CURRICULUM VITAE

Name: DANIEL L. BAKER **Department:** CHEMISTRY

EDUCATION

DEGREES	DISCIPLINE	INSTITUTION	YEAR
BS	Chemistry	Central Michigan University	1992
PhD	Pharmacology and Toxicology	University of Arizona	1998

EXPERIENCE

RANK	DEPARTMENT	INSTITUTION	YEAR
Postdoctoral Trainee	Department of Physiology	University of Tennessee Health Science Center	May 1998- June 2001
Postdoctoral Fellow (American Heart Association)	Department of Neurology	University of Tennessee Health Science Center	July 2001- June 2003
Instructor	Department of Physiology	University of Tennessee Health Science Center	May 2003
Associate Member		University of Tennessee Cancer Institute	December 2003- June 2006
Member	Genomics and Bioinformatics Center of Excellence	University of Tennessee Health Science Center	June 2003- June 2006
Member	Vascular Biology Center of Excellence	University of Tennessee Health Science Center	June 2003- June 2006
Assistant Professor	Department of Medicine	University of Tennessee Health Science Center	June 2003- June 2006
Assistant Professor	Department of Chemistry	University of Memphis	August 2006- August 2012
Associate Professor	Department of Chemistry	University of Memphis	September 2012- August 2022
Adjunct Associate Professor	Department of Physiology	University of Tennessee Health Science Center	June 2015- May 2018
Professor	Department of Chemistry	University of Memphis	September 2022 -

HONORS/AWARDS

HONOR/AWARD	INSTITUTION	YEAR
Dunavant Travel Award	College of Arts and Sciences, Univeristy of Memphis	Summer 2007
Professional Development Assignment	College of Arts and Sciences, University of Memphis	Summer/Fall 2015
Faculty Research Grant	College of Arts and Sciences, University of Memphis	Summer 2015
RIF Grant	University of Memphis	2017-18

TEACHING EXPERIENCE

SUBJECT	INSTITUTION
CHEM 1010 "Chemistry of Materials"	University of Memphis
CHEM 1020 "Chemistry of Life"	University of Memphis
CHEM 1021 "Chemistry of Life" Lab	University of Memphis
CHEM 3501 "Foundations of Bioorganic Chemistry Lab"	University of Memphis
CHEM 3511 "Foundations of Bioorganic Chemistry"	University of Memphis
CHEM 4315/ 6315 "Organic Medicinal Chemistry"	University of Memphis
CHEM 4580/ 6580 "Chemical Biology"	University of Memphis
CHEM 7505/ 8505 "Protein Mass Spectrometry"	University of Memphis

STUDENT ADVISING/MENTORING

DEGREE	NAME	YEAR OF GRADUATION
MS	Ben Clayton (Co-mentored with Abby Parrill)	2007
MS	Jeff North (Co-mentored with Abby Parrill)	2007
MS	Angela Howard (Co-mentored with Abby Parrill)	2007
PhD	Adrienne Hoeglund (Co-mentored with Abby Parrill)	2009
MS	Irene Wanjala (Co-mentored with Abby Parrill)	2010
PhD	Irene Wanjala (Co-mentored with Abby Parrill)	2010
PhD	Jeff North (Co-mentored with Abby Parrill)	2010
PhD	Angela Howard (Co-mentored with Abby Parrill)	2011
PhD	Ben Clayton (Co-mentored with Abby Parrill)	2011
MS	Jacob McMillan (Co-mentored with Abby Parrill)	2013
BS	Whitney Scott	2013
BS (Honors)	Melanie Sparks	2013
MS	Lauren Ragle (Co-mentored with Abby Parrill)	2013
PhD	Jacob McMillan (Co-mentored with Abby Parrill)	2014
MS	Krista Bearden	2014
MS	Samantha Gacasan (Co-mentored with Abby Parrill)	2015
PhD	Lauren Ragle (Co-mentored with Abby Parrill)	2016
MS	Babtunde Raji	2016
PhD	Samantha Gacasan (Co-mentored with Abby Parrill)	2017
MS	Lee Wink (Co-mentored with Abby Parrill)	2017
MS	Keri Hannie	2017
PhD	Babtunde Raji	2018
MS	Jay Yarbro (Co-mentored with Ramin Homayouni)	2018
PhD	Lee Wink (Co-mentored with Abby Parrill)	2018
BS (Honors)	Chandler Sears (Co-mentored with Abby Parrill)	2019
PhD	Keri Hannie	2020
MS	Paige Castleman (Co-mentored with Abby Parrill)	2019
MS	Christy Dyer (Co-mentored with Abby Parrill)	2020
MS	Brian Hoffman	2020
MS	Greg Szwabowski (Co-mentored with Abby Parrill)	2020
PhD	Paige Castleman (Co-mentored with Abby Parrill)	2021
MS	E. Rachel Wiley	2021

MS	Makenzie Griffing (Co-mentored with Abby Parrill)	2021
Thesis MS	Brittany Thomas (Co-mentored with Abby Parrill)	2021
PhD	Greg Szwabowski (Co-mentored with Abby Parrill)	2022 (anticipated)
MS	Hayden Criswell	2022
PhD	Christy Dyer (Co-mentored with Abby Parrill)	2023 (anticipated)
PhD	Brian Hoffman	2023 (anticipated)
PhD	E. Rachel Wiley	2023 (anticipated)
PhD	Hayden Criswell	2025 (anticipated)

Refereed Journal Publications

1. **Baker, D.L.,** Krol, E.S., Jacobson, N., and Liebler, D.C. (1999) Reactions of Beta-carotene with cigarette smoke oxidants: Identification of carotenoid oxidation products and evaluation of the prooxidant/antioxidant effect. *Chem. Res. Toxicol.* **12**:535-543.
2. Bautista, D.L., **Baker, D.L.,** Wang, D., Fischer, D.J., van Brocklyn, J., Spiegel, S., Tigyi, G., and Parrill, A.L. (2000) Dynamic modeling of EDG1 receptor structural changes induced by site-directed mutations. *Journal of Molecular Structure - Theochem.* **529**:219-224.
3. Parrill, A.L., Wang, D., Bautista, D.L., Van Brocklyn, J.R., Lorincz, Z., Fischer, D.J., **Baker, D.L.,** Liliom, K., Spiegel S., and Tigyi, G. (2000) Identification of Edg1 receptor residues that recognize sphingosine 1-phosphate, *J. Biol. Chem.* **275**:39379-39384.
4. Liliom, K., Sun, G., Bunemann, M., Virag, T., Nusser, **Baker, D.L.,** Wang, D., Fabian, M.J.N., Brandts, B., Bender, K., Eickel, A., Malik, K.U., Miller, D.D., Desiderio, D.M., Tigyi, G., and Pott, L. (2001) Sphingosylphosphorylcholine is a naturally occurring lipid mediator in blood plasma: a possible role in regulating cardiac function via sphingolipid receptors. *Biochem. J.* **355**:189-197.
5. **Baker, D.L.,** Desiderio, D.M., Miller, D.D., and Tigyi, G.J. (2001) Direct quantitative analysis of lysophosphatidic acid molecular species by stable isotope dilution electrospray ionization liquid chromatography mass spectrometry. *Anal. Biochem.* **292**:287-295.
6. Fischer, D.J., Nusser, N., Virag, T., Yokoyama, K., Wang, D., **Baker, D.L.,** Bautista, D., Parrill, A.L., and Tigyi, G.J. (2001) Short-chain phosphatidates are subtype-selective antagonists of lysophosphatidic acid receptors. *Mol. Pharm.* **60**:776-784.
7. Sardar, V.M., Bautista, D.L., Fischer, D.J., Yokoyama, K., Nusser, N., Virag, T., Wang, D., **Baker, D.L.,** Tigyi, G., and Parrill, A.L. (2001) Molecular basis for lysophosphatidic acid receptor antagonist selectivity. *Biochim. Biophys. Acta* **1582**:310-318.
8. Yokoyama, K., **Baker, D.L.,** Virag, T., Liliom, K., Byun, H., Tigyi, G., and Bittman, R. (2001) Stereochemical properties of lysophosphatidic acid signaling and metabolism. *Biochim. Biophys. Acta* **1582**: 296-309.
9. Sano, T., **Baker, D.L.,** Wada, A., Yatomi, Y., Kobayashi, T., Igarashi, Y., and Tigyi, G.J. (2002) Multiple mechanisms linked to platelet activation generate lysophosphatidic acid and sphingosine-1-phosphate in blood. *J. Biol. Chem.* **277**:21197-21206.
10. **Baker, D.L.,** Morrison, P., Miller, B., Riely, C.A., Tolley, B., Bonfrer, J.M.G., Westermann, A.M., Moolenaar, W.H., and Tigyi, G.J. (2002) Lack of a Diagnostic Correlation Between Plasma Lysophosphatidic Acid Concentration and Ovarian Cancer. *JAMA* **287**: 3081-3082.

