

**CURRICULUM VITAE**  
**YUK-CHING TSE-DINH**

Biomolecular Sciences Institute, Department of Chemistry & Biochemistry  
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**Education:**

Hollins University, Virginia	B.A.	1977	Chemistry
Harvard University, Massachusetts	Ph.D.	1982	Biological Chemistry

Mentor: Professor James C. Wang

**Positions and Employment:**

Sep 2018- Distinguished University Professor, Department of Chemistry and Biochemistry, Florida International University  
2012-Sep 2018 Professor, Department of Chemistry and Biochemistry, Florida International University  
Aug 2018 Founding Director, Translational Molecular Discoveries, Florida International University  
Aug 2012 Founding Director, Biomolecular Sciences Institute, Florida International University  
1994-Aug 2012 Professor, Department of Biochemistry & Molecular Biology, New York Medical College.  
2006-Aug 2012 Ph.D. Graduate Program Director, Department of Biochemistry & Molecular Biology, New York Medical College  
1990-1994 Associate Professor, Department of Biochemistry & Molecular Biology, New York Medical College  
1988-1990 Assistant Professor, Department of Biochemistry & Molecular Biology, New York Medical College  
1982-1988 Principal Investigator, Molecular Biology, Central Research & Development, E.I. DuPont  
1978-1982 Graduate Research Assistant, Department of Biochemistry & Molecular Biology, Harvard University,  
1977 Research Assistant, Department of Chemistry, Cornell University  
1976 Research Assistant, Department of Chemistry, Brookhaven National Laboratory

**Honors and Professional Activities:**

2025 Keynote Speaker, EMBO Workshop on "DNA topology and topoisomerases in genome dynamics"  
2025 Review for JGW Patterson Foundation Research Grant (UK) and the European Science Foundation Vienna BioCenter Programme (Austria).  
2024 SMS O’Keeffe Lecture speaker, Arizona State University School of Molecular Sciences.  
2023 Faculty Opinions Faculty Member  
2022 Review for Natural Sciences and Engineering Research Council of Canada (NSERC) Discovery Grant  
2021 Induction into Academy of Science, Engineering and Medicine of Florida (ASEMFL)  
2021 NIH Reviewer, Member Conflict: Chemistry and Biological Chemistry (March), SBIR/STTR Drug Discovery and Development (November)  
2021 Review for European Science Foundation (ESF) – Research Foundation Flanders (FWO) Postdoctoral Project  
2020 NIH Reviewer, NIGMS Early Stage Investigators MIRA (March); Enabling Bioanalytical and Imaging Technologies (June)  
2020 Miami-Dade Parks Foundation In the Company of Women Award for Science and Technology  
2019 NIH Reviewer, NIAID non-coding RNA R21 panel (February); SBIR/STTR Drug Discovery and Development (March)  
2018-2020 Grant reviewer for MRC, United Kingdom  
2018 FIU Top Scholar, FIU Faculty Senator Award for Research and Creative Activities  
2018 FIU’s Women Innovators  
2018 NIH reviewer, SBIR/STTR Drug Discovery (March), CSR Anonymous Study (June), NIAID U19 CETR (September, October)  
2017 NIH reviewer, Partnerships for Countermeasures against Select Pathogens (February), Topic in drug discovery and clinical field studies (July)  
2017, 2019 Grant Reviewer for National Science Centre of Poland (NCN)  
2017 FIU College of Arts, Sciences and Education Award for Service  
2016 NIH reviewer, Novel Therapeutics for Eukaryotic Pathogens Panel (May) SBIR/STTR BCMB-10

(March, Nov)

2015 NIH reviewer, Special Emphasis ZAI1 LR-M (July), Novel Therapeutics for Select Pathogens (March)

2015 Grant reviewer for Natural Sciences and Engineering Research Council of Canada

2014 NIH reviewer for BST-U(55) HTS panel (October)

2014 Research Program Reviewer for French National Research Agency (ANR)

2013 FIU Top Scholar

2013 NIH reviewer for U19 NIAID Centers of Excellence for Translational Research CETR (August)

2012 NIH reviewer, Panel for HTS (June), Partnerships for Development of Therapeutics and Diagnostics for Biodefense (September)

