Anna "Paige" Newton Vinson
Curriculum Vitae

Home: 123 Generals Way Ct, Franklin TN 37064 | 615-426-1389 | paige.n.vinson@gmail.com
Office: 896 Preston Res Bldg, Nashville, TN 37232 | 615-322-0342 | paige.vinson@vanderbilt.edu

Education

B.S. | MAY 1992 | UNIVERSITY OF SOUTH ALABAMA
- Major: Chemistry (*Cum Laude*)
- Minor: Mathematics
- Guided research: Biophysical Chemistry of Hemoglobin, Mentor: Patrick Herrington, Ph.D.

PH.D. | MAY 1997 | EMORY UNIVERSITY
- Analytical Chemistry (with an emphasis in performing *in vivo* measurements of neurotransmitters)
- Thesis: *Application of Microdialysis and Rotating Disk Electrode Voltammetry to the Study of Neurotransmitter Dynamics*
- Mentor: Joseph B. Justice, Ph.D.

POSTDOCTORAL TRAINING | COMPLETED APRIL 2001 | EMORY UNIVERSITY
- Department of Biochemistry
- Development of expression and purification system for monoamine oxidase B (MAO B)
- Biophysical and emzymological characterization of MAO B
- Mentor: Dale Edmondson, Ph.D.

Academic Appointments and Professional Experience

RESEARCH SCIENTIST | VANDERBILT UNIVERSITY | JAN 2009 – OCT 2012
- Part of the Molecular Pharmacology team in the Vanderbilt Center for Neuroscience Drug Discovery
- Oversaw screening of compounds emerging from lead discovery programs including primary screening, secondary screening, and selectivity
- Responsible for the testing and tracking of *in vitro* potency, efficacy, and affinity that were used for decision-making during lead optimization and preclinical testing including within a collaborative program with Janssen Pharmaceutical.
- Trained research assistants in lab techniques and technologies

RESEARCH ASSISTANT PROFESSOR, DEPARTMENT OF BIOCHEMISTRY AUG 2013 – PRESENT
DIRECTOR, HIGH-THROUGHPUT SCREENING CORE NOV 2012 – PRESENT
VANDERBILT UNIVERSITY
- Day-to-day and long-term strategic planning of a university shared resource that includes customer support, yearly budgeting, capital expense planning, grant assistance, and staff supervision
- Led the selection, acquisition, and formatting of new small molecule collection in first year of position as director
- Identifies cost-reduction strategies that do not compromise work capacity or quality

- During 6.5 years as Director of HTS I have provided some level of support to over 55 grant applications including letters of support, grant content, and inclusion as key personnel; this includes four funded S10 shared instrumentation grants
- Serves as Vanderbilt University Lead Discovery representative for VUMC/Bayer collaborative partnership
- Works with offices across campus to establish core financial rates and uphold institutional policies
    - Office of Contract and Grants Accounting – core service rate development
    - Office of Sponsored Programs – external contracts for core services
    - Purchasing and Strategic Sourcing – contracts for outsourced services

PERSONAL SABBATICAL | MAY 2001 – MARCH 2004

- During this time, a full time position was not pursued to enable me to start a family
- Adjunct Professor, Belmont University: Taught Introduction to Physics to non-science majors during the Spring 2002 semester
- Science and Math Tutor, Hermitage Learning Center: Tutored high school students in math and science for general skill improvement from 2002 - 2004

APPLICATION SCIENTIST & PRODUCT MANAGER | THERMO FISHER SCIENTIFIC | APRIL 2004 – NOV 2008

- Responsibilities included
    - Specification of product functions and features
    - Market-based price determination of product portfolio
    - Presentation of product information to the market through written and oral presentations
    - Testing product hardware and software
    - Assisting with product documentation, training, selling, and support
    - Serving as a liaison between customers (scientists) and Thermo R&D (software and mechanical engineers).
- Key to the development of a software feature that imports datasets (chemicals, kit formulations, experiments) into the database – provided requirements and wrote user templates (including VBA macros) for the interface.
- Key to the development of a software feature that automatically implements a pH gradient in crystallization experiments – provided the scientific concept, formulas, testing, and training materials for this feature
- Developed a set of CrystalReports™ templates for generating experiment reports from the software database
- Several publications and presentations for customer education including a tutorial in Genetic and Engineering News, a Workshop at the 2007 Association of Laboratory Automation Conference, a podium talk at the 2006 Advances in Protein Crystallography Conference, Flash tutorials for customer software training, and 4 poster presentations at various conferences and symposiums.
- Direct contributor to the generation of $1.4M in product sales