11. Rother, E., Brandl, R., **Baker, D.L.,** Tigyi, G., and Siess, W. (2003) Inhibition of platelet activation induced by lysophosphatidic acid, mildly oxidized LDL and plaque lipid core by subtype-selective antagonists of lysophosphatidic acid receptors. *Circulation* **108**: 741-747.
12. Yue, J., Yokoyama, K., Balazs, L., **Baker, D.L.,** Pilquil, C., Brindley, D.N., and Tigyi, G. (2004) Transgenic overexpression of LPP_1 results in multiple phenotypic abnormalities that are independent of LPA signalling. *Cell. Signalling* **16**:385-399.
13. Zhang, C., **Baker, D.L.,** Yasuda, S., Makarova, N., Johnson, L.R., Balazs, L., McIntyre, T.M., Xu, Y., Prestwich, G.D., Byun, H-S., Bittman, R., and Tigyi, G. (2004) Lysophosphatidic acid induces neointima formation through PPARg activation. *J. Exp. Med.* **199**: 763-774.
14. Fujiwara, Y., Sardar, V., Tokumura, A., **Baker, D.L.**, Murakami-Murofudhi, K., Parrill, A., and Tigyi, G. (2005) Identification of residues responsible for ligand recognition and regioisomeric selectivity of LPA receptors expressed in mammalian cells. *J Biol. Chem.* **280**: 35038-35050.
15. Gududuru, V., Zeng, K., Tsukahara, R., Makarova, N., Fujiwara, Y., Pigg, K.R., **Baker, D.L.**, Tigyi, G., and Miller, D.D. (2006) Identification of Darmstoff analogs as selective agonists and antagonists of lysophosphatidic acid receptors. *Bioorg. Med. Chem. Lett.* **16**: 451-456.
16. Durgam, G.G., Tsukahara, R., Makarova, N., Fujiwara, Y., Pigg, K.R., **Baker, D.L.**, Sardar, V., Parrill, A.L., Tigyi, G., and Miller, D.D. (2006) Synthesis and pharmacological evaluation of second-generation phosphatidic acid derivatives as lysophosphatidic acid receptor ligands. *Bioorg. Med. Chem. Lett.* **16**: 633-640.
17. Li, Z., **Baker, D.L.**, Tigyi, G., and Bittman, R. (2006) Synthesis of Photoactivatable Analogues of Lysophosphatidic Acid and Covalent Labeling of Plasma Proteins. *J Org. Chem.* **71**: 629-635.
18. Tsukahara, T., Tsukahara, R., Yasuda, S., Makarova, N., Valentine, W.J., Yuan, H., **Baker, D.L.**, Li, Z., Bittman,R., Parrill, A.L., and Tigyi, G. (2006) Ether Analogs of Lysophosphatidic Acid are Endogenous High-Affinity Partial Agonists of $PPARg_1$. *J Biol. Chem.* **281**: 3398-3407.
19. **Baker, D.L.**, Fujiwara, Y., Pigg, K.R., Tsukahara, R., Kobayashi, S., Uchiyama, A., Murakami-Murofushi, K., Koh, E., Bandle, R.W., Byun, H., Bittman, R., Murphy, M., Fiedler A., Mills, G.B., and Tigyi, G. (2006) Carba Analogs of Cyclic Phosphatidic Acid Are Selective Inhibitors of Autotaxin and Cancer Invasion. *J Biol. Chem.* **281**: 22786-22793.
20. Parrill, A.L., Echols, U., Nguyen, T., Pham, T.T., Hoeglund, A., and **Baker, D.L.** (2008) Virtual screening approaches for the identification of non-lipid autotaxin inhibitors. *Bioorg. Med. Chem.* **16: 1784-1795.**
21. Parrill, A.L. and **Baker, D.L.** (2008) Autotaxin Inhibition: Challenges and Progress Toward Novel Anti-Cancer Agents. *Anti-Cancer Agents in Med. Chem*. **8**: 917-923.
22. North, E.J., Osborne, D.A., Bridson, P.K., **Baker, D.L.**, and Parrill, A.L. (2009) Autotaxin structure-activity relationships revealed through lysophosphatidylcholine analogs. *Bioorg. Med. Chem.* **17**: 3433-3442.
23. Hoeglund, A.B., Howard, A.L., Wanjala, I.W., Pham, T.T., Parrill, A.L., and **Baker, D.L.**, (2010) Characterization of non-lipid autotaxin inhibitors. *Bioorg. Med. Chem.* **18**: 769-776.