2011 NIH reviewer, Panel for MLPCN HTS assays (November)

2011 NSF reviewer for MCB (November)

2010 NIH reviewer, Special Emphasis Review Panel, Chair (February)

2009 NIH reviewer, Challenge Grant Review Panel (June), Special Emphasis Review Panel (February)

2008 NIH reviewer, Cooperative Research Partnerships for Biodefense and Emerging Infectious Diseases (September)

2004- 2006 Member of the NIH Prokaryotic Cellular and Molecular Biology Study Section (PCMB)

2004 NIH reviewer, Special Emphasis Review Panel (April), MBC-2 (June)

2003- 2008 Editorial Board, Journal of Biological Chemistry

2002 Temporary reviewer, NIH Microbial Physiology and Genetics-2 Study Section (MBC-2)

2002 Managing Editor, Frontiers in Bioscience

1995-1999 NIH Reviewers Reserve

1991-1995 Member of the NIH Physiological Chemistry Study Section (PC).

1974-1977 International Institute of Education Scholarship for College Study.

1974-1977 First Class Honors, Hollins University.

1977 Hollins University Faculty Gold Medal Award for Academic Excellence. Phi Beta Kappa, Sigma Xi. Lewis Howe Award for Outstanding Senior Majoring in Chemistry, ACS, Blue Ridge Section.

### **Research Funding Support as Principal Investigator**

National Institutes of Health R01 GM042774

“Zinc binding domains in *E. coli* DNA topoisomerase I”

Project period: 4/1/1990 – 3/31/1995 Total award: \$841,482

American Cancer Society “DNA cleavage by vaccinia DNA topoisomerase I”

Project period: 1/1/1990 – 12/31/1993 Total award: \$267,000

Abbott Laboratories

“Expression and purification of topoisomerase I domains for structural determination”

Project period: 1/1/1994 – 12/31/1994 Total award: \$56,875

Small Molecule Therapeutics

“DNA cleavage assays”

Project period: 8/30/1998 – 8/2/1999 Total award: \$20,000

Smithkline Beecham

“Quinolone sensitivities of DNA gyrase and topoisomerase IV”

Project period: 6/27/2000 – 12/31/2000 Total award: \$72,150

National Institutes of Health R03 NS050782 (NIH Roadmap Initiative)

“Development of a HTS system in *E. coli* for topoisomerases”

Project period: 9/1/2004 - 8/31/2005 Total award: \$78,000

New York State Department of Health (administered by Northeast Biodefense Center)

“Development of a high-throughput screening system in *E. coli* for trapping of topoisomerases from pathogenic viruses or bacteria during removal of transcription-driven supercoiling”

Project period: 12/1/2004 – 3/31/2005 Total award: \$112,017

Global Alliance for TB

“Development of HTS assay for small molecules that can trap the DNA cleavage complex formed by *Mycobacterium tuberculosis* topoisomerase I”

Project period: 5/1/09 – 4/30/12 Total award: \$330,000

National Institutes of Health R21 NS067592

“HTS assay development targeting *Yersinia pestis* topoisomerase I”

Project Period: 6/1/10 - 5/31/12 Total award: \$184,000

Tres Cantos Open Lab Foundation Award number: 3208

“Identification of inhibitors of *M. tuberculosis* topoisomerase I for novel anti-TB therapy”

Project Period: 09/01/2013 – 02/28/2014 Total award: \$64,900

Gift of Mr. Alan Potamkin and Dr. Brigitt Rok-Potamkin

“Predictive biomarkers for glioblastoma progression and treatment”

Project Period: 03/01/2015 – 02/28/2016 Total award: \$75,000

National Institutes of Health R01 AI069313

“Bacterial cell killing by topoisomerase I mediated DNA lesion”