Professional Memberships and Activities

- Member, planning committee for 1st and 2nd Annual VU/VUMC Shared Resource Retreat (2018 and 2019)

- Member, Vanderbilt Institute of Chemical Biology Operating Committee (2012 – present)
- Member, VICTR Accelerating Drug Repurposing Incubator (2016 – present)
- Technical Expert for NCATS HEAL proposal evaluation, Spring 2019
- Invited Speaker, 12th Compound and Sample Management Summit, Aug 30, 2016
- Member, Society for Laboratory Automation and Screening
- Member, The American Society for Pharmacology and Experimental Therapeutics (ASPET)

Teaching Activities

- Special Topics Lecturer, Vanderbilt Univ, Cell and Developmental Biology 8311, Fall 2018
- Special Topics Lecturer, Vanderbilt Univ, Biomedical Engineering Series, Fall 2017
- Physics for non-science majors, Belmont Univ, Spring 2002

Civic Activities

- 2012 – present: Manager and co-manager of Destination Imagination teams - a volunteer-led, educational non-profit organization that teaches 21st century skills and STEM principles to elementary – high school students.
- 2012 – present: Tennessee Women's Cycling Project (TWCP) founding member and officer. TWCP has a mission of growing the sport of cycling among women. Currently Vice President and a Women's Category 3 road racer.
- 2008 – present: Active member of Franklin First United Methodist Church. Serves through volunteering with elementary and youth ministries. Served on Staff-Parish Committee 2015 – 2017.

Research Support

ONGOING RESEARCH SUPPORT

5P30 CA068485-22 (Pietenpol, Jennifer) 09/01/2016 – 08/31/2021
NIH/NCI
"Cancer Center Support Grant" (27%)

The primary responsibilities of this project are: 1) to coordinate and integrate the cancer and cancer-related activities of Vanderbilt University; 2) to conduct, support and enhance cancer research and to integrate cancer-related activities throughout the University; 3) to integrate, develop and conduct cancer education programs; and 4) to coordinate and integrate the care of cancer patients at Vanderbilt University Medical Center and Veteran's Administration Medical Center.

Roles: Director – VICB High Throughput Core; Interim Director – Antibody and Protein Shared Resource

1UL1TR002243-01 (Bernard, Gordon) 06/01/2017 – 02/28/2022
NCATS
"VICTR Grant" (3% Effort)

The Vanderbilt Institute for Clinical and Translational Research (VICTR) is a highly functional and integrated clinical and translational research infrastructure that has raised the quality and scientific rigor of the research conducted at Vanderbilt and Meharry Medical College. VICTR will contribute to the mission of the CTSA program while leveraging unique resources and expertise within VICTR's Hub.

VUMC/Bayer (Vinson) 10/01/2017-09/30/2018
Bayer (VUMC/Harris UNIVxxxxx)
Research Collaboration and Option Agreement with Bayer AG (10% Effort)

The Vanderbilt HTS facility will assist VUMC investigators involved in the Bayer Partnership with services pertaining to assay development, high-throughput screening, data analysis, and data management. This will involve the training of users from investigators' labs, time from HTS staff, time on HTS instruments, distribution of compounds, software development time, and project management.

