

# SEAN M. KERWIN, Ph.D.

## CURRICULUM VITAE

### EDUCATION:

Ph.D. in Chemistry, University of California, Berkeley

B.S. in Chemistry (with high honors), University of Notre Dame

### PROFESSIONAL EXPERIENCE:

Professor, Texas State University, Department of Chemistry & Biochemistry, 2017 - present

Associate Professor, Texas State University, Department of Chemistry & Biochemistry, 2015 - 2017

Associate Professor, The University of Texas at Austin, Division of Medicinal Chemistry, 1997 - 2015

Assistant Professor, The University of Texas at Austin, Division of Medicinal Chemistry, 1991 - 1997.

Postdoctoral Research Associate, University of California, San Francisco, 1989 - 1991

### LEADERSHIP POSITIONS:

Director, Material Science, Engineering, and Commercialization Program (2022-present)  
Interim Director, Material Science, Engineering, and Commercialization Program (2021-2022)

Chair, Department Safety Committee (2019-present)

Chair, Ad Hoc Committee on PhD Program (2019-2021)

Vice-Chair, University of Texas Press Advisory Committee (2013-2015)

Chair of College of Pharmacy PharmD/PhD and Honors Programs (1996-2015)

Chair of Cell and Molecular Biology graduate program in Chemical Biology and Drug Discovery (2007-2015)

Chair of College of Pharmacy Academic Performance Committee (2009-2015)

Founder and Director of Pharmacy Student Research Training Program (2001-2015)

### RESEARCH INTERESTS:

Synthetic applications of *N*-alkynyl heterocycles in the total synthesis of natural products and natural product-inspired libraries. Drug discovery targeting cancer and infectious diseases. Novel approaches to targeting kinases. Mechanistic and synthetic studies of drugs affecting nucleic acid-associated enzymes and receptors, especially those targeting G-quadruplex DNA and other non-canonical nucleic acid structures. Design of novel

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diradical- and carbene-generating reactions as synthetic tools and for use in cancer cell-selective cytotoxic agents.

### PROFESSIONAL HONORS AND POSITIONS:

American Association for Cancer Research, Chemistry in Cancer Research (CICR)  
Steering Committee member (2015-2017)  
Editorial Board Member, *Natural Products Chemistry & Research* (2012- present)  
Editor-in-Chief, *Reports in Organic Chemistry* (2011-present)  
Member, Center for Research on Environmental Disease, M. D. Anderson Cancer Center,  
Science Park (2004-present)  
Co-Editor-in-Chief, *Current Medicinal Chemistry- Anti-Cancer Agents* (2002-2014)  
Welch Foundation Norman Hackerman Award Nominee (2002)  
Editorial Advisory Board Member, *Current Medicinal Chemistry - Anti-Cancer Agents*  
(2000-present)  
Editorial Advisory Board Member, *Drug Design Reviews-Online* (2003-present)  
Assistant Editor, *Bioorganic Chemistry* (1998-present)  
G. D. Searle Fellow (1998-present)  
Dean's Fellow, College of Pharmacy (1997-1998)  
Regents Fellowship, Univ. of California, Berkeley (1984-1986)  
Biochemistry Award, Univ. of Notre Dame (1984)