Project period: 2/1/2006 – 8/31/2016 Total award: \$3,401,846

Global Alliance for TB

“*Mycobacterium tuberculosis* topoisomerase I: Interaction with DNA and inhibitor”

Project period: 07/01/16 – 08/31/17 Total award: \$55,000

Gift of Mr. Alan Potamkin and Dr. Aizik Wolf

“Predictive biomarkers for glioblastoma progression and treatment”

Project Period: 03/01/2017 – 02/28/2018 Total award: \$80,000

Community Foundation of Broward Award number: 5315

“Investigation of a Novel Treatment for Advanced Prostate Cancer”

Project Period: 01/01/2015 – 6/30/2020 Total award: \$230,000

National Institutes of Health R01 GM054226

“Control of DNA topology”

Project period: 04/01/1996 – 06/30/2024 Total award: \$5,424,135

National Institutes of Health R01GM054226-18S1

“Supplement for undergraduate research participant to promote diversity”

Project period: 07/01/2018 – 06/30/2020 Total award: \$45,016

National Institutes of Health T32GM132054

“Transdisciplinary Training in Biomolecular and Biomedical Sciences”

Project period: 07/01/2019 – 09/30/2024 Total award: \$1,496,250

Global Alliance for TB Drug Development

“Collaboration for screening of *Mycobacterium tuberculosis* topoisomerase I inhibitors”

Project period: 03/01/2020 – 05/30/2021 Total award: \$55,000

Oragenics Inc.

“Collaboration on human topoisomerase IIIB inhibitors”

Project period: 05/05/2022 – 10/31/2023 Total award: \$8,359

National Institutes of Health R35GM139817

“Structure, Mechanism and Interactions of Type IA Topoisomerases”

Project period: 02/01/2021-01/31/2026 Total award: \$1,574,995

National Institutes of Health      3R35GM139817-01S1  
“Supplement for equipment purchase”  
Award date: 07/20/2021      Total award: \$60,275

### US Patents

1. “Bacterial topoisomerase I inhibitors with antibacterial activity”, Tse-Dinh YC, Sun D, US Patent US10266550 (2019); US Patent US10654869 (2020)
2. “Bacterial topoisomerase inhibitors and use thereof”, Tse-Dinh YC, Giulianotti MA, Houghten RA, US Patent US9988341B2 (2018)
3. “Treatments of prostate cancer”, Tse-Dinh YC, Liu Y, Agoulnik, I, US Patent 11304969 (April 2022); US Patent 11478496 (October 2022); US Patent 11,839,621B2 (December 2023)

### International Conference Organizer

2022 Gordon Research Conference on “DNA Topoisomerases in Biology and Medicine”, co-Vice Chair  
2024 Conference on “Topoisomerases in Biology and Medicine”, Organizer

