility in human erythroid lineage commitment.** *Cell reports methods*
  Baskar, R., Chen, A. F., Favaro, P., Reynolds, W., Mueller, F., Borges, L., Jiang, S., Park, H. S., Kool, E. T., Greenleaf, W. J., Bendall, S. C.
  2022; 2 (3)
- **Conjugation of RNA via 2'-OH acylation: Mechanisms determining nucleotide reactivity.** *Chemical communications (Cambridge, England)*
  Jash, B., Kool, E. T.
  2022
- **Fluorescence Imaging of Mitochondrial DNA Base Excision Repair Reveals Dynamics of Oxidative Stress Responses.** *Angewandte Chemie (International ed. in English)*
  Jun, Y. W., Albarran, E., Wilson, D. L., Ding, J., Kool, E. T.
  2021
- **Control of RNA with quinone methide reversible acylating reagents.** *Organic & biomolecular chemistry*
  Park, H. S., Jash, B., Xiao, L., Jun, Y. W., Kool, E. T.
  2021
- **Low OGG1 protects against the DNA damage induced by MTH1 inhibition.**
  Lincheta, L., Zhang, L., Samaranayake, G., Sharma, N., Nguyen, D., Tahara, Y., Kool, E., Rai, P.
  AMER ASSOC CANCER RESEARCH.2021
- **Reimagining high-throughput profiling of reactive cysteines for cell-based screening of large electrophile libraries.** *Nature biotechnology*
  Kuljanin, M., Mitchell, D. C., Schweppe, D. K., Gikandi, A. S., Nusinow, D. P., Bulloch, N. J., Vinogradova, E. V., Wilson, D. L., Kool, E. T., Mancias, J. D., Cravatt, B. F., Gygi, S. P.
  2021
- **OGG1 co-inhibition antagonizes the tumor-inhibitory effects of targeting MTH1.** *Redox biology*
  Zhang, L. n., Misiara, L. n., Samaranayake, G. J., Sharma, N. n., Nguyen, D. M., Tahara, Y. K., Kool, E. T., Rai, P. n.
  2021; 40: 101848
- **DNA tiling enables precise acylation-based labeling and control of mRNA.** *Angewandte Chemie (International ed. in English)*
  Xiao, L., Jun, Y. W., Kool, E. T.
  2021
- **Inhibition by Tetrahydroquinoline Sulfonamide Derivatives of the Activity of Human 8-Oxoguanine DNA Glycosylase (OGG1) for Several Products of Oxidatively induced DNA Base Lesions.** *ACS chemical biology*

Kant, M., Tahara, Y., Jaruga, P., Coskun, E., Lloyd, R. S., Kool, E. T., Dizdaroglu, M.
2020

- **Small-Molecule Inhibitor of 8-Oxoguanine DNA Glycosylase 1 Regulates Inflammatory Responses during Pseudomonas aeruginosa Infection.** *Journal of immunology (Baltimore, Md. : 1950)*
  Qin, S., Lin, P., Wu, Q., Pu, Q., Zhou, C., Wang, B., Gao, P., Wang, Z., Gao, A., Overby, M., Yang, J., Jiang, J., Wilson, et al
  2020
- **Trapping Transient RNA Complexes by Chemically Reversible Acylation.** *Angewandte Chemie (International ed. in English)*
  Velema, W. A., Park, H. S., Kadina, A., Orbai, L., Kool, E. T.
  2020
- **Small Substrate or Large? Debate Over the Mechanism of Glycation Adduct Repair by DJ-1.** *Cell chemical biology*
  Jun, Y. W., Kool, E. T.
  2020
- **Reversible RNA acylation for control of CRISPR-Cas9 gene editing** *CHEMICAL SCIENCE*
  Habibian, M., McKinlay, C., Blake, T. R., Kietrys, A. M., Waymouth, R. M., Wender, P. A., Kool, E. T.
  2020; 11 (4): 1011–16
- **An Excimer Clamp for Measuring Damaged Base Excision by the DNA Repair Enzyme NTH1.** *Angewandte Chemie (International ed. in English)*
  Jun, Y. W., Wilson, D. L., Kietrys, A. M., Lotsof, E. R., Conlon, S. G., David, S. S., Kool, E. T.
  2020
- **Designer Fluorescent Adenines Enable Real-Time Monitoring of MUTYH Activity.** *ACS central science*
  Zhu, R. Y., Majumdar, C. n., Khuu, C. n., De Rosa, M. n., Opresko, P. L., David, S. S., Kool, E. T.
  2020; 6 (10): 1735–42
- **The chemistry and applications of RNA 2 '-OH acylation** *NATURE REVIEWS CHEMISTRY*
  Velema, W. A., Kool, E. T.
  2020; 4 (1): 22–37
- **Site-Selective RNA Functionalization via DNA-Induced Structure.** *Journal of the American Chemical Society*
  Xiao, L. n., Habibian, M. n., Kool, E. T.
  2020; 142 (38): 16357–63
- **Reversible RNA acylation for control of CRISPR-Cas9 gene editing.** *Chemical science*
  Habibian, M., McKinlay, C., Blake, T. R., Kietrys, A. M., Waymouth, R. M., Wender, P. A., Kool, E. T.
  2019; 11 (4): 1011-1016
- **Dual Inhibitors of 8-Oxoguanine Surveillance by OGG1 and NUDT1.** *ACS chemical biology*
  Tahara, Y., Kietrys, A. M., Hebenbrock, M., Lee, Y., Wilson, D. L., Kool, E. T.
  2019
- **Polymerase synthesis of four-base DNA from two stable dimeric nucleotides.** *Nucleic acids research*
  Mohsen, M. G., Ji, D., Kool, E. T.
  2019
- **Polyacetate and Polycarbonate RNA: Acylating Reagents and Properties.** *Organic letters*
  Habibian, M., Velema, W. A., Kietrys, A. M., Onishi, Y., Kool, E. T.
  2019
- **Simple alkanoyl acylating agents for reversible RNA functionalization and control** *CHEMICAL COMMUNICATIONS*
  Park, H., Kietrys, A. M., Kool, E. T.
  2019; 55 (35): 5135–38
- **Simple alkanoyl acylating agents for reversible RNA functionalization and control.** *Chemical communications (Cambridge, England)*
  Park, H. S., Kietrys, A. M., Kool, E. T.
  2019