### SCIENTIFIC PUBLICATIONS:

#### PAPERS:

1. Kerwin, S. M.; Paul, A. G.; Heathcock, C. H. "Quassinoid Synthesis. 2. Preparation of a Tetracyclic Intermediate Possessing the Bruceantin Tetrahydrofuran Ring." *J. Org. Chem.* **1987**, *52*, 1686-1695.
2. Kerwin, S. M.; Kuntz, I. D.; Kenyon, G. L. "The Design of a DNA Binding Compound Using an Automated Procedure for Screening Potential Ligands" *Med. Chem. Res.* **1991**, *1*, 361-369.
3. Kerwin, S. M.; Heathcock, C. H. "Remote Oxidation of Perhydrophenanthrenes by Template-Directed Hydrogen Atom Abstraction" *J. Org. Chem.* **1992**, *57*, 4005-4013.
4. Anwer, M.; Kerwin, S. M.; Egan, W., Kenyon, G. L., James, T. L. "A Potential Gene Target in HIV-1: Rational, Selection of a Conserved Sequence, and Determination of NMR Distance and Torsion Angle Constraints" *Biochemistry* **1992**, *31*, 9325-9338.
5. Anwer, M.; Kerwin, S. M.; Kenyon, G. L., James, T. L. "Solution Structure of a Conserved Sequence from the HIV-1 Genome: Restrained Molecular Dynamics Simulation with Distance and Torsion Angle Restraints Derived from 2D NMR Spectra" *Biochemistry* **1993**, *32*, 13419-13431.
6. Kerwin, S. M. "Synthesis of a DNA-Cleaving Bis(propargylic) Sulfone Crown Ether" *Tetrahedron Lett.* **1993**, *35*, 1023-1026.

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7. Watts, C. R.; Kerwin, S. M.; Kenyon, G. L.; Kuntz, I. D.; Kallick, D. A. "Rationally Designed N,N'-bis[(N-*p*-guanidinobenzyl-N-methyl)amino-carbonyl]1,3-diaminobenzene, 'BigBen,' Binds to the Minor Groove of d(CGCGAATTCGCG)<sub>2</sub> as Determined by Two-Dimensional Nuclear Magnetic Resonance Spectroscopy" *J. Am. Chem. Soc.* **1995**, *117*, 9941-9950.
8. Fan, J-Y.; Sun, D.; Yu, H.; Kerwin, S. M.; Hurley, L. H. "The Self-Assembly of a Quinobenzoxazine-Mg<sup>2+</sup> Complex on DNA: A New Paradigm for the Structure of a Drug-DNA Complex and Implications for the Structure of the Quinolone Bacterial Gyrase-DNA Complex" *J. Med. Chem.* **1995**, *38*, 408-424.
9. Yu, H-T.; Hurley, L. H.; Kerwin, S. M. "Evidence for the Formation of 2:2 Drug-Mg<sup>2+</sup> Dimers in Solution and for the Formation of Dimeric DNA Complexes on DNA from the DNA-Accelerated Photochemical Reaction of Antineoplastic Quinobenzoxazines" *J. Am. Chem. Soc.* **1996**, *118*, 7040-7048.