### Publications

#### **Peer-Reviewed Papers (FIU publications starting from #85)**

1. **Tse YC**, Newton MD. Theoretical observations on the structural consequences of cooperativity in H<sup>+</sup>⋯O hydrogen bonding. *J Amer Chem Soc.* 1977 Jan 19; 99(2):611-3.
2. **Tse YC**, Newton MD, Vishveshwara S, Pople JA. Ab initio studies of the relative energetics of glycine and its zwitterion. *J Amer Chem Soc.* 1978 July 5; 100(14):4329-31.
3. Albright TA, Hoffmann R, **Tse YC**, D’Ottavio T., Polyene-ML2 and -ML4 complexes. Conformational preferences and barriers of rotation. *J Amer Chem Soc* 1979 July 4; 101(14):3812-21.
4. **Tse YC**, Newton MD, Allen LC. Theoretical study of the O<sup>+</sup>⋯Methyl substituent effect in OH<sup>+</sup>⋯O hydrogen bonds. *Chem Phys Letters.* 1980 Oct 15; 75(2):350-6.
5. **Tse YC**, Wang JC. E. coli and M. luteus DNA topoisomerase I can catalyze catenation or decatenation of double-stranded DNA rings. *Cell.* 1980 Nov; 22 (1):269-76.
6. **Tse YC**, Kirkegaard K, Wang JC. Covalent bonds between protein and DNA. Formation of phosphotyrosine linkage between certain DNA topoisomerases and DNA. *J Biol Chem.* 1980 Jun 25;255(12):5560-5. **JBC Classic Paper**
7. Javaherian K, **Tse YC**, Vega J. Drosophila topoisomerase I: isolation, purification and characterization. *Nucleic Acids Res.* 1982 Nov 11;10(21):6945-55.
8. Klevan L, **Tse YC**. Chemical modification of essential tyrosine residues in DNA topoisomerases. *Biochim Biophys Acta.* 1983 June 15; 745(2):175-80.
9. **Tse-Dinh YC**, McCarron BG, Arentzen R, Chowdhry V. Mechanistic study of E. coli DNA topoisomerase I: cleavage of oligonucleotides. *Nucleic Acids Res.* 1983 Dec 20;11(24):8691-701.
10. **Tse YC**, Javaherian K, Wang JC., HMG17 protein facilitates the DNA catenation reaction catalyzed by DNA topoisomerases. *Arch Biochem Biophys.* 1984 May 15;231(1):169-74.
11. **Tse-Dinh YC**, Wong TW, Goldberg AR. Virus- and cell-encoded tyrosine protein kinases inactivate DNA topoisomerases in vitro. *Nature.* 1984 Dec 20-1985 Jan 2;312(5996):785-6.
12. **Tse-Dinh YC.**, Regulation of the Escherichia coli DNA topoisomerase I gene by DNA supercoiling. *Nucleic Acids Res.* 1985 Jul 11;13(13):4751-63.
13. **Tse-Dinh YC.** Uncoupling of the DNA breaking and rejoining steps of Escherichia coli type I DNA topoisomerase. Demonstration of an active covalent protein-DNA complex. *J Biol Chem.* 1986 Aug 15;261(23):10931-5.
14. **Tse-Dinh YC**, Wang JC. Complete nucleotide sequence of the topA gene encoding Escherichia coli DNA topoisomerase I. *J Mol Biol.* 1986 Oct 5;191(3):321-31.
15. **Tse-Dinh YC**, McGee LR., Light-induced modifications of DNA by gilvocarcin V and its aglycone. *Biochem Biophys Res Commun.* 1987 Mar 30;143(3):808-12.
16. **Tse-Dinh YC**, Beran RK. Multiple promoters for transcription of the Escherichia coli DNA topoisomerase I gene and their regulation by DNA supercoiling. *J Mol Biol.* 1988 Aug 20;202(4):735-42.
17. Domanico PL, **Tse-Dinh YC**. Cleavage of dT8 and dT8 phosphorothioyl analogues by Escherichia coli DNA topoisomerase I: product and rate analysis. *Biochemistry.* 1988 Aug 23;27(17):6365-71.
18. **Tse-Dinh YC**, Beran-Steed RK. Escherichia coli DNA topoisomerase I is a zinc metalloprotein with three