- **RNA structure maps across mammalian cellular compartments** *NATURE STRUCTURAL & MOLECULAR BIOLOGY*
  Sun, L., Fazal, F. M., Li, P., Broughton, J. P., Lee, B., Tang, L., Huang, W., Kool, E. T., Chang, H. Y., Zhang, Q.
  2019; 26 (4): 322-+
- **Polymerase-amplified release of ATP (POLARA) for detecting single nucleotide variants in RNA and DNA.** *Chemical science*
  Mohsen, M. G., Ji, D., Kool, E. T.
  2019; 10 (11): 3264-3270
- **Polymerase-amplified release of ATP (POLARA) for detecting single nucleotide variants in RNA and DNA** *CHEMICAL SCIENCE*
  Mohsen, M. G., Ji, D., Kool, E. T.
  2019; 10 (11): 3264–70
- **RNA structure maps across mammalian cellular compartments.** *Nature structural & molecular biology*
  Sun, L., Fazal, F. M., Li, P., Broughton, J. P., Lee, B., Tang, L., Huang, W., Kool, E. T., Chang, H. Y., Zhang, Q. C.
  2019
- **Fluorescent reporter assays provide direct, accurate, quantitative measurements of MGMT status in human cells** *PLOS ONE*
  Nagel, Z. D., Beharry, A. A., Mazzucato, P., Kitange, G. J., Sarkaria, J. N., Kool, E. T., Samson, L. D.
  2019; 14 (2)
- **Increased MTH1-specific 8-oxodGTPase activity is a hallmark of cancer in colon, lung and pancreatic tissue.** *DNA repair*
  McPherson, L. A., Troccoli, C. I., Ji, D. n., Bowles, A. E., Gardiner, M. L., Mohsen, M. G., Nagathihalli, N. S., Nguyen, D. M., Robbins, D. J., Merchant, N. B., Kool, E. T., Rai, P. n., Ford, et al
  2019: 102644
- **A fluorescent hydrazone exchange probe of pyridoxal phosphate for the assessment of vitamin B6 status.** *Chemical communications (Cambridge, England)*
  Jun, Y. W., Hebenbrock, M. n., Kool, E. T.
  2019
- **The existence of MTH1-independent 8-oxodGTPase activity in cancer cells as a compensatory mechanism against on-target effects of MTH1 inhibitors.** *Molecular cancer therapeutics*
  Samaranayake, G. J., Troccoli, C. I., Zhang, L. n., Huynh, M. n., Jayaraj, C. J., Ji, D. n., McPherson, L. n., Onishi, Y. n., Nguyen, D. M., Robbins, D. J., Karbaschi, M. n., Cooke, M. S., Barrientos, et al
  2019
- **Fluorescent reporter assays provide direct, accurate, quantitative measurements of MGMT status in human cells.** *PloS one*
  Nagel, Z. D., Beharry, A. A., Mazzucato, P., Kitange, G. J., Sarkaria, J. N., Kool, E. T., Samson, L. D.
  2019; 14 (2): e0208341
- **Ultrafast Oxime Formation Enables Efficient Fluorescence Light-up Measurement of DNA Base Excision.** *Journal of the American Chemical Society*
  Wilson, D. L., Kool, E. T.
  2019
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