10. McPhee, M. M.; Kerwin, S. M. "Synthesis and Metal Ion Binding Studies of Eneidyne-Containing Crown Ethers" *J. Org. Chem.* **1996**, *61*, 9385-9393.
11. Salazar, M.; Thompson, B. D.; Kerwin, S. M.; Hurley, L. H. "Thermally Induced DNA/RNA Hybrid to G-Tetraplex Transitions: Possible Implications for Telomere Synthesis by Telomerase" *Biochemistry* **1996**, *35*, 16011-16115.
12. David, W. M.; Kerwin, S. M. "Synthesis and Thermal Rearrangement of C,N-Dialkynyl Imines: A Potential Aza-Bergman Route to 2,5-Didehydropyridine" *J. Am. Chem. Soc.* **1997**, *119*, 1464-1465.
13. DeLuca, M. R.; Kerwin, S. M. "The *para*-Toluenesulfonic Acid-Promoted Synthesis of 2-Substituted Benzoxazoles and Benzimidazoles from Diacylated Precursors" *Tetrahedron* **1997**, *53*, 457-464.
14. DeLuca, M. R.; Kerwin, S. M. "Total Synthesis of the Novel Cytotoxic Bis(benzoxazole) Natural Product UK-1" *Tetrahedron Lett.* **1997**, *38*, 199-202.
15. Sun, D.; Thompson, B.; Cathers, B. E.; Salazar, M.; Kerwin, S. M.; Trent, J. O.; Jenkins, T.C.; Neidle, S.; Hurley, L.H. "Inhibition of Human Telomerase by a G-Quadruplex-Interactive Compound" *J. Med. Chem.* **1997**, *40*, 2113-2116.
16. Fedoroff, O. Y.; Salazar, M.; Han, H.; Chemeris, V. V.; Kerwin, S. M.; Hurley, L. H. "NMR-Based Model of a Telomerase-Inhibiting Compound Bound to G-Quadruplex DNA" *Biochemistry* **1998**, *36*, 12367-12374.
17. Zeng, Q.P.; Kwok, Y.; Kerwin, S. M.; Mangold, G.; Hurley, L.H. "Design of New Topoisomerase II Inhibitors Based upon a Quinobenzoxazine Self-Assembly Model" *J. Med. Chem.* **1998**, *41*, 4273-4278.
18. Reynolds, M. B.; DeLuca, M. R.; Kerwin, S. M. "The Novel Bis(benzoxazole) Cytotoxic Natural Product UK-1 is a Magnesium Ion-Dependent DNA Binding Agent and Inhibitor of Human Topoisomerase II" *Bioorg. Chem.* **1999**, *27*, 326-337.
19. DeLuca, M. R.; Taraporewala, I.; Kerwin, S. M. "The Conversion of Mixed N,O-Diacylated Aminophenols to 2-Substituted Benzoxazoles" *Heterocycles* **1999**, *51*, 979-982.
20. Kerwin, S. M. "G-Quadruplex DNA as a Target for Drug Design" *Curr. Pharm. Design* **2000**, *6*, 441-471.
21. Hurley, L. H.; Wheelhouse, R. T.; Sun, D.; Kerwin, S. M.; Salazar, M.; Fedoroff, O. Y.; Han, F. X.; Han, H.; Izbicka, E.; Von Hoff, D. D. "G-Quadruplexes as Targets for Drug Design" *Pharmacol. Therap.* **2000**, *85*, 141-158.