24. Hoeglund, A.B., Bostic, H.E., Howard, A.L., Wanjala, I.W., Best, M.D., **Baker, D.L.**, and Parrill, A.L., (2010) Optimization of a pipemidic acid autotaxin inhibitor. *J. Med. Chem.* **53**: 1056-1066.
25. North, E.J., Howard, A.L., Wanjala, I.W., Pham, T.T., **Baker, D.L.**, and Parrill, A.L., (2010) Pharmacophore Development and application toward the identification of novel, small-molecule autotaxin inhibitors. *J. Med. Chem.* **53**: 3095-3105.
26. Valentine, W.J., Kiss, G.N., E, S., Gotoh, M., Murakami-Murofushi, K., Pham, T.C., **Baker, D.L.**, Parrill, A.L., Lu, X., Bittman, R., Pyne, N.J., and Tigyi, G., (2010) (S)-FTY720-Vinylphosphonate, an Analogue of the Immunosuppressive agaent FTY720, is a Pan-antagonist of Sphingosine 1-Phosphate GPCR Signalling and Inhibits Autotaxin Activity. *Cell Signal.* **22**: 1543-1553.
27. Tsukahara, T., Tsukahara, R., Fujiwara, Y., Cheng, Y., Guo, H., Bolen, A., Zhang, C., Balazs, L., Re, F., Frohman, M.A., **Baker, D.L.**, Parrill A.L., Uchiyama, A., Kobayashi, T., Murakami-Murofushi, K., and Tigyi, G., (2010) Phospholipase D2-Dependent Inhibition of the Nuclear Hormone Receptor PPARγ by cyclic Phosphatidic Acid. *Molecular Cell* **39**: 421-432.
28. Parrill, A.L. and **Baker D.L.**, (2010) Autotaxin Inhibitors: A Perspective on Initial Medicinal Chemistry Efforts. *Expert. Opin. Ther. Pat.* **20**: 1619-1625.
29. Gupte, R., Siddam, A., Li, W., Fujiwara, Y., Panupinthu, N., Pahm, T.C., **Baker, D.L.**, Parrill, A.L., Gotoh, M.m Murakami-Murofushi, K., Kobayashi, S., Mills, G.B., Tigyi, G, and Miller, D.D., (2010) Synthesis and Pharmacological Evaluation of the Stereoisomers of 3-Carba Cyclic-Phosphatidic Acid. *Bioorg. Med. Chem. Lett.* **20**: 7525-7528.
30. Gupte, R., Patil, R., Liu, J., Wang, Y., Lee, S.C., Fujiwara, Y., Fells, J., Bolen, A.L., Emmons-Thompson, K., Yates, C.R., Siddam, A., Panupinthu, N., Pham, T.C., **Baker, D.L.**, Parrill, A.L., Mills, G.B., Tigyi, G., and Miller, D.D., (2011) Benzyl and Naphthalene-Methyl Phosphonic Acid Inhibitors of Autotaxin with Anti-invasive and Anti-metastatic Actions, *Chem. Med. Chem.* 6: 922-935.
31. Bolen, A.L., Naren, A.P., Yarlagadda, S., Beranova-Giorgianni, S., Chen, L., Norman, D.D., **Baker, D.L.**, Rowland, M.M., Best, M.D., Sano, T., Tsukahara, T., Liliom, K., Igarashi, Y. and Tigyi, G., (2011) The Phospholipase A_1 Activity of Lysophospholipase A-1 Links Platelet Activation to LPA Production During Blood Clotting. *J. Lipid Res.* **52:** 958-970.
32. Parrill A.L., Wanjala I.W., Pham T.C., and **Baker D.L.**, (2011) Computational identification and experimental characterization of substrate binding determinants of nucleotide pyrophosphatase/phosphodiesterase 7. *BMC Biochem.* **12**:65.
33. Mize C.D., Abbott A.M., Gacasan S.B., Parrill A.L., **Baker D.L.**, (2011) Ligand-based autotaxin pharmacophore models reflect structure-based docking results. *J Mol Graph Model.* **31**:76-86.
34. Singh W.M., Baine T., Kudo S., Tian S., Ma X.A., Zhou H., Deyonker N.J., Pham T.C., Bollinger J.C., **Baker D.L.**, Yan B., Webster C.E., Zhao X., (2012) Electrocatalytic and Photocatalytic Hydrogen Production in Aqueous Solution by a Molecular Cobalt Complex. *Angew. Chem. Int. Ed. Engl.* 51(24):5941-4.
35. Ren, F., Bhana, S., Norman, D., Johnson, J., Xu, L., **Baker, D.**, Parrill, A., and Huang, X., (2013) Gold Nanorods Carrying Paclitaxel for Photothermal - Chemotherapy of Cancer, *Bioconjugate Chem.*, 24(3), 376-386.

36. **Baker D.L.**, Pham T.C., and Sparks M.A., (2013) Structure and Catalytic Function of Sphingosine Kinases: Analysis by Site-Directed Mutagenesis and Enzyme Kinetics, *Biochim Biophys Acta.*, 1831(1), 139-46.
37. Fells, J.I., Lee, S.C., Fujiwara, Y., Norman, D.D., Lim, K.G., Tsukahara, R., Liu, J., Patil, R., Miller, D.D., Kirby, R.J., Nelson, S., Seibel, W., Papoian, R., Parrill, A.L., **Baker, D.L.**, Bittman, R., and Tigyi, G., (2013) Hits of a High-Throughput Screen Identify the Hydrophobic Pocket of Autotaxin/Lysophospholipase D as an Inhibitory Surface, *Mol. Pharmacol.*, 84(3), 415-424.
38. Norman, D.D., Ibezim, A., Scott, W.E., White, S., Parrill, A.L., and **Baker, D.L.**, (2013) Autotaxin Inhibition: Development and Application of Computational Tools to Identify Site-Selective Lead Compounds, *Bioorg. & Med. Chem.*, 21(17), 5548-5560.
39. Fells, J.I., Lee, S.C., Norman, D.D., Tsukahara, R., Kirby, J.R., Nelsen, S., Seibel, W., Papoian, R., Patil, R., Miller, D.D., Parrill, A.L., Pham, T., **Baker, D.L.**, Bittman, R. and Tigyi, G., (2014) Targeting the Hydrophobic Pocket of Autotaxin with Virtual Screening of Inhibitors Identifies a Common Aromatic Sulfonamide Structural Motif, *FEBS J.*, 281(4), 1017-1028.
40. Ragle, L.E., **Baker, D.L.**, and Parrill, A.L., (2016) Structure-activity relationships of autotaxin inhibition. *Current Topics in Biochemical Research*, **17**, 1-18.
41. Ragle, L.E., Palanisamy, D.J., Joe, M.J., Stein, R.S., Norman, D.D., Tigyi, G., **Baker, D.L.**, and Parrill, A.L., (2016) Discovery and synthetic optimization of a novel scaffold for hydrophobic tunnel-targeted autotxain inhbition, Bioorg. & Med. Chem., 24(19), 4660-74.
42. Banerjee S., Norman D.D., Lee S.C., Parrill A.L., Pham T.C., **Baker D.L.**, Tigyi G.J., and Miller D.D. (2017) Highly Potent Non-Carboxylic Acid Autotaxin Inhibitors Reduce Melanoma Metastasis and Chemotherapeutic Resistance of Breast Cancer Cells, J Med. Chem. 60 (4), 1309-1324.
43. Gacasan, S., **Baker, D.L.**, and Parrill, A.L., (2017) G Protein-Coupled Receptors: The Evolution of Structural Insight, AIMS Biophysics, 4(3): 491-527.
44. Castleman, P.N., Sears, C.K., Cole, J.A., **Baker, D.L.**, and Parrill, A.L., (2019) GPCR Homology Model Template Selection Benchmarking: Global Versus Local Similarity Measures. J. Mol. Graph. & Model. 86:235-246.
45. Wink, L, H., Cole J.A., **Baker, D.L.**, and Parrill, A.L., (2019) A Benchmark Study of Loop Modeling Methods Applied to G Protein-Coupled Receptors. J. Computer-Aided Mol. Design 33:573-595.
46. Szwabowski, G.L., Castleman, P.N., Sears, C.K., Wink, L.H., Cole, J. A., **Baker, D.L.**, and Parrill, A.L., (2020) Benchmarking GPCR Homology Model Template Selection in Combination with De Novo Loop Generation. J. Computer-Aided Mol. Design, 34:1027-1044.
47. Harrison, Z. L., Bumgardner, J.D., Fujiwara, T., **Baker, D.L.**, and Jennings, J.A., (2021) In Vitro Evaluation of Loaded Chitosan Membranes for Pain Relief and Infection Control. *J. Biomed. Mater Res*. 1-9.
48. Harrison, Z.L., Awais, R., Harris, M.A., Raji, B., Hoffman, B.C., **Baker, D.L.**, and Jessica A. Jennings, J.A., (2021) 2-Heptylcyclopropane-1-Carboxylic acid Disperses and Inhibits Bacterial Biofilms. *Front. Microbiol.* 12, 645180.