- repetitive zinc-binding domains. *J Biol Chem*. 1988 Nov 5;263(31):15857-9.
19. Beran-Steed RK, **Tse-Dinh YC**. The carboxyl terminal domain of Escherichia coli DNA topoisomerase I confers higher affinity to DNA. *Proteins*. 1989;6(3):249-58.
  20. Lesley SA, Jovanovich SB, **Tse-Dinh YC**, Burgess RR. Identification of a heat shock promoter in the topA gene of Escherichia coli. *J Bacteriol*. 1990 Dec;172(12):6871-4.
  21. Domanico PL, **Tse-Dinh YC**. Mechanistic studies on E. coli DNA topoisomerase I: divalent ion effects. *J Inorg Biochem*. 1991 May 1;42(2):87-96.
  22. **Tse-Dinh YC**. Zinc (II) coordination in Escherichia coli DNA topoisomerase I is required for cleavable complex formation with DNA. *J Biol Chem*. 1991 Aug 5;266(22):14317-20.
  23. Fernandez-Beros ME, **Tse-Dinh YC**. Conditional growth of Escherichia coli caused by expression of vaccinia virus DNA topoisomerase I. *J Bacteriol*. 1992 Nov;174(21):7059-62.
  24. Weber PC, Zhu, CX, **Tse-Dinh YC**. Systematic investigation of crystallization parameters for protein-nucleic acid complexes: Application to an active truncated form of Escherichia coli topoisomerase I. *J Crystal Growth* Aug 2;122(1-4):293-7.
  25. Gupta M, Zhu CX, **Tse-Dinh YC**. An engineered mutant of vaccinia virus DNA topoisomerase I is sensitive to the anti-cancer drug camptothecin. *J Biol Chem*. 1992 Dec 5;267(34):24177-80.
  26. Samuel M, Zhu CX, Villanueva GB, **Tse-Dinh YC**. Effect of zinc removal on the conformation of Escherichia coli DNA topoisomerase I. *Arch Biochem Biophys*. 1993 Jan;300(1):302-8.
  27. **Tse-Dinh YC**. Biochemistry of bacterial type I DNA topoisomerases. *Adv Pharmacol*. 1994;29A:21-37.
  28. Gupta M, Zhu CX, **Tse-Dinh YC**. Mutations of vaccinia virus DNA topoisomerase I that stabilize the cleavage complex. *J Biol Chem*. 1994 Jan 7;269(1):573-8.
  29. Fu TJ, **Tse-Dinh YC**, Seeman NC. Holliday junction crossover topology. *J Mol Biol*. 1994 Feb 11;236(1):91-105.
  30. Zhu CX, **Tse-Dinh YC**. Binding of Zn(II) to Escherichia coli DNA topoisomerase I. *Biochem Mol Biol Int*. 1994 May;33(1):195-204.
  31. Du SM, Wang H, **Tse-Dinh YC**, Seeman NC., Topological transformations of synthetic DNA knots. *Biochemistry*. 1995 Jan 17;34(2):673-82.
  32. Zhu CX, Samuel M, Pound A, Ahumada A, **Tse-Dinh YC**. Expression and DNA-binding properties of the 14K carboxyl terminal fragment of Escherichia coli DNA topoisomerase I. *Biochem Mol Biol Int*. 1995 Feb;35(2):375-85.
