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Area of Expertise

The Emmitte laboratory employs multiple types of medicinal chemistry strategies to design, synthesize, and optimize biologically active small molecules to serve as in vivo probes, drug discovery leads, and optimized preclinical compounds. Research in the Emmitte laboratory is highly collaborative and works on several different types of drug target classes across several therapeutic areas.

Qualifications

BS in Chemistry, Texas A & M University

PhD in Organic Chemistry, University of North Carolina at Chapel Hill

Recent Publications

Highly Selective γ_4 Receptor Antagonist Binds in an Allosteric Binding Pocket

Schüß, C., Vu, O., Schubert, M., Du, Y., Mishra, N. M., Tough, I. R., Stichel, J., Weaver, C. D., Emmitte, K. A., Cox, H. M., Meiler, J. & Beck-Sickinger, A. G., 11 Mar 2021, In: Journal of Medicinal Chemistry. 64, 5, p. 2801-2814 14 p.

Negative allosteric modulators of group II metabotropic glutamate receptors: A patent review (2015–present)

Qunies, A. M. & Emmitte, K. A., 2021, In: Expert Opinion on Therapeutic Patents. 31, 8, p. 687-708 22 p.

VU0606170, a Selective Slack Channels Inhibitor, Decreases Calcium Oscillations in Cultured Cortical Neurons

Spitznagel, B. D., Mishra, N. M., Qunies, A. M., Prael, F. J., Du, Y., Kozek, K. A., Lazarenko, R. M., Denton, J. S., Emmitte, K. A. & Weaver, C. D., 4 Nov 2020, In: ACS Chemical Neuroscience. 11, 21, p. 3658-3671 14 p.

Discovery of Novel Central Nervous System Penetrant Metabotropic Glutamate Receptor Subtype 2 (mGlu₂) Negative Allosteric Modulators (NAMs) Based on Functionalized Pyrazolo[1,5-*a*]pyrimidine-5-carboxamide and Thieno[3,2-*b*]pyridine-5-carboxamide Cores

Childress, E. S., Wieting, J. M., Felts, A. S., Breiner, M. M., Long, M. F., Luscombe, V. B., Rodriguez, A. L., Cho, H. P., Blobaum, A. L., Niswender, C. M., Emmitte, K. A., Conn, P. J. & Lindsley, C. W., 1 Oct 2019, In: Journal of Medicinal Chemistry. 62, 1, p. 378-384 7 p.

Discovery of Tricyclic Triazolo- and Imidazopyridine Lactams as M₁ Positive Allosteric Modulators

Engers, J. L., Bender, A. M., Kalbfleisch, J. J., Cho, H. P., Lingenfelter, K. S., Luscombe, V. B., Han, C., Melancon, B. J., Blobaum, A. L., Dickerson, J. W., Rook, J. M., Niswender, C. M., Emmitte, K. A., Conn, P. J. & Lindsley, C. W., 20 Mar 2019, In: ACS Chemical Neuroscience. 10, 3, p. 1035-1042 8 p.

Discovery of VU2957 (Valigluxax): An mGlu₄ Positive Allosteric Modulator Evaluated as a Preclinical Candidate for the Treatment of Parkinson's Disease

Panarese, J. D., Engers, D. W., Wu, Y. J., Bronson, J. J., Macor, J. E., Chun, A., Rodriguez, A. L., Felts, A. S., Engers, J. L., Loch, M. T., Emmitte, K. A., Castelhan, A. L., Kates, M. J., Nader, M. A., Jones, C. K., Blobaum, A. L., Conn, P. J., Niswender, C. M., Hopkins, C. R. & Lindsley, C. W., 14 Mar 2019, In: ACS Medicinal Chemistry Letters. 10, 3, p. 255-260 6 p.

The discovery of VU0652957 (VU2957, Valigluxax): SAR and DMPK challenges en route to an mGlu₄ PAM development candidate

Panarese, J. D., Engers, D. W., Wu, Y. J., Guernon, J. M., Chun, A., Grego, A. R., Bender, A. M., Capstick, R. A., Wieting, J. M., Bronson, J. J., Macor, J. E., Westphal, R., Soars, M., Engers, J. E., Felts, A. S., Rodriguez, A. L., Emmitte, K. A., Jones, C. K., Blobaum, A. L., Jeffrey Conn, P. & 3 others, Niswender, C. M., Hopkins, C. R. & Lindsley, C. W., 15 Jan 2019, In: Bioorganic and Medicinal Chemistry Letters. 29, 2, p. 342-346 5 p.