49. Wells, C.M., Coleman, E.C., Yeasmin, R., Harrison, Z.L., Kurkula, M., **Baker, D.L.**, Bumgardner, J.D., Fujiwara, T., and Jennings, J.A., (2021) Synthesis and Characterization of 2-Decenoic Acid Modified Chitosan for Infection Prevention and Tissue Engineering. *Marine Drugs*, 19, 556.
50. Castleman, P., Szwabowski, G. Bowman, D., Cole, J.A., Parrill, A.L., and **Baker, D.L.**, (2022) Ligand-Based G Protein Coupled Receptor Pharmacophore Modeling: Assessing the Role of Ligand Function in Model Development, *J. Computer-Aided Mol. Design* 111, 108107.
51. Thomas, B.N, Parrill, A.L., and **Baker, D.L.**, (2022) Self-docking and Cross-docking Simulations of G Protein-Coupled Receptor-Ligand Complexes: Impact of Ligand Type and Receptor Activation State, *J. Computer-Aided Mol. Design* 112, 198119.

Refereed Conference Publications

1. Liebler, D.C., and **Baker, D.L.** (1998) Reactions of Beta-carotene with cigarette smoke: is b-carotene a prooxidant or an antioxidant? In *Biological Oxidants and Antioxidants: Molecular Mechanisms and Health Effects*, (Packer, L. ed), pp. 65-71, AOCS Press, Champaign, IL
2. Tigyi, G., Fischer, D.J., **Baker, D.,** Wang, D., Yue, J., Nusser, N., Virag, T., Zsiros, V., Liliom, K., Miller, D. and Parrill, A. (2000) Pharmacological characterization of phospholipid growth-factor receptors. In *Lysophospholipids and Eicosanoids in Biology and Pathophysiology* (Goetzl, E.J. and Lynch, K.R., eds) Vol. 905, pp. 34-53, New York Academy of Sciences, New York
3. Parrill, A. L., **Baker, D.L.,** Wang, D., Fischer, D.J., Bautista, D.L., Van Brocklyn, J., Spiegel, S. and Tigyi, G., Structural features of EDG1 receptor-ligand complexes revealed by computational modeling and mutagenesis. In *Lysophospholipids and Eicosanoids in Biology and Pathophysiology*, (Goetzl, E.J. and Lynch, K.R., eds) Vol. 905, pp. 330-339 New York Academy of Sciences, New York
4. **Baker, D.L.,** Umstodt, E.S., Desiderio, D.M., and Tigyi, G.J., Quantitative analysis of lysophosphatidic acid in human blood fractions. In *Lysophospholipids and Eicosanoids in Biology and Pathophysiology*, (Goetzl, E.J. and Lynch, K.R., eds) Vol. 905, pp. 267-269 New York Academy of Sciences, New York

Non-Refereed Publications

1. Parrill, A. L. and **Baker, D. L.**, Provisional patent application 61/002,687 "Method for the Identification of Compounds Used in the Treatment of Certain Tumors Using Autotaxin Inhibitors as Chemotherapeutic Compounds and the Method of Treating Tumors Using Those Compounds", provisional filing date 11/13/2007, patent filing date 11/13/2008.
2. Parrill, A.L., **Baker, D.L.**, and Montedonico, L. Provisional patent application 61/102,723 "Mechanism-Based Inactivators of Autotaxin", provisional filing date 10/3/2008.
3. Parrill, A., **Baker, D.L.**, and North, E.J., Provisional patent application 61/221,969, "Autotaxin Inhibitor Pharmacophore Method", provisional filing date 6/30/2009.

4. Parrill, A., **Baker, D.L.**, North E.J., Provisional patent application 61/222,022, "Novel Diverse Lead Compound Autotaxin Inhibitors", provisional filing date 6/30/2009.
5. Miller, D.D., Tigyi, G., Dalton, J.T., Sardar, V.M., Elrod, D.B., Xu, H., **Baker, D.L.**, Wand, D., Lilliom, K., Fischer, D.J., Virag, T., Nusser, N., LPA Receptor Agonists and Antagonists and Methods of Use", US patent #6,875,757, 4/5/2005.
6. Parrill, A.L., **Baker, D.L.**, and Montedonico, L., "Mechanism-Based Inactivators of Autotaxin", US Patent #8,022,239, issued 9/20/2011.
7. Parrill-Baker, A.L., and **Baker, D.L.**, "Autotaxin Inhibitors", US Patent #8,268,891, 9/18/2012.
8. Parrill, A.L., **Baker, D.L.**, and North, E.J. "Novel Diverse Lead Compound Autotaxin Inhibitors", US Patent #8,343,934, 1/1/2013.
9. Parrill, A.L., **Baker, D.L.**, and Hoeglund, A., "Pipemidic Acid Derivative Autotaxin Inhibitors", US Patent #8,487,371, 7/30/2013.
10. Jennings, J.A., **Baker, D.L.**, Awais, R. Harrison, Z., and Raji, B., Controlling Biofilms with Cyclopropanated Fatty Acids. US Patent #11,311,506, 4/26/2022.

Other Presentations (refereed *)

1. **Baker, D.L.** and Liebler, D.C., Direct analysis of lipid peroxidation products by GC/ECD. 33rd Society of Toxicology Meeting, **1994**.
2. **Baker, D.L.** and Liebler, D.C., Cigarette smoke oxidation of b-carotene: isolation and characterization of nitro-b-carotene. 14th Mountain West Society of Toxicology Meeting, **1996**.
3. **Baker, D.L.,** Rael, L.T., and Liebler, D.C., Interactions between b-carotene and cigarette smoke in vitro. 87th American Association for Cancer Research Meeting, **1996**.
4. **Baker, D.L.** and Liebler, D.C., Cigarette smoke oxidation of b-carotene in model systems. 88th American Association for Cancer Research Meeting, **1997**.
5. Liebler, D.C. and **Baker, D.L.,** Antioxidant and prooxidant interactions of b-carotene with cigarette smoke. 36th Society of Toxicology Meeting, **1997.**
6. **Baker, D.L.** and Tigyi, G.J., Analysis of gylcerol-3-phosphates in human serum by electrospray ionization mass spectrometry. 33rd Southeastern Regional Lipid Conference, **1998.**
7. Parrill, A.L., **Baker, D.L.,** Wang, D., Fischer, D.J., van Brocklyn, J., Spiegel, S., and Tigyi, G.J., Structural features of EDG-1 receptor-ligand complexes revealed by computational modeling and mutagenesis. New York Academy of Sciences Conference on Lysophospholipids and Eicosinoids in Cancer and Neurodegenerative Diseases, **1999**.
8. **Baker, D.L.,** Umstodt, E.S., Desiderio, D.M., and Tigyi, G.J., Quantitative analysis of lysophosphatidic acid in human blood fractions. New York Academy of Sciences Conference on Lysophospholipids and Eicosinoids in Cancer and Neurodegenerative Diseases, **1999**.
9. Bautista, D.L., **Baker, D.L.,** Lorincz, Z., Wang, D., Fischer, D.J., van Brocklyn, J., Spiegel, S., Tigyi, G.J., and Parrill, A.L., Dynamic modeling of EDG1 receptor structural changes induced by site-directed mutations. 219th American Chemical Society Meeting, **2000**.