  33. Yu L, Zhu CX, **Tse-Dinh YC**, Fesik SW. Solution structure of the C-terminal single-stranded DNA-binding domain of Escherichia coli topoisomerase I. *Biochemistry*. 1995 Jun 13;34(23):7622-8.
  34. Zhu CX, Qi HY, **Tse-Dinh YC**. Mutation in Cys662 of Escherichia coli DNA topoisomerase I confers temperature sensitivity and change in DNA cleavage selectivity. *J Mol Biol*. 1995 Jul 28;250(5):609-16.
  35. Fernandez-Beros ME, **Tse-Dinh YC**. Vaccinia virus DNA topoisomerase I preferentially removes positive supercoils from DNA. *FEBS Lett*. 1996 Apr 22;384(3):265-8.
  36. Yu L, Zhu CX, **Tse-Dinh YC**, Fesik SW., Backbone dynamics of the C-terminal domain of Escherichia coli topoisomerase I in the absence and presence of single-stranded DNA. *Biochemistry*. 1996 Jul 30;35(30):9661-6.
  37. Qi H, Menzel R, **Tse-Dinh YC**. Effect of the deletion of the sigma 32-dependent promoter (P1) of the Escherichia coli topoisomerase I gene on thermotolerance. *Mol Microbiol*. 1996 Aug;21(4):703-11.
  38. Qi H, Menzel R, **Tse-Dinh YC**. Regulation of Escherichia coli topA gene transcription: involvement of a sigmaS-dependent promoter. *J Mol Biol*. 1997 Apr 4;267(3):481-9.
  39. Zhu CX, Roche CJ, **Tse-Dinh YC**. Effect of Mg(II) binding on the structure and activity of Escherichia coli DNA topoisomerase I. *J Biol Chem*. 1997 Jun 27;272(26):16206-10.
  40. **Tse-Dinh YC**, Qi H, Menzel R. DNA supercoiling and bacterial adaptation: thermotolerance and thermoresistance. *Trends Microbiol*. 1997 Aug;5(8):323-6.
  41. Zhu CX, Roche CJ, Papanicolaou N, DiPietrantonio A, **Tse-Dinh YC**. Site-directed mutagenesis of conserved aspartates, glutamates and arginines in the active site region of Escherichia coli DNA topoisomerase I. *J Biol Chem*. 1998 Apr 10;273(15):8783-9.
  42. **Tse-Dinh YC**. Bacterial and archeal type I topoisomerases. *Biochim Biophys Acta*. 1998 Oct 1;1400(1-3):19-27.
  43. Ahumada A, **Tse-Dinh YC**. The Zn(II) binding motifs of E. coli DNA topoisomerase I is part of a high-affinity DNA binding domain. *Biochem Biophys Res Commun*. 1998 Oct 20;251(2):509-14.
  44. Qi H, Menzel R, **Tse-Dinh YC**., Increased thermosensitivity associated with topoisomerase I deletion and promoter mutations in Escherichia coli. *FEMS Microbiol Lett*. 1999 Sept 1;178(1):141-6.
  45. Fernandes PB, Menzel R, Hardy DJ, **Tse-Dinh YC**, Warren A, Elsemore DA. Microbial resistance: novel