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22. McPhee, M. M.; Kern, J. T.; Hoster, B. C.; Kerwin, S. M. "Synthesis, Metal ion Binding, and DNA Cleavage Studies of Propargylic Sulfone-Armed Crown Ethers." *Bioorg. Chem.* **2000**, *8*, 98-118.
23. Yu, H.; Kwok, Y.; Hurley, L. H.; Kerwin, S. M. "Efficient, Mg<sup>2+</sup>-Dependent Photochemical Cleavage of DNA by the Anticancer Quinobenzoxazine (S)-A-62176" *Biochemistry* **2000**, *38*, 10236-10246.
24. David, W. M.; Kumar, D.; Kerwin, S. M. "Synthesis of a Heterocyclic Aza-enediyne and Its DNA Cleavage Properties" *Bioorg. Med. Chem. Lett.* **2000**, *10*, 2509-2512.
25. Fletcher, T.; Cathers, B.; Ravikumar, K. S.; Mamiya, B. M.; Kerwin, S. M. "Inhibition of Human Telomerase by 7-Deaza-2'-deoxyguanosine Nucleoside Triphosphate Analogs: Potent Inhibition by 6-Thio-7-deaza-2'-deoxyguanosine 5'-Triphosphate (TDG-TP)" *Bioorg. Chem.* **2001**, *29*, 36-55.
26. Kumar, D.; Kanz, B.; Mamiya, B. M.; Kern, J. T.; Kerwin, S. M. "Synthesis of a Phosphoramidate Prodrug of 6-Thio-7-deaza-2'-deoxyguanosine (TDG): A Regioselective Phosphorylation" *Tetrahedron Lett.* **2001**, *42*, 565-567.
27. McPhee, M. M.; Kerwin, S. M. "Synthesis, DNA Cleavage, and Cytotoxicity of a Series of Bis(propargylic) Sulfone Crown Ethers" *Bioorg. Med. Chem.* **2001**, *9*, 2809-2818.
28. Reyzer, M. L.; Brodbelt, J. S.; Kumar, D.; Kerwin, S. M. "Evaluation of Complexation of Metal Mediated DNA Binding Drugs to Oligonucleotides via Electrospray Ionization Mass Spectrometry" *Nucl. Acids Res.* **2001**, *29*, u9-u20.
29. Kerwin, S. M.; Sun, D.; Kern, J. T.; Rangan, A.; Thomas, P. W. "G-Quadruplex DNA Binding by a Series of Carbocyanine Dyes" *Bioorg. Med. Chem. Lett.* **2001**, *11*, 2411-2414.
30. Kumar, D.; David, W. M.; Kerwin, S. M. "N-Propargyl-2-alkynylbenzothiazolium Aza-enediynes: Role of the 2-Alkynylbenzothiazolium Functionality in DNA Cleavage" *Bioorg. Med. Chem. Lett.*, **2001**, *11*, 2971-2974.
31. Kerwin, S. M.; Thomas, P. W.; Kern, J. T.; Ravikumar, K. S.; Chen, G. "Perylene Diimide G-Quadruplex DNA Binding Selectivity is Mediated by Ligand Aggregation" *Bioorg. Med. Chem. Lett.* **2002**, *12*, 447-450.
32. Miller, D. J.; Ravikumar, K. S.; Shen, H.; Suh, J.-K.; Kerwin, S. M.; Robertus, J. "Structure-Based Design and Characterization of Novel Platforms for Ricin and Shiga Toxin Inhibition" *J. Med. Chem.* **2002**, *45*, 90-98.
33. Tuntiwechapikul, W.; David, W. M.; Kumar, D.; Salazar, M.; Kerwin, S. M. "DNA Modification by 4-Aza-3-ene-1,6-diynes: DNA Cleavage, pH-Dependent Cytosine-Specific Interactions, and Cancer Cell Cytotoxicity" *Biochemistry* **2002**, *41*, 5283-5290.
34. David, W. M.; Brodbelt, J.; Kerwin, S. M.; Thomas, P. W. "Investigation of Quadruplex Oligonucleotide-Drug Interactions by Electrospray Ionization-Mass Spectrometry" *Anal. Chem.* **2002**, *74*, 2029-2033.
35. Kumar, D.; Jacob, M.; Reynolds, M.; Kerwin, S. M. "Synthesis and Evaluation of Anticancer Benzoxazoles and Benzimidazoles related to UK-1" *Bioorg. Med. Chem.* **2002**, *10*, 3997-4004.