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11. Bautista, D., Fischer, D., Nusser, N., Virag, T., Wang, D., **Baker, D.,** Tigyi, G, and Parrill, A., Computational studies of a lysophosphatidic acid receptor antagonist. FASEB Summer Research Conference: Lysophospholipids and Related Bioactive Lipids in Biology and Disease, **2001**.
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13. Rother, E., Brandl, R., **Baker, D.L.,** Tigyi, G., and Siess, W., Subtype-selective antagonists of lysophosphatidic acid receptors inhibit platelet shape change induced by mildly oxidized LDL and the lipid core of atherscleroticplaques. American Heart Association Meeting, **2002**.
14. Zhang, C., **Baker, D.L.,** Johnson, L.R., Balazs, L., McIntyre, T.M., Xu, Y., Prestwich, G.D., and Tigyi, G., Lysophosphatidic acid induced neointima formation. FASEB Summer Research Conference: Lysophospholipids and Related Bioactive Lipids in Biology and Disease, **2003**.
15. **Baker, D.,** Cseh, S., Lu, X., Byun, H., Bittman, R., and Tigyi G., Sphingosine-1-phosphate photoaffinity labels: synthesis, characterization, and application. FASEB Summer Research Conference: Lysophospholipids and Related Bioactive Lipids in Biology and Disease, **2003**.
16. Lu, X., Cseh, S., **Baker, D.L.,** Byun, H., Tigyi, G, and Bittman, R., Photoactivatable analogues of sphingosine-1-phosphate: synthesis and binding protein targets. 226th American Chemical Society Meeting, **2003**.
17. Sardar, V., Yuan, H., Allison, P., Chea, S., Kaminsky, J., Tsukahara, T., Tsukahara, R., Yasuda, S., Fujiwara, Y., **Baker, D.L.,** Tigyi, G., and Parrill, A.L., Molecular insights into lysophosphatidic acid receptor agonism. BioScience2005, **2005**.
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19. **Baker, D.L.,** Pigg, K.R., Tsukahara, R., Tigyi, G., Parrill, A.L., Li, Z. and Bittman, R., Synthesis, evaluation and application of benzophenone analogs of lysophosphatidic acid and alkyl glycerophosphate. FASEB Summer Research Conference: Lysophospholipid Mediators in Health and Disease, **2005.**
20. Howard, A.L., **Baker, D.L.**, and Parrill, A.L., Spectroscopic and Functional Characterization of Human NPP6. FASEB Summer Research Conference: Lysophospholipid Mediators in Health and Disease, **2007**.
21. North, E.J., **Baker, D.L.**, and Parrill, A.L., Synthesis and Evaluation of LPC Analogues for Autotaxin Substrate Characterization. FASEB Summer Research Conference: Lysophospholipid Mediators in Health and Disease, **2007**.

22. Tsukahara, T., Tsukahara, R., Cheng, Y.-H., Zhang, C., Balazs, L., Du, G., Frohman, M.A., **Baker, D.L.**, Parrill, A.L., and Tigyi, G., Cyclic Phosphatidic Acid is a Novel Second Messenger and Negative Regulator of the Nuclear Hormone Receptor PPAR-gamma. FASEB Summer Research Conference: Lysophospholipid Mediators in Health and Disease, **2007**.
23. Fujiwara Y., **Baker D.L.**, Uchiyama A., Mukai M., Pigg K.R., Tsukahara R., Kobayashi S., Murofushi H., Koh E., Bandle R.W., Byun H.S., Bittman R., Fan D., Murph M., Mills G.B., Kawai N., Inoue M., Enoki S., Tanaka Y., Niki T., Kobayashi T., Murakami-Murofushi K., Tigyi G., Carba Analogs of Cyclic Phosphatidic Acid Inhibit Autotaxin Activity, Tumor Cell Migration, Invasion And Metastasis *In Vitro* And *Vivo.* FASEB Summer Research Conference: Lysophospholipid Mediators in Health and Disease, **2007**.
24. North, E.J., **Baker, D.L.** and Parrill, A.L., Synthesis and Evaluation of Lysophosphatidylcholine Analogs as Tools to Determine Crucial Autotaxin Substrate Characteristics. 59th Annual Southeast Regional Meeting of the American Chemical Society (SERMAS) **2007**.
25. Hoeglund, A.B., Parrill, A.L., and **Baker, D.L.**, Screening and Identification of New Classes of Autotaxin (ATX) Inhibitors by Computational Modeling. Keystone Symposia on Computer-Aided Drug Design, **2008**
26. North, E.J., **Baker, D.L.**, and Parrill, A.L., Autotaxin Structure Activity Relationships Identified through Lysophosphatidylcholine Analogs. 64th Annual Southwest Regional Meeting of the American Chemical Society, **2008**.
27. Howard-Shearer, A.L., **Baker, D.L.**, and Parrill, A.L., NPP6 Model Validation by Computational Docking and Mutagenesis. 64th Annual Southwest Regional Meeting of the American Chemical Society, **2008**.
28. North, E.J., **Baker, D.L.**, and Parrill, A.L., Virtual and Combinatorial Advances in the Identification of Bioavailable Autotaxin Inhibitors. 60th Annual Southeast Regional Meeting of the American Chemical Society, **2008**.
29. Howard-Shearer, A.L., **Baker, D.L.** and Parrill**,** A.L., Computational and Mutagenic Studies of NPP6. 60th Annual Southeast Regional Meeting of the American Chemical Society, **2008**.
30. Breland, D.C., **Baker, D.L.** , Parrill, A.L., and Webster, C.E., Computational Model Reveals Intermediate in Catalytic Mechanism of Xac Nucleotide Pyrophosphatase/ Phosphodiesterase. 60th Annual Southeast Regional Meeting of the American Chemical Society, **2008**.
31. Montedonico, L.E., Parrill, A.L., and **Baker, D.L.**, Design and Biological Evaluation of Mechanism-Based Autotaxin Inhibitors. 60th Annual Southeast Regional Meeting of the American Chemical Society, **2008**.
32. Wanjala, I., Parrill, A.L., and **Baker, D.L.**, Computational and Experimental Approaches for the Analysis of Alkaline Sphingomyelinase (Alk-SMase/NPP7). 60th Annual Southeast Regional Meeting of the American Chemical Society, **2008**.
33. Bearden, K. and **Baker, D.L.**, Absolute Quantitative Analysis of Lysophosphatidic Acid G Protein-Coupled Receptors by Liquid Chromatography-Mass Spectrometry. 60th Annual Southeast Regional Meeting of the American Chemical Society, **2008**.