COMPLETED RESEARCH SUPPORT

None

Publications

1. Newton, A. P., and Justice, J. B., Jr. (1994) Temporal response of microdialysis probes to local perfusion of dopamine and cocaine followed with one-minute sampling. *Anal Chem* **66**, 1468-1472
2. Vinson, P. N., and Justice, J. B., Jr. (1997) Effect of neostigmine on concentration and extraction fraction of acetylcholine using quantitative microdialysis. *J Neurosci Methods* **73**, 61-67
3. Newton-Vinson, P., Hubalek, F., and Edmondson, D. E. (2000) High-level expression of human liver monoamine oxidase B in Pichia pastoris. *Protein Expr Purif* **20**, 334-345
4. Edmondson, D. E., and Newton-Vinson, P. (2001) The covalent FAD of monoamine oxidase: structural and functional role and mechanism of the flavinylation reaction. *Antioxid Redox Signal* **3**, 789-806
5. Li, M., Hubalek, F., Newton-Vinson, P., and Edmondson, D. E. (2002) High-level expression of human liver monoamine oxidase A in Pichia pastoris: comparison with the enzyme expressed in Saccharomyces cerevisiae. *Protein Expr Purif* **24**, 152-162
6. Nandigama, R. K., Newton-Vinson, P., and Edmondson, D. E. (2002) Phentermine inhibition of recombinant human liver monoamine oxidases A and B. *Biochem Pharmacol* **63**, 865-869
7. Bungay, P. M., Newton-Vinson, P., Isele, W., Garris, P. A., and Justice, J. B. (2003) Microdialysis of dopamine interpreted with quantitative model incorporating probe implantation trauma. *J Neurochem* **86**, 932-946
8. Niswender, C. M., Rodriguez, A. L., Sheffler, D. J., Utley, T. J., Vinson, P. N., Dawson, E. S., Jones, C. K., Wood, M. R., Daniels, J. S., Conn, P. J., Engers, J. L., Le, U. M., Melancon, B. J., Hopkins, C. R., and Lindsley, C. W. (2010) Extended Probe Characterization: Development of an M4 PAM with Improved Activity and Brain Exposure, while Avoiding Species Bias. In *Probe Reports from the NIH Molecular Libraries Program*, Bethesda (MD)
9. Rodriguez, A. L., Grier, M. D., Jones, C. K., Herman, E. J., Kane, A. S., Smith, R. L., Williams, R., Zhou, Y., Marlo, J. E., Days, E. L., Blatt, T. N., Jadhav, S., Menon, U. N., Vinson, P. N., Rook, J. M., Stauffer, S. R., Niswender, C. M., Lindsley, C. W., Weaver, C. D., and Conn, P. J. (2010) Discovery of novel allosteric modulators of metabotropic glutamate receptor subtype 5 reveals chemical and functional diversity and in vivo activity in rat behavioral models of anxiolytic and antipsychotic activity. *Mol Pharmacol* **78**, 1105-1123
10. Zhou, Y., Manka, J. T., Rodriguez, A. L., Weaver, C. D., Days, E. L., Vinson, P. N., Jadhav, S., Hermann, E. J., Jones, C. K., Conn, P. J., Lindsley, C. W., and Stauffer, S. R. (2010) Discovery of N-Aryl Piperazines as Selective mGlu(5) Potentiators with Efficacy in a Rodent Model Predictive of Anti-Psychotic Activity. *ACS Med Chem Lett* **1**, 433-438
11. Utley, T., Haddenham, D., Salovich, J. M., Zamorano, R., Vinson, P. N., Lindsley, C. W., Hopkins, C. R., and Niswender, C. M. (2011) Synthesis and SAR of a novel metabotropic glutamate receptor 4 (mGlu4) antagonist: unexpected 'molecular switch' from a closely related mGlu4 positive allosteric modulator. *Bioorg Med Chem Lett* **21**, 6955-6959
12. Williams, R., Manka, J. T., Rodriguez, A. L., Vinson, P. N., Niswender, C. M., Weaver, C. D., Jones, C. K., Conn, P. J., Lindsley, C. W., and Stauffer, S. R. (2011) Synthesis and SAR of centrally active mGlu5 positive allosteric modulators based on an aryl acetylenic bicyclic lactam scaffold. *Bioorg Med Chem Lett* **21**, 1350-1353
13. Gregory, K. J., Noetzel, M. J., Rook, J. M., Vinson, P. N., Stauffer, S. R., Rodriguez, A. L., Emmitte, K. A., Zhou, Y., Chun, A. C., Felts, A. S., Chauder, B. A., Lindsley, C. W., Niswender, C. M., and Conn, P. J.

(2012) Investigating metabotropic glutamate receptor 5 allosteric modulator cooperativity, affinity, and agonism: enriching structure-function studies and structure-activity relationships. *Mol Pharmacol* **82**, 860-875

14. Manka, J. T., Vinson, P. N., Gregory, K. J., Zhou, Y., Williams, R., Gogi, K., Days, E., Jadhav, S., Herman, E. J., Lavreysen, H., Mackie, C., Bartolome, J. M., Macdonald, G. J., Steckler, T., Daniels, J. S., Weaver, C. D., Niswender, C. M., Jones, C. K., Conn, P. J., Lindsley, C. W., and Stauffer, S. R. (2012) Optimization of an ether series of mGlu5 positive allosteric modulators: molecular determinants of MPEP-site interaction crossover. *Bioorg Med Chem Lett* **22**, 6481-6485
15. Noetzel, M. J., Rook, J. M., Vinson, P. N., Cho, H. P., Days, E., Zhou, Y., Rodriguez, A. L., Lavreysen, H., Stauffer, S. R., Niswender, C. M., Xiang, Z., Daniels, J. S., Jones, C. K., Lindsley, C. W., Weaver, C. D., and Conn, P. J. (2012) Functional impact of allosteric agonist activity of selective positive allosteric modulators of metabotropic glutamate receptor subtype 5 in regulating central nervous system function. *Mol Pharmacol* **81**, 120-133
16. Rodriguez, A. L., Zhou, Y., Williams, R., David Weaver, C., Vinson, P. N., Dawson, E. S., Steckler, T., Lavreysen, H., Mackie, C., Bartolome, J. M., Macdonald, G. J., Scott Daniels, J., Niswender, C. M., Jones, C. K., Jeffrey Conn, P., Lindsley, C. W., and Stauffer, S. R. (2012) Discovery and SAR of a novel series of non-MPEP site mGlu(5) PAMs based on an aryl glycine sulfonamide scaffold. *Bioorg Med Chem Lett* **22**, 7388-7392
17. Rodriguez, A. L., Zhou, Y., Williams, R., Weaver, C. D., Vinson, P. N., Dawson, E. S., Steckler, T., Lavreysen, H., Mackie, C., Bartolome, J. M., Macdonald, G. J., Daniels, J. S., Niswender, C. M., Jones, C. K., Conn, P. J., Lindsley, C. W., and Stauffer, S. R. (2012) Discovery and SAR of a novel series of non-MPEP site mGlu(5) PAMs based on an aryl glycine sulfonamide scaffold. *Bioorg Med Chem Lett* **22**, 7388-7392
18. Salovich, J. M., Vinson, P. N., Sheffler, D. J., Lamsal, A., Utley, T. J., Blobaum, A. L., Bridges, T. M., Le, U., Jones, C. K., Wood, M. R., Daniels, J. S., Conn, P. J., Niswender, C. M., Lindsley, C. W., and Hopkins, C. R. (2012) Discovery of N-(4-methoxy-7-methylbenzo[d]thiazol-2-yl)isonicatinamide, ML293, as a novel, selective and brain penetrant positive allosteric modulator of the muscarinic 4 (M4) receptor. *Bioorg Med Chem Lett* **22**, 5084-5088
19. Sheffler, D. J., Wenthur, C. J., Bruner, J. A., Carrington, S. J., Vinson, P. N., Gogi, K. K., Blobaum, A. L., Morrison, R. D., Vamos, M., Cosford, N. D., Stauffer, S. R., Daniels, J. S., Niswender, C. M., Conn, P. J., and Lindsley, C. W. (2012) Development of a novel, CNS-penetrant, metabotropic glutamate receptor 3 (mGlu3) NAM probe (ML289) derived from a closely related mGlu5 PAM. *Bioorg Med Chem Lett* **22**, 3921-3925
20. Vinson, P. N., and Conn, P. J. (2012) Metabotropic glutamate receptors as therapeutic targets for schizophrenia. *Neuropharmacology* **62**, 1461-1472
21. Bartolome-Nebreda, J. M., Conde-Ceide, S., Delgado, F., Iturrino, L., Pastor, J., Pena, M. A., Trabanco, A. A., Tresadern, G., Wassvik, C. M., Stauffer, S. R., Jadhav, S., Gogi, K., Vinson, P. N., Noetzel, M. J., Days, E., Weaver, C. D., Lindsley, C. W., Niswender, C. M., Jones, C. K., Conn, P. J., Rombouts, F., Lavreysen, H., Macdonald, G. J., Mackie, C., and Steckler, T. (2013) Dihydrothiazolopyridone derivatives as a novel family of positive allosteric modulators of the metabotropic glutamate 5 (mGlu5) receptor. *J Med Chem* **56**, 7243-7259
22. Bridges, T. M., Rook, J. M., Noetzel, M. J., Morrison, R. D., Zhou, Y., Gogliotti, R. D., Vinson, P. N., Xiang, Z., Jones, C. K., Niswender, C. M., Lindsley, C. W., Stauffer, S. R., Conn, P. J., and Daniels, J. S. (2013) Biotransformation of a novel positive allosteric modulator of metabotropic glutamate receptor subtype 5 contributes to seizure-like adverse events in rats involving a receptor agonism-dependent mechanism. *Drug Metab Dispos* **41**, 1703-1714
23. Gentry, P. R., Bridges, T. M., Lamsal, A., Vinson, P. N., Smith, E., Chase, P., Hodder, P. S., Engers, J. L., Niswender, C. M., Daniels, J. S., Jeffrey Conn, P., Wood, M. R., and Lindsley, C. W. (2013) Discovery of ML326: The first sub-micromolar, selective M5 PAM. *Bioorg Med Chem Lett* **23**, 2996-3000
24. Klein, M. T., Vinson, P. N., and Niswender, C. M. (2013) Approaches for probing allosteric interactions at 7 transmembrane spanning receptors. *Prog Mol Biol Transl Sci* **115**, 1-59
25. Le, U., Melancon, B. J., Bridges, T. M., Vinson, P. N., Utley, T. J., Lamsal, A., Rodriguez, A. L., Venable, D., Sheffler, D. J., Jones, C. K., Blobaum, A. L., Wood, M. R., Daniels, J. S., Conn, P. J., Niswender, C. M.,

Lindsley, C. W., and Hopkins, C. R. (2013) Discovery of a selective M(4) positive allosteric modulator based on the 3-amino-thieno[2,3-b]pyridine-2-carboxamide scaffold: development of ML253, a potent and brain penetrant compound that is active in a preclinical model of schizophrenia. *Bioorg Med Chem Lett* **23**, 346-350

26. Noetzel, M. J., Gregory, K. J., Vinson, P. N., Manka, J. T., Stauffer, S. R., Lindsley, C. W., Niswender, C. M., Xiang, Z., and Conn, P. J. (2013) A novel metabotropic glutamate receptor 5 positive allosteric modulator acts at a unique site and confers stimulus bias to mGlu5 signaling. *Mol Pharmacol* **83**, 835-847
27. Rook, J. M., Noetzel, M. J., Pouliot, W. A., Bridges, T. M., Vinson, P. N., Cho, H. P., Zhou, Y., Gogliotti, R. D., Manka, J. T., Gregory, K. J., Stauffer, S. R., Dudek, F. E., Xiang, Z., Niswender, C. M., Daniels, J. S., Jones, C. K., Lindsley, C. W., and Conn, P. J. (2013) Unique signaling profiles of positive allosteric modulators of metabotropic glutamate receptor subtype 5 determine differences in in vivo activity. *Biol Psychiatry* **73**, 501-509
28. Turlington, M., Noetzel, M. J., Chun, A., Zhou, Y., Gogliotti, R. D., Nguyen, E. D., Gregory, K. J., Vinson, P. N., Rook, J. M., Gogi, K. K., Xiang, Z., Bridges, T. M., Daniels, J. S., Jones, C., Niswender, C. M., Meiler, J., Conn, P. J., Lindsley, C. W., and Stauffer, S. R. (2013) Exploration of allosteric agonism structure-activity relationships within an acetylene series of metabotropic glutamate receptor 5 (mGlu5) positive allosteric modulators (PAMs): discovery of 5-((3-fluorophenyl)ethynyl)-N-(3-methyloxetan-3-yl)picolinamide (ML254). *J Med Chem* **56**, 7976-7996
29. Turlington, M., Malosh, C., Jacobs, J., Manka, J. T., Noetzel, M. J., Vinson, P. N., Jadhav, S., Herman, E. J., Lavreysen, H., Mackie, C., Bartolome-Nebreda, J. M., Conde-Ceide, S., Martin-Martin, M. L., Tong, H. M., Lopez, S., MacDonald, G. J., Steckler, T., Daniels, J. S., Weaver, C. D., Niswender, C. M., Jones, C. K., Conn, P. J., Lindsley, C. W., and Stauffer, S. R. (2014) Tetrahydronaphthyridine and dihydronaphthyridinone ethers as positive allosteric modulators of the metabotropic glutamate receptor 5 (mGlu(5)). *J Med Chem* **57**, 5620-5637
30. Turlington, M., Noetzel, M. J., Bridges, T. M., Vinson, P. N., Steckler, T., Lavreysen, H., Mackie, C., Bartolome-Nebreda, J. M., Conde-Ceide, S., Tong, H. M., Macdonald, G. J., Daniels, J. S., Jones, C. K., Niswender, C. M., Conn, P. J., Lindsley, C. W., and Stauffer, S. R. (2014) Discovery and SAR of a novel series of metabotropic glutamate receptor 5 positive allosteric modulators with high ligand efficiency. *Bioorg