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36. Kern, J. T.; Thomas, P. W.; Kerwin, S. M. "The Relationship between Ligand Aggregation and G-quadruplex DNA Selectivity in a Series of 3,4,9,10-Perylenetetracarboxylic Acid Diimides" *Biochemistry*, **2002**, *41*, 11379-11389.
37. Kern, J. T.; Kerwin, S. M. "The Aggregation and G-Quadruplex DNA Selectivity of Charged 3,4,9,10-perylenetetracarboxylic Acid Diimides" *Bioorg. Med. Chem. Lett.*, **2002**, *12*, 3395-3398.
38. Nadipuram, A. K.; David, W. M.; Kumar, D.; Kerwin, S. M. "Synthesis and Thermolysis of Heterocyclic 3-Aza-3-ene-1,5-diyne" *Org. Lett.* **2002**, *4*, 4543-4546.
39. Feng, L., Kumar, D.; Kerwin, S. M. "An Extremely Facile Aza-Bergman Rearrangement of Sterically Unencumbered Acyclic 3-Aza-3-ene-1,5-diyne." *J. Org. Chem.* **2003**, *68*, 2234-2242.
40. Feng, L.; Kerwin, S. M. "Isolation of a Cyclopropane-Containing Product from the Rearrangement of a 3-Aza-3-ene-1,5-diyne under Acid Catalysis" *Tetrahedron Lett.* **2003**, *44*, 3463-3466.
41. Kerwin, S. M. "Saponins with Anticancer and Chemoprevention Activity" *Curr. Med. Chem. Anticancer Agents* **2004**, *4*, 263-272.
42. Oehlers, L.; Mazzitelli, C.; Rodriguez, M.; Kerwin, S. M.; Brodbelt, J. "Evaluation of Complexes of DNA Duplexes and Novel Benzoxazoles and Benzimidazoles by Electrospray Ionization Mass Spectrometry" *J. Am. Soc. Mass Spec.* **2004**, *15*, 1593-1603.
43. Feng, L.; Kumar, D.; Birney, D.; Kerwin, S. M. " $\alpha$ ,5-Didehydro-3-picoline Diradicals from Skipped Aza-Enediynes: Computational and Trapping Studies of an Aza-Myers-Saito Cyclization" *Org. Lett.* **2004**, *6*, 2059-2062.
44. Kerwin, S. M.; Nadipuram, A. "5H-Cyclopentapyrazines from 1,2-Dialkynylimidazoles" *Synlett* **2004**, 1404-1408.
45. Pothukuchy, A.; Mazzitelli, C.; Rodriguez, M. L.; Tuesuwan, B.; Salazar, M.; Brodbelt, J. S.; Kerwin, S. M. "Duplex and Quadruplex DNA binding and Photocleavage by Trioxatriangulenium Ion" *Biochemistry* **2005**, *44*, 2163-2172.
46. Nadipuram, A. K.; Kerwin, S. M. "Intra- and Intermolecular Trapping of Cyclopentapyrazine Carbenes Derived from 1,2-Dialkynylimidazoles" *Tetrahedron Lett.* **2006**, *47*, 353-356.
47. Nadipuram, A. K.; Kerwin, S. M. "Thermal Cyclization of 1,2-Dialkynylimidazoles to Imidazo[1,2-*a*]pyridines" *Tetrahedron*, **2006**, *62*, 3798-3808.
48. Wang, X.; Stavchansky, S. A.; Bowman, P.; Kerwin, S. M. "Cytoprotective Effect of Caffeic Acid Phenethyl Ester (CAPE) and Catechol Ring-Fluorinated CAPE Derivatives against Menadione-Induced Oxidative Stress in Human Endothelial Cells" *Bioorg. Med. Chem.* **2006**, *14*, 4879-4887.
49. Feng, L.; Zhang, A.; Kerwin, S. M. "Enediynes from Aza-enediynes: C,N-Dialkynyl Imines Undergo Both Aza-Bergman Rearrangement and Conversion to Enediynes and Fumaronitriles" *Org. Lett.* **2006**, *8*, 1983-1986.
50. Tuesuwan, B.; Kerwin, S. M. "2-Alkynyl-N-Propargyl Pyridinium Salts: Pyridinium-Based Heterocyclic Skipped-Aza-Enediynes that Cleave DNA by Deoxyribosyl Hydrogen Atom Abstraction and Guanine Oxidation" *Biochemistry* **2006**, *45*, 7265-7276.