34. Pham, T.T., Hoeglund, A., **Baker, D.L.**, and Parrill**,** A.L., Pharmacological Characterization of Candidate Drug-Like Autotaxin Inhibitors. 60th Annual Southeast Regional Meeting of the American Chemical Society, **2008**.
35. Pham, T.T., Parrill, A.L., and **Baker, D.L.**, New Insights into the Structure and Functions of the Beta Isoform of Autotaxin. FASEB Summer Research Conference: Lysophospholipid Mediators in Health and Disease, **2009**.
36. Hoeglund, A.B., Pham, T.T., Howard, A.L., Wanjala, I.W., Parrill, A.L., and **Baker, D.L.**, Pharmacological and Mechanistic Characterization of Non-Lipid Autotaxin Inhibitors. FASEB Summer Research Conference: Lysophospholipid Mediators in Health and Disease, **2009**.
37. Howard, A.L., Wanjala, I.W., Pham, T.T., Parrill, A.L., and **Baker, D.L.**, Experimental Characterization of Recombinant Lysophospholipase C (NPP6, NPP7) and Lysophospholipase D (NPP2) Enzymes. FASEB Summer Research Conference: Lysophospholipid Mediators in Health and Disease, **2009**.
38. North, E.J., Pham, T.T., **Baker, D.L.**, and Parrill, A.L., Pharmacophore Development and Application in the Identification of Drug-like Autotaxin Inhibitors. FASEB Summer Research Conference: Lysophospholipid Mediators in Health and Disease, **2009**.
39. Breland, D., Parrill, A.L., **Baker, D.L.**, and Webster, C.E., The Phosphoryl Transfer Mechanism in *Xac* Nucleotide Pyrophosphatase/ Phosphodiesterase: A Computational Study. 61st Annual Southeast Regional Meeting of the American Chemical Society, **2009**.
40. Parrill, A.L., North, E.J., Hoeglund, A., Bostic, H.E., Best, M.D., and **Baker, D.L.,** Discovering autotaxin inhibitors. Bioactive Lipids in Cancer, Inflammation and Related Diseases, 11th International Conference, **2009**.
41. Wanjala, I.W., Parrill, A.L., and **Baker, D.L.**, "Structural and Functional Characterization of Alkaline Sphingomyelinase (NPP7)", 38th Great Lakes Regional Meeting of the American Chemical Society, **2009**.
42. **Baker, D.L.**, Wanjala, I.W., Pham, T.C., Howard, A.L., Cox, J.J., and Parrill, A.L., Structural and Functional Analysis of Phospholipid-Specific Nucleotide Pyrophosphatase/ Phosphodiesterase Isoforms. Experimental Biology, **2010**.
43. Pham, T.C., Wanjala, I.W., Howard, A.L., Parrill, A.L., and **Baker, D.L.**, Insights into the structure and function of lipid preferring Nucleotide Pyrophosphotase Phosphodiesterase isoforms. Joint Meeting of the 66th Southwest and 62nd Southeast Regional American Chemical Societies, **2010**.
44. **Baker, D.L.**, Wanjala, I.W., and Parrill, A.L., Characterization of substrate specifying determinants of Nucleotide Pyrophosphatase Phosphodiesterase Seven. Joint Meeting of the 66th Southwest and 62nd Southeast Regional American Chemical Societies, **2010**.
45. Bearden, K., and **Baker, D.L.**, "Absolute Quantitative Analysis of Lipid Preferring Nucleotide Pyrophosphatase Phosphodiesterase Isoforms by Stable Isotope Dilution LC-MS", Joint Meeting of the 66th Southwest and 62nd Southeast Regional American Chemical Societies, **2010**.
46. Parrill, A.L., North, E.J., Hoeglund, A., Bostic, H., Best, M.D., and **Baker, D.L.**, "Computer-Aided Discovery of Autotaxin Inhibitors", 240th National Meeting of the American Chemical Society, **2010**.

47. Bolen, A.L., Naren, A.P., Yarlagadda, S., Beranova-Giorgianni, Chen, S.L., Norman, D.D., **Baker, D.L.**, Best, M.D., Rowland, M.M., Sano, T., Tsukahara, T., Liliom, K., Igarashi, Y., and Tigyi, G., The Phospholipase A1 Activity of Acyl-Protein Thioesterase Links Platelet Activation to LPA Production During Blood Clotting. Experimental Biology, **2011**.
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49. Parrill, A.L., Howard, A.L., Wanjala, I.W., and **Baker, D.L.**, Insights into substrate recognition and discrimination by the phospholipid-preferring Nucleotide Pyrophosphatase/Phosphodiesterase isoforms. 241st National Meeting of the American Chemical Society, **2011**.
50. **Baker, D.L.**, Mize, C., Abbott, A., and Parrill, A.L., Design and application of computational tools for the rational design and discovery of Autotaxin inhibitors. 241st National Meeting of the American Chemical Society, **2011**.
51. Pham, T.C., Wanjala, I., Howard, A., Breland, D., DeYonker, N.J., Webster, C.E., Parrill, A.L., **Baker, D.L.**, "Characterizing the Structure and Function of Lipid Preferring Nucleotide Pyrophosphase Phosphodiesterases using Computational and Experimental Tools", 63rd Meeting of the Southeast Regional of the American Chemical Society, **2011**.
52. Sparks, M., Pham, T.C., **Baker, D.L.**, "Comparison of Multiple Expression Systems for the Study of Sphingosine Kinase 1", 63rd Meeting of the Southeast Regional of the American Chemical Society, **2011**.
53. Norman, D.D., Scott, W.E., White, S., Ibezim, A., Parrill, A.L., **Baker, D.L.**, "ATX Inhibition: Development of Computational Tools to Identify Hydrophobic Tunnel Targeted Leads", 63rd Meeting of the Southeast Regional of the American Chemical Society, **2011**.
54. Mize, C.D., Abbott, A.M., Gacasan, S.B., Parrill, A.L., **Baker, D.L.**, "Ligand-Based Autotaxin Pharmacophore Models Reflect Structure-Based Docking Results", 63rd Meeting of the Southeast Regional of the American Chemical Society, **2011**.
55. Sparks, M.A., Pham, T.C., **Baker, D.L.**," Functional Analysis of Sphingosine Kinase 1", 68th Meeting of Southwest Regional American Chemical Society, **2012**.
56. Ragle, L.E., **Baker, D.L.**, Parrill, A.L., Structure-based Pharmacophore Development for Hydrophobic Autotaxin Inhibition", 68th Meeting of Southwest Regional American Chemical Society, **2012**.
57. Scott, W.E., and **Baker, D.L.**, "Enzymatic Analysis of the LPLD vs. LPLC Activity of Autotaxin", 68th Meeting of Southwest Regional American Chemical Society, **2012**.
58. **Baker, D.L.**, Norman, D.D., Ibezim, A., Scott, W.E., White, S., Parrill, A.L., "Autotaxin Inhibition: Development of Computational Tools to Identify Site-Selective Leads", 68th Meeting of Southwest Regional American Chemical Society, **2012**.
59. Pham, T.C., Sparks, M.A., **Baker, D.L.**, "Sphingosine Kinase 1: Insights into Structure and Function", 64th Meeting of the Southeast Regional American Chemical Society, **2012**.