- screens for a contemporary problem. *Med Res Rev.* 1999 Nov;19(6):559-68.
46. **Tse-Dinh YC.**, Increased sensitivity to oxidative challenges associated with topA deletion in *Escherichia coli*. *J Bacteriol.* 2000 Feb;182(3):829-32.
  47. Zhu CX, **Tse-Dinh YC.** The acidic triad conserved in type IA DNA topoisomerases is required for binding of Mg(II) and subsequent conformational change. *J Biol Chem.* 2000 Feb 25;275(8):5318-22.
  48. Lin CW, Darzynkiewicz Z, Li X, Traganos F, Bedner E, **Tse-Dinh YC.** Differential expression of human topoisomerase IIIalpha during the cell cycle progression in HL-60 leukemia cells and human peripheral blood lymphocytes. *Exp Cell Res.* 2000 Apr 10;256(1):225-36.
  49. Nair JS, Kancherla R, Seiter K, Traganos F, **Tse-Dinh YC.** Action of topoisomerase targeting drugs on non-Hodgkin's lymphoma and leukemia. Correlation of clinical and cell culture studies. *Ann N Y Acad Sci.* 2000;922:326-9.
  50. Nair J, Traganos F, **Tse-Dinh YC.** Differential effect of camptothecin treatment on topoisomerase II alpha expression in ML-1 and HL-60 leukemia cell lines. *Anticancer Res.* 2000 Nov-Dec;20(6B):4183-8.
  51. Kancherla RR, Nair JS, Ahmed T, Durrani H, Seiter K, Mannancheril A, **Tse-Dinh YC.** Evaluation of topotecan and etoposide for non-Hodgkin lymphoma: correlation of topoisomerase-DNA complex formation with clinical response. *Cancer.* 2001 March 1;91(3):463-71.
  52. Roche CJ, **Tse-Dinh YC.** Effect of phosphorothioate substitutions on DNA cleavage by *Escherichia coli* DNA topoisomerase I. *Int J Biol Macromol.* 2001 Oct 22; 29(3):175-80.
  53. Ahumada A, **Tse-Dinh YC.** The role of the Zn(II) binding domain in the mechanism of *E. coli* DNA topoisomerase I. *BMC Biochem.* 2002 May 29; 3:13.
  54. Rui S, **Tse-Dinh YC.** Topoisomerase function during bacterial responses to environmental challenge. *Front Biosci.* 2003 Jan 1; 8:d256-63.
  55. Cheng B, Rui S, Ji C, Gong VW, Van Dyk TK, Drolet M, **Tse-Dinh YC.** RNase H overproduction allows the expression of stress-induced genes in the absence of topoisomerase I. *FEMS Microbiol Lett.* 2003 Apr 25;221(2):237-42.
  56. Cheng B, Zhu CX, Ji C, Ahumada A, **Tse-Dinh YC.** Direct interaction between *Escherichia coli* RNA polymerase and the zinc ribbon domains of DNA topoisomerase I. *J Biol Chem.* 2003 Aug 15;278(33):30705-10.
  57. **Tse-Dinh YC.** Mechanism of type IA DNA topoisomerases. *Recent Res Devel Biochem.* 2003; 4:151-8.
  58. Cheng B, Feng J, Gadgil S, **Tse-Dinh YC.** Flexibility at Gly-194 is required for DNA cleavage and relaxation activity of *Escherichia coli* DNA topoisomerase I. *J Biol Chem.* 2004 Mar 5;279(10):8648-54. Epub 2004 Jan 7.
  59. Cheng B, Feng J, Mulay V, Gadgil S, **Tse-Dinh YC.** Site-directed mutagenesis of residues involved in G Strand DNA binding by *Escherichia coli* DNA topoisomerase I. *J Biol Chem.* 2004 Sep 17;279(38):39207-13.
  60. Baakli I, Hraiky C, Rallu F, **Tse-Dinh YC,** Drolet M., RNase HI overproduction is required for efficient full-length RNA synthesis in the absence of topoisomerase I in *Escherichia coli*. *Mol Microbiol.* 2004 Oct; 54(1):198-211.
  61. Stewart N, Feng J, Liu X, Chaudhuri D, Foster JW, Drolet M, **Tse-Dinh YC.**, Loss of topoisomerase I function affects the RpoS-dependent and GAD systems of acid resistance in *Escherichia coli*. *Microbiology.* 2005 Aug;151(Pt 8):2783-91.
  62. Cheng B, Shukla S, Vasunilashorn S, Mukhopadhyay S, **Tse-Dinh YC.**, Bacterial cell killing mediated by topoisomerase I DNA cleavage activity. *J Biol Chem.* 2005 Nov 18;280(46):38489-95.
  63. Lia G, Praly E, Ferreira H, Stockdale C, **Tse-Dinh YC,** Dunlap D, Croquette V, Bensimon D, Owen-Hughes T., Direct observation of DNA distortion by the RSC complex. *Mol Cell.* 2006 Feb 3;21(3):417-25.
  64. Strahs D, Zhu CX, Cheng B, Chen J, **Tse-Dinh YC,** Experimental and computational investigations of Ser10 and Lys13 in the binding and cleavage of DNA substrates by *Escherichia coli* DNA topoisomerase I. *Nucl Acids Res.* 2006 Mar 31;34(6):1785-97.
  65. **Tse-Dinh YC,** Exploring DNA topoisomerases as targets of novel therapeutic agents in the treatment of infectious diseases. *Infectious Disorders- Drug Targets* 2007 Mar;7(1):3-9.
  66. Cheng B, Liu IF, **Tse-Dinh YC,** Compounds with antibacterial activity that enhance DNA cleavage by bacterial DNA topoisomerase I. *J Antimicrob Chemother* 2007 Apr;59(4):640-5.
  67. Cheng B, Sorokin E, **Tse-Dinh YC,** Mutation adjacent to the active site tyrosine can enhance DNA cleavage and cell killing by the TOPRIM Gly to Ser mutant of bacterial topoisomerase I, *Nucleic Acids Res.* 2008 Feb;36(3):1017-25.
  68. **Tse-Dinh YC.** An update on the development of drugs against smallpox. *Curr Opin Invest Drugs* 2008 Aug;9(8):865-70.
  69. Sutherland JH, Cheng B, Liu IF, **Tse-Dinh YC.** SOS induction by stabilized topoisomerase IA cleavage