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51. Mazzitelli, C. L.; Rodriguez, M.; Kern, J. T.; Kerwin, S. M.; Brodbelt, J. S. "Evaluation of Binding of Perylene Diimide and Benzannulated Perylene Diimide Ligands To DNA by Electrospray Ionization Mass Spectrometry." *J. Am. Soc. Mass Spectrom.* **2006**, *17*, 593-604.
52. Sherman, C. L.; Pierce, S.; Brodbelt, J. S.; Tuesuwan, B.; Kerwin, S. M. "Identification of the Adduct Between a 4-Aza-3-ene-1,6-diyne and DNA Using Electrospray Ionization Mass Spectrometry" *J. Am. Soc. Mass Spectrom.* **2006**, *17*, 1342-1352.
53. Wang, X.; Bowman, P.; Kerwin, S. M.; Stavchansky, S. A. "Stability of Caffeic Acid Phenethyl Ester (CAPE) and its Fluorinated Derivative (FCAPE) in Rat Plasma" *Biomed. Chromatogr.* **2007**, *21*, 343-350.
54. McKee, M. L., Kerwin, S. M. "Synthesis, Metal Ion Binding, and Biological Evaluation of New Anticancer 2-(2'-Hydroxyphenyl)benzoxazole Analogs of UK-1" *Bioorg. Med. Chem.* **2008**, *16*, 1775-1783.
55. Mazzitelli, C. L.; Rodriguez, M.; Kerwin, S. M.; Brodbelt, J. S. "Evaluation of Metal-Mediated DNA Binding of Benzoxazole Ligands by Electrospray Ionization Mass Spectrometry" *J. Am. Soc. Mass Spectrom.* **2008**, *19*, 209-218.
56. Tuesuwan, B.; Kern, J. T.; Thomas, P. W.; Rodriguez, M. L.; Li, J.; David, W. M.; Kerwin, S. M. "Simian Virus 40 Large T-antigen G-Quadruplex DNA Helicase Inhibition by G-Quadruplex DNA-Interactive Agents" *Biochemistry* **2008**, *47*, 1896-1909.
57. Wang, X.; Pang, J.; Newman, R. A.; Kerwin, S. M.; Bowman, P.; Stavchansky, S. A. "Quantitative Determination of Fluorinated Caffeic Acid Phenethyl Ester Derivative from Rat Blood Plasma by Liquid Chromatography-Electrospray Ionization Tandem Mass Spectrometry" *J. Chromatogr. B.* **2008**, *867*, 138-143.
58. Wang, X.; Stavchansky, S. A.; Zhao, B.; Bynum, J. A.; Kerwin, S. M.; Bowman, P. "Cytoprotection of Human Endothelial Cells from Menadione Cytotoxicity by Caffeic Acid Phenethyl Ester (CAPE): The Role of Heme Oxygenase-1" *Eur. J. Pharmacol.* **2008**, *591*, 28-35.
59. Laroche, C.; Li, J.; Freyer, M. S.; Kerwin, S. M. "Coupling Reactions of Bromoalkynes with Imidazoles Mediated by Copper Salts: Synthesis of Novel *N*-Alkynylimidazoles" *J. Org. Chem.*, **2008**, *73*, 6462-6465.
60. Mandal, S.; Li, W.-T.; Bai, Y.; Robertus, J. D.; Kerwin, S. M. "Synthesis of 2-Substituted 9-Oxa-guanines [5-Amino-oxazolo[5,4-d]pyrimidin-7(6H)-ones] and 9-Oxa-2-thio-xanthenes [5-Mercapto-oxazolo[5,4-d]pyrimidin-7(6H)-ones]" *Beilstein J. Org. Chem.* **2008**, *4*(26), 1-5.
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64. Laroche, C.; Li, J.; Kerwin, S. M. "Lithiation and Functionalization of *N*-Alkynylimidazoles at the 2-Position" *Tetrahedron Lett.* **2009**, *50*, 5194-5197.
65. Wang, X.; Pang, J.; Maffucci, J. A.; Newman, R. A.; Kerwin, S. M.; Bowman, P. D.; Stavchansky, S. "Pharmacokinetics of Caffeic Acid Phenethyl Ester and its Catechol-Ring Fluorinated Derivative Following Intravenous Administration to Rats" *Biopharm. Drug Disp.* **2009**, *30*, 221-228.
66. Laroche, C.; Kerwin, S. M. "Efficient, Regioselective Access to Bicyclic Imidazo[1,2-*x*]-Heterocycles via Gold and Base Promoted Cyclization of 1-Alkynylimidazoles" *J. Org. Chem.* **2009**, *74*, 9229-9232.
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68. Wang, X.; Stavchansky, S.; Kerwin, S. M.; Bowman, P. D. "Structure-activity Relationships in the Cytoprotective Effect of Caffeic Acid Phenethyl Ester (CAPE) and Fluorinated Derivatives: Effects on Heme Oxygenase-1 Induction and Antioxidant Activities. *Eur. J. Pharmacol.* **2010**, *635*, 16-22.
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72. Yang, J.; Kerwin, S. M.; Bowman, P. P., Stavchansky, S. "Stability of Caffeic Acid Phenethyl Amide (CAPA) in Rat Plasma" *Biomed. Chromatogr.* **2012**, *26*, 594-598.
73. Schoonover, M.; Kerwin, S. M. "G-Quadruplex DNA Cleavage Preference and Identification of a Perylene Diimide G-Quadruplex Photocleavage Agent Using a Rapid Fluorescent Assay" *Bioorg. Med. Chem.* **2012**, *20*, 6904-6918.
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80. Reinus, B.; Kerwin, S. M. "A Copper-Catalyzed N-Alkynylation Route to 2-Substituted N-Alkynyl Pyrroles and Their Cyclization into Pyrrolo[2,1-c]oxazin-1-ones: A Formal Total Synthesis of Peramine" *Synthesis*, **2017**, *49*(11), 2544-2554.
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82. McBrayer, D.; Schoonover, M.; Long, K.; Escobedo, R.; Kerwin, S. M. "N-methylmesoporphyrin IX Exhibits G-Quadruplex-Specific Photocleavage Activity" *ChemBioChem* **2019**, *20*, 1924-1927.
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INVITED REVIEWS/COMMENTARIES