Discovery of 4-alkoxy-6-methylpicolinamide negative allosteric modulators of metabotropic glutamate receptor subtype 5
Felts, A. S., Bollinger, K. A., Brassard, C. J., Rodriguez, A. L., Morrison, R. D., Scott Daniels, J., Blobaum, A. L., Niswender, C. M., Jones, C. K., Jeffrey Conn, P., Emmitte, K. A. & Lindsley, C. W., 1 Jan 2019, In: Bioorganic and Medicinal Chemistry Letters. 29, 1, p. 47-50 4 p.

Stress and interferon signalling-mediated apoptosis contributes to pleiotropic anticancer responses induced by targeting NGLY1

Zolekar, A., Lin, V. J. T., Mishra, N. M., Ho, Y. Y., Hayatshahi, H. S., Parab, A., Sampat, R., Liao, X., Hoffmann, P., Liu, J., Emmitte, K. A. & Wang, Y. C., 11 Dec 2018, In: British Journal of Cancer. 119, 12, p. 1538-1551 14 p.

Discovery of 6-(pyrimidin-5-ylmethyl)quinoline-8-carboxamide negative allosteric modulators of metabotropic glutamate receptor subtype 5

Felts, A. S., Rodriguez, A. L., Morrison, R. D., Blobaum, A. L., Byers, F. W., Daniels, J. S., Niswender, C. M., Conn, P. J., Lindsley, C. W. & Emmitte, K. A., 1 Jun 2018, In: Bioorganic and Medicinal Chemistry Letters. 28, 10, p. 1679-1685 7 p.

Sponsored Projects

Administrative Core

Emmitte, K., LINDSLEY, C., LINDSLEY, C., Meiler, J., DANIELS, J. S., Meiler, J., DANIELS, J. S., EMMITTE, K. A., LINDSLEY, C. & Meiler, J.

National Institute of Mental Health

1/07/08 → 31/05/15

Design and Characterization of Novel Sodium 4-Phenylbutyrate (Pba) Analogs for Reduction of Myocilin Misfolding and the Treatment Of Primary Open Angle Glaucoma

Zode, G. & Emmitte, K.

Intramural Research(UNTHSC)

1/09/16 → 28/02/18

Design and Characterization of Novel Sodium 4-Phenylbutyrate (Pba) Analogs for Reduction of Myocilin Misfolding and the Treatment Of Primary Open Angle Glaucoma

Emmitte, K. & Zode, G.

Intramural Research(UNTHSC)

1/09/16 → 28/02/18

Discovery and Optimization of Selective Negative Allosteric Modulators of mGluR3

Emmitte, K., CONN, J. & EMMITTE, K. A.

National Institute of Mental Health

18/09/12 → 31/08/15

Discovery and Optimization of Selective Negative Allosteric Modulators of mGluR3

Emmitte, K. & CONN, J.

18/09/12 → 31/08/15

Discovery of small molecule activators of the Slack potassium channel for use as cell-based probes for the study of fragile X syndrome

Emmitte, K. & WEAVER, D.

National Institute of Mental Health

1/12/20 → 31/10/21

Discovery of small molecule activators of the Slack potassium channel for use as cell-based probes for the study of fragile X syndrome

Emmitte, K., WEAVER, D., Emmitte, K. & WEAVER, C.

National Institute of Mental Health

1/12/20 → 31/10/22

Slack Potassium Channel Inhibitors for the Treatment of Childhood Epilepsies

Emmitte, K.
Vanderbilt University
15/12/18 → 30/11/19

Slack Potassium Channel Inhibitors for the Treatment of Childhood Epilepsies

Emmitte, K., WEAVER, D., WEAVER, D. & EMMITTE, K.
National Institute of Neurological Disorders and Stroke
15/12/18 → 31/12/21

Slack Potassium Channel Inhibitors for the Treatment of Childhood Epilepsies

Emmitte, K. & WEAVER, D.
15/12/18 → 31/12/19

Slack Potassium Channel Inhibitors for the Treatment of Childhood Epilepsies

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National Institute of Neurological Disorders and Stroke
1/01/20 → 31/12/21