- complex occurs via the RecBCD pathway, J Bacteriol. 2008 May;190(9):3399-3403.
70. Sorokin, E, Cheng B, Rathi S, Aedo S, Abrenica MV, **Tse-Dinh YC**. Inhibition of Mg<sup>2+</sup> binding and DNA religation by bacterial topoisomerase I via introduction of additional positive charge into the active site region, Nucl Acids Res. 2008 Aug;36(14):4788-96.
  71. Cheng B, Annamalai T, Sorokin E, Abrenica M, Aedo S, **Tse-Dinh YC**, Asp to Asn substitution at the first position of the DxD TOPRIM motif of recombinant bacterial topoisomerase I is extremely lethal to *E. coli*, J Mol Biol. 2009 Jan 16;385(2):558-67.
  72. **Tse-Dinh YC**, Bacterial topoisomerase I as a target for discovery of antibacterial compounds, 2009, Nucl Acids Res, 2009 Feb;37(3):731-7.
  73. Annamali T, Dani N, Cheng B, **Tse-Dinh YC**, Analysis of DNA relaxation and cleavage activities of recombinant *Mycobacterium tuberculosis* DNA topoisomerase I from a new expression and purification protocol, BMC Biochemistry 2009 Jun 11;10:18.
  74. Liu IF, Annamali T, Sutherland JH, **Tse-Dinh YC**, Hydroxyl radicals are involved in cell killing by bacterial topoisomerase I cleavage complex, J Bacteriol. 2009 Aug;191(16):5315-9.
  75. Sutherland JH, **Tse-Dinh YC**, Analysis of RuvABC and RecG involvement in the *Escherichia coli* response to the covalent topoisomerase-DNA complex. J Bacteriol. 2010 Sep;192(17):4445-51.
  76. Narula G, Becker J, Cheng B, Dani N, Abrenica MV, **Tse-Dinh YC** 2010. The DNA relaxation activity and covalent complex accumulation of *Mycobacterium tuberculosis* topoisomerase I can be assayed in *Escherichia coli*: application for identification of potential FRET-dye labeling sites. BMC Biochemistry 2010 Sep 30; 11:41.
  77. Zhang Z, Cheng B, **Tse-Dinh YC**. Crystal structure of a covalent intermediate in DNA cleavage and rejoining by *Escherichia coli* DNA topoisomerase I. Proc Natl Acad Sci USA. April, 2011, 108:6939-6944.
  78. Narula G, Annamalai T, Aedo S, Cheng B, Sorokin E, Wong A, **Tse-Dinh YC**. The strictly conserved Arg-321 residue in the active site of *Escherichia coli* topoisomerase I plays a critical role in DNA rejoining. J Biol Chem. 2011 May, 286: 18673-82.
  79. Liu IF, Sutherland JH, Cheng B, **Tse-Dinh YC**. Topoisomerase I function during *Escherichia coli* response to antibiotics and stress enhances cell killing from stabilization of its cleavage complex. J Antimicrob Chemother. 2011 Jul;66(7):1518-24
  80. Casu L, Cottiglia F, Leonti M, De Logu A, Agus E, **Tse-Dinh YC**, Lombardo V, Sissi C. Ungeremine effectively targets mammalian as well as bacterial type I and type II topoisomerases. Bioorgan Med Chem Lett. 2011 Dec 1;21(23):7041-4.
  81. Liu IF, Aedo S, **Tse-Dinh YC**. Resistance to topoisomerase cleavage complex induced lethality in *Escherichia coli* via titration of transcription regulators PurR and FNR. BMC Microbiol 2011, Dec 12;11:261.
  82. Narula G, **Tse-Dinh YC**. Residues of *E. coli* topoisomerase I conserved for interaction with a specific cytosine base to facilitate DNA cleavage. Nucl Acids Res, 2012 Oct; 40(18):9233-43.
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### Peer-Reviewed Book Chapters

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