60. **Baker, D.L.**, Pham, T.C., and Sparks, M.A., "Examination of the Structure and Function of Sphingosine Kinase 1", 245th National Meeting of the American Chemical Society, **2013**.
61. **Baker, D.L.**, "Implementation of a Hybrid, Reverse-Instruction Model in CHEM 3511, Foundations of Bioorganic Chemistry", 245th National Meeting of the American Chemical Society, **2013**.
62. Pham, T.T. and **Baker, D.L.**, Functional Analysis of Diacylglycerol Kinase-Beta, 66th Meeting of the Southeast Regional American Chemical Society, **2014**.
63. Ragle, L.E., Palanisamy, D.J., **Baker, D.L.**, and Parrill, A.L., Synthetic Optimization of a Novel Scaffold for Hydrophobic Tunnel-Targeted Autotaxin Inhibition. 66th Meeting of the Southeast Regional American Chemical Society, **2014**.
64. McDonald, J.W., Raji, B.A., Parrill, A.L., and **Baker, D.L.**, Computational Discovery and Synthesis of Novel Fluorogenic Substrate(s) for Sphingosine Kinase 1: An Approach to High-Throughput Assay Development, 66th Meeting of the Southeast Regional American Chemical Society, **2014**.
65. Pham, T.C., Gacasan, S., and **Baker, D.L.**, "Analysis of the Bisubstrate Kinetics of Sphingosine Kinase-1 Inhibitors", Joint Meeting of the 71stSouthwest and 67th Southeast Regional American Chemical Societies, **2015**.
66. Pham, T.C. and **Baker, D.L.**, "Analysis of Site Directed Mutants of Diacylglycerol Kinase-Beta by LC-MS/MS and Bisubstrate Kinetics", Joint Meeting of the 71stSouthwest and 67th Southeast Regional American Chemical Societies, **2015**.
67. Pham, T.C. and **Baker, D.L.**, "Analysis of Site-Directed Mutants of Sphingosine Kinase-1 by LC-MS/MS and Bisubstrate Kinetics", Joint Meeting of the 71stSouthwest and 67th Southeast Regional American Chemical Societies, **2015**.
68. Ragle, L. **Baker, D.,** and Parrill-Baker, A. "Expanded Structure-Activity Relationship Analysis of Small Molecule Autotaxin Inhibitors", Joint Meeting of the 71stSouthwest and 67th Southeast Regional American Chemical Societies, **2015**.
69. Yarbro, J.M., Fathi, E., Ziebarth, J.D., Gacasan,S.B., **Baker, D.L.**, Parrill,A.L., and Homayouni, R., "Characterization of APP and NAD(P)H Interactions with Nipsnap1, a Novel Mitochondrial Protein", Alzheimer's Association International Conference, **2018**.
70. Castleman, P.N., Cole, J.A., **Baker, D.L.**, and Parrill, A.L., "Homology Model Template Selection Benchmarking: Global Versus Local Similarity Measures", National Meeting of the American Chemical Society, **2018**.
71. Castleman, P.N., Cole, J.A., **Baker, D.L.**, and Parrill, A.L., "Homology Model Template Selection Benchmarking: Global Versus Local Similarity Measures", 74th Annual Meeting of the Southwest Region of the American Chemical Society, **2018**.
72. Sears, C.K., Parrill, A.L., and **Baker, D.L.**, "Development of a G Protein-Coupled Receptor Deorphanization Protocol: Application to GPR37L1", 74th Annual Meeting of the Southwest Region of the American Chemical Society, **2018**.
73. Awais, R., Harrison, Z., Raji, B., Murali, V., Bumgardner, J., **Baker, D.**, and Jennings, J., "Cis-2-Decenoic Acid Loaded into Acylated Chitosan Membranes Inhibit Bacterial Biofilms", 8th Annual Meeting of the American Society for Microbiology Biofilms Conference, **2018**.
74. Harrison, Z., Awais, R., Raji, B., **Baker, D.**, Jennings, J., "Cyclopropyl Analog of Cis-2-Decenoic Acid Inhibits and Disperses S. aureus Biofilm", Annual Meeting of the Orthopaedic Research Society, **2019**.

75. Awais, R., Harrison, Z., Raji, B., Murali, V., Bumgardner, J., **Baker, D.**, Jennings, J., "2-Heptylcyclopropane-1-Carboxylic Acid Loaded Acylcated Chitosan Membranes Inhibit Bacterial Biofilms", Annual Meeting of the Society for Biomaterials, **2019**.
76. Castleman, Paige N.; Szwabowski, Gregory L.; **Baker, D.L.**; Parrill, Abby L. "Pharmacophore benchmarking: The role of ligand function in pharmacophore development." 2019 Southeast Regional Meeting of the American Chemical Society. Savannah, GA. **2019**.
77. Szwabowski, G.L.; Castleman, P.N.; Sears, C.K.; Wink, L.H.; Cole, J.A.; **Baker, D.L.**; Parrill, A.L. "Benchmarking GPCR homology model template selection in combination with de novo loop generation", 2019 Southeastern Regional Meeting of the American Chemical Society, **2019**.
78. Awais, R.; Harrison, Z.L.; Raji, B.; Murali, V.P.; Bumgardner, J.D.; **Baker, D.L.**; Jennings, J.A. "2-Heptylcyclopropane -1-carboxylic acid loaded acylated chitosan membranes inhibit bacterial biofilms." Society for Biomaterials Annual Meeting, Seattle, WA. **2019**.
79. Harrison, Z.L.; Awais, R.; Raji, B.; **Baker, D.L.**; Jennings, J.A. "Cyclopropyl analog of cis-2-decenoic acid inhibits and disperses S. aureus biofilm." Orthopaedic Research Society, Austin, TX. **2019**.
80. Hannie, K.D.; Parrill, A.L.; **Baker, D.L.**, "Computational and Experimental Filtering of Potential Therapeutics using ADMET Properties," 258th American Chemical Society National Meeting and Exposition. San Diego, CA. August 26-28th, 2019.
81. Harrison, Z.L.; Awais, R.; Murali, V.P.; Bumgardner, J.D.; Fujiwara, T.; **Baker, D.L.**; Jennings, J.A. "Achieving wound coverage, infection prevention, and pain relief through acylated electrospun chitosan membranes " 9th International DoD State-of-the-Science Meeting: Burn Injury, Washington, DC, **2020**.
82. Harrison, Z.L.; Awais, R.; Murali, V.; Bumgardner, J.D.; Fujiwara, T.; **Baker, D.L.**; Jennings, J.A. "Acylated electrospun chitosan membranes for wound coverage, infection prevention, and pain relief." World Congress of Biomaterials, Glasgow Scotland, **2020**.
83. Castleman, P.N.; Szwabowski, G.L.; Bowman, D.; Cole, J.A.; Parrill-Baker, A.L.; **Baker, D.L.**"Pharmacophore benchmarking: The role of ligand function in pharmacophore development." 2020 Rocky Mountain Regional Meeting of the American Chemical Society. November **2020**. **AWARD:** Division of Medicinal Chemistry Award for presentation.
84. Szwabowski, G.L.; Parrill, A.L.; **Baker, D.L.**, "Automated construction of fragment-based pharmacophores to elucidate novel GPCR ligands", Rocky Mountain Regional Meeting of the American Chemical Society, November, **2020**
85. Dyer, C.; Parrill, A.L.; **Baker, D.L.**, "Statistical Analysis of Protein-Protein Comparison Methods." Rocky Mountain Regional Meeting of the American Chemical Society, November, **2020**. **AWARD:** Stanley C. Israel Regional Award for Advancing Diversity in the Chemical Sciences
86. Hoffman, B. and **Baker, D.L.**, "Quantitative analysis of diffusible signaling factors using negative ion liquid chromatography electrospray ionization mass spectrometry (HPLCESI-MS)" Rocky Mountain Regional Meeting of the American Chemical Society, November, **2020**.