1. Kerwin, S. M.; Heathcock, C. H. Commentary on "Albomitomycin A and Isomitomycin A: Products of Novel Intramolecular Rearrangement of Mitomycin A. Total Synthesis of (+/-) Mitomycins via Isomitomycin A" *Chemtracts Organic Chem.* **1988**, *1*, 156-158.
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  4. Kerwin, S. M. Review of "Nucleic Acids: Structures, Properties, and Functions." *J. Med. Chem.* **2000**, *43*, 4721-4722.
  5. Kerwin, S. M. Commentary "Towards Bioengineering New Anticancer Drugs" *Chem. Biol.*, **2002**, *9*(9), 956-958.
  6. Kerwin, S. M. Review of "eHiTS 5.1.6." *J. Am. Chem. Soc.* **2005**, *127*, 8899-8900.
  7. Kerwin, S. M. Commentary on "Effect of O6-Methylguanine on the Stability of G-Quadruplex DNA" in *JACS Select 2009 Issue 4* ([pubs.acs.org/JACSbeta/jvi/issue4.html](http://pubs.acs.org/JACSbeta/jvi/issue4.html))
  8. Kerwin, S. M. "ChemBioOffice Ultra" *J. Am. Chem. Soc.* **2010**, *132*, 2466-2467.
  9. Kerwin, S. M. "Natural Products Research: Future Trends" *Nat. Prod. Chem. Res.* **2015**, *in press*.