87. Wiley, E. R. and **Baker, D. L.**, “Modular synthesis and characterization of diffusible signal factor analogs for the study of structure activity relationships and mechanism of action.” Rocky Mountain Regional Meeting of the American Chemical Society. Virtual. November **2020**.
88. Thomas, B.N.; Parrill, A.L.; **Baker, D.L.,** “Self-docking and cross-docking simulations of G protein-coupled receptor-ligand complexes: analysis of ligand type and receptor activation state”, Rocky Mountain Regional Meeting of the American Chemical Society, November, **2020**.
89. Griffing, M.; **Baker, D.L.**; and Parrill, A.L., “Systematic Analysis of Ligand Binding Site Locations Within Crystalized GPCR Complexes”, Rocky Mountain Regional Meeting of the American Chemical Society, November, **2020**.
90. Ruddick, K.R.; Elayan, A.M.; Nelson, H.A.; Lashet, C.; Hanson, J.; Parrill, A.L.; Cole, J.A.; **Baker, D.L.**, "NanoLuc (NLuc) complementation assay elucidates role of specific G-proteins in GPR88 signaling" Experimental Biology National Meeting **2021**. **CHOSEN** for additional GPCR colloquium by ASPET, ASBMB, and APS.
91. Szwabowski, G.L.; Griffing, M.C.; Guerrero, M.; Ruddick, K.R.; Cole, J.A.; **Baker, D.L.**, Parrill A.L., “A Method of Automated Pharmacophore Model Generation Using Multiple Copy Simultaneous Search” National American Chemical Society Meeting, August 2021.
92. Orellana, K.*; Dyer, C.*; Parrill, A.L.; **Baker, D.L.**, “Statistical Analysis of Protein Similarity Measures?” National American Chemical Society Meeting, August **2021**.
93. Hoffman, B.*; Wiley*, E. R.; **Baker, D.L.**, “Synthesis and Quantitative Analysis of Diffusible Signal Factor Analogs as Antibiofilm Agents” National American Chemical Society Meeting, August **2021**.
94. Dyer, C.; Parrill, A.L.; **Baker, D.L.**, “Hydrophobic Surface Patch Disruption to Produce Water-Soluble G-Protein Coupled Receptor Analogs” Southeast Regional Meeting of the American Chemical Society, November **2021**.
95. Dyer, C.*; Orellana, K.*; Parrill, A.L.; **Baker, D.L.**, “Statistical Analysis of Protein Similarity Measures”, Southeast Regional Meeting of the American Chemical Society, November **2021**.
96. Szwabowski, G.L.; Parrill, A.L.; **Baker, D.L.**, “A method of automated, score-based pharmacophore generation using Multiple Copy Simultaneous Search” Southeast Regional Meeting of the American Chemical Society, November **2021**.
97. Szwabowski, G.L., Parrill, A.L., and **Baker, D.L.**, "A Method for Automated Pharmacophore Model Generation Using Multiple Copy Simultaneous Search". National Experimental Biology Meeting, April **2022**.
98. Hoffman, B. and **Baker D.L.**, “Quantitative analysis of fatty acid diffusible signaling factors by HPLC-ESI-MS” Southeast Regional Meeting of the American Chemical Society, November **2021**.
99. Wiley, E.R. and **Baker, D.L.**, “Synthesis and characterization of novel diffusible signal factor analogs for analysis of structure activity relationships” Southeast Regional Meeting of the American Chemical Society, November **2021**.
100. Szwabowski, G.L., Parrill, A.L., **Baker, D.L.**, "Automated, Score-Based Pharmacophore Generation Using Multiple Copy Simultaneous Search" National Experimental Biology Meeting, April **2022**.

101. Harrison, Z., Bush, J., Perez, F., Bumgardner, J., Fujiwara, T., **Baker, D.L.**, Jennings, J.A., "Silanized Titanium for Delivery of Hydrophobic Therapeutic in Aqueous Environments" Society for Biomaterials: Biomaterial Applications Meeting, October **2022**.
102. Coleman, E., Reaño, I.B., Wiley, E.R., **Baker, D.L.**, Jennings, J.A., "Hydroxyapatite Loaded with 2-Heptylcyclopropane-1-Carboxylic Acid Inhibits S. Aureus Biofilm Formation" Society for Biomaterials: Biomaterial Applications Meeting, October, **2022**.

SUPPORT

ACTIVITY	(EXTERNAL) AGENCY/SOURCE	AMOUNT	PERIOD
Scientist Development Grant "Lysophosphatidic Acid in Human Lipoproteins: Mechanism of Formation and Modulation of Atherogenic Potential" (PI)	American Heart Association	$263,000	July 2005 - June 2009
"MRI: Acquisition of a Liquid Chromatograph-Mass Spectrometer (LC-MS) for Research and Education"	National Science Foundation	$365,600	August 2006 - July 2009
"MPO and NO Signaling in Neointima" (subcontract)	National Institutes of Health	$23,287	August 2006 - July 2011
"MRI: Acquisition of a Spectropolarimeter for Research and Education" (Senior Personnel)	National Science Foundation	$137,000	August 2007 - July 2010
"Identification of ATX Inhibitors as Potential Cancer Chemotheraputic Leads" (Co-PI)	Elsa Pardee Foundation	$100,770	January 2008 - December 2008
"REU Site – Collaborative Chemistry Research At the University of Memphis" (Senior Personnel)	National Science Foundation	$220,229	Februrary 2009 - March 2011
"REU Site: University of Memphis Interdisciplinary Research in Chemistry" (Senior Personnel)	National Science Foundation	$270,000	September 2012 - August 2015
"MRI: Acquisition of a 400 MHz NMR Spectrometer" (Co-I)	National Science Foundation	$339,585	August 2015 - July 2018
"Corrdinated Regulation of MAP3K4 of Epigenetic Modifiers" (Co-I)	National Institutes of Health	$1,730,421	September 2015 - August 2020
"GPR88 Ligand Discovery" (Co-PI)	National Institutes of Health	$408,733	May 2016 - April 2019
Contract	RXBio, INC	$10,364	January 2016 - May 2016
Contract	RXBio, INC	$4,305	July 2016 - August 2016

Contract (Co-PI)	Maplight Therapeutics	$16,582	September 2020 - December 2020
"Acetylated Electrospun Biopolymer Membranes for Burn Wound Coverage, Infection Prevention, and Pain Relief" (Co-I)	Department of Defense, Military Burn Research program	$499,315	January 2020 - December 2021
“Development of acylated nanofibrous chitosan membranes for pre-hospital traumatic wound coverage, inhibition of infection, and pain mitigation” (Co-I)	Department of Defense, Peer Reviewed Medical Research Program	$286,156	November 2020 - October 2022

(INTERNAL)

ACTIVITY	AGENCY/SOURCE	AMOUNT	YEAR
Startup Funds	University of Memphis	$150,000	August 2006 - July 2008
Research Grant	FedEx Institute of Technology	$60,000	November 2009 - October 2010
Research Grant	FedEx Institute of Technology - Memphis Research Foundation	$100,000	January 2011 - December 2011
Research Grant	FedEx Institute of Technology	$18,750	January 2013 - June 2014
Faculty Research grant	University of Memphis	$6,000	January 2015 - December 2015
Discovery & Development Grant	FedEx Institute of Technology	$19,900	March 2017 - August 2018
Development & Discovery Grant	FedEx Institute of Technology	$20,000	July 2018 - June 2019
Aquisition of a Differential Scanning Fluorimeter	University of Memphis (College of Arts & Sciences)	$28,025	2019
Aquisition of an Isothermal Titration Calorimeter	University of Memphis (College of Arts & Sciences)	$100,884	2020
Aquisition of a Multimode Plate Reader with Liquid Dispensing Module	University of Memphis (College of Arts & Sciences)	$72,979	2019
Gap Funding	University of Memphis (Div of Research & Innovation)	$20,000	February 2020 - June 2020

SERVICE

UNIVERSITY	COMMITTEE/ACTIVITY	YEAR
University of Memphis	Graduate Studies Committee (Dept. of Chemistry)	2006 - 2015, 2019 - current
University of Memphis	University Radiation Safety Committee	2006 - current

University of Memphis	Undergraduate Research Conference Coordinator	2008 - 2014
University of Memphis	Tenure & Promotion Committee (College of Arts & Sciences)	2012 - 2014, 2018-2019
University of Memphis	Chair - Tenure & Promotion Committee (Dept. of Chemistry)	2014, 2018 - 2019
University of Memphis	Chair - Tenure & Promotion Committee (College of Arts & Sciences)	2014
University of Memphis	Graduate Coordinator (Dept. of Chemistry)	2014, 2019 - current
University of Memphis	Undergraduate Studies Committee	2016 - 2019
University of Memphis	NSF GRFP Fellowship Coordinator	2018 - 2020