### BOOK CHAPTERS:

Kerwin, S. M. "DNA Damage Due to Diradical-Generating Cyclizations" in *Radical and Radical Ion Reactivity in Nucleic Acid Chemistry*, Marc Greenberg (Ed) Wiley: New York, 2009, pp 389-419.

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### ISSUED PATENTS:

1. US 5,922,753 Petrie, C.; Orme, M. W.; Baidur, N.; Robbins, K. G.; Hurley, L. H.; Kerwin, S. M.; Mundy, G. M. "Methods for Treating Bone Deficit Conditions with Benzothiazole" Issued 7/16/99.
2. US 6,004,939 Chen, S.-F.; Maine, I. M.; Kerwin, S. M.; Fletcher, T. M.; Salazar, M.; Mamiya, B.; Wajima, M.; Windle, B. E. "Methods for Modulation and Inhibition of Telomerase" Issued 12/21/99.
3. US 6,054,442 Chen, S.-F.; Maine, I.; Kerwin, S. M.; Fletcher, T. M.; Salazar, M.; Mamiya, B.; Windle, B.E.; Wajima, M. "Methods and Compositions for Modulation and Inhibition of Telomerase *In Vitro*" Issued 4/25/00.

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4. US 6,156,763 Kerwin, S. M.; Fedoroff, O. Y.; Salazar, M.; Hurley, L. H. "Inhibition of Human Telomerase by a G-quadruplex-Interaction Compound" Issued 12/5/00.
5. US 6,177,280 Yan, X.; Kerwin, S. M.; Robertus, J. "Ricin Inhibitors and Methods for Use Thereof" Issued 1/23/01.
6. US 6,297,284 Kerwin, S. M.; David, W. M. "DNA-Cleaving Anticancer Compounds" Issued 10/2/01
7. US 6,528,517 Hurley, L.H.; Zeng, Q.; Kwok, Y.; Gam, J.; Kerwin, S. M. "Synthesis of Quinobenzoxazine Analogues with Topoisomerase II and Quadruplex Interactions for use as Antineoplastic Agents" Issued 3/4/03
8. US 6,562,969 Robertus, J.; Kerwin, S. M.; Yan, X. "Ricin Inhibitors and Methods for Use Thereof" Issued 5/13/03.
9. US 6,593,306 Chen, S.-F.; Maine, I. M.; Kerwin, S. M.; Fletcher, T. M.; Salazar, M.; Mamiya, B.; Wajima, M.; Windle, B. E. "Methods for Modulation and Inhibition of Telomerase" Issued 7/15/03.
10. US 6,623,930 Kerwin, S. M.; Fedoroff, O. Y.; Salazar, M. S.; Hurley, L. H. "Inhibition of Human Telomerase by a G-Quadruplex-Interaction Compound" Issued 9/13/03.
11. US 6,649,631 Orme, M. W.; Baidur, N.; Robbins, K. G.; Harris, S. M.; Kontoyianni, M.; Hurley, L. H.; Kerwin, S. M.; Mundy, G. M.; Petrie, C. "Compositions and Methods for Treating Bone Deficit Conditions" Issued 11/18/03.
12. US 6,686,345 Kerwin, S. M.; David W. M. "DNA-Cleaving Antitumor Agents" Issued 2/3/04. (<http://www.freepatentsonline.com/6686345.html>)
13. US 6,689,887 Kerwin, S. M.; Fedoroff, O. Y.; Salazar, M. "Inhibition of Human Telomerase by a G-Quadruplex-Interaction Compound" Issued 2/10/04. (<http://www.freepatentsonline.com/6689887.html>)
14. US 6,720,334 Kerwin, S. M.; Hurley, L. H.; DeLuca, M. R.; Moore, B. M., III; Mundy, G. M. "Methods and Compositions for Stimulating Osteoblast Proliferation or Treating Malignant Cell Proliferation and Methods for Selecting Osteoclast Proliferation Stimulants" Issued 4/13/04. (<http://www.freepatentsonline.com/6720344.html>)
15. US 6,908,948 Kerwin, S. M.; David, W. M. "DNA-Cleaving Antitumor Agents" Issued 6/21/05 (<http://www.freepatentsonline.com/6908948.html>)

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16. US 7,294,642 Kerwin, S. M. "UK-1 Analogues: Methods of Preparation and Use"  
Issued 11/13/07

**TEACHING:**

Previously Taught (within the past 10 years):

MSEC7100: Doctoral Assistantship Development  
MSEC7304: Collaborative Research  
CHEM3375: Principles of Biochemistry  
CHEM2341: Organic Chemistry 1  
CHEM2342: Organic Chemistry 2  
CHEM4382: Adv. Biochemistry Lab 2  
CHEM5384: Current Topics in Biochemistry  
CHEM5387: Nucleic Acids  
PHR 151R: Introduction to Pharmaceutical Research  
PHR 251C: Pharmaceutical Biochemistry  
PHR 143M: Principles of Medicinal Chemistry  
PHR 143P: Basic Pharmaceutical Sciences Lab  
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Dr. Pete Theisen – Former faculty member, Univ. Nevada, Reno, deceased 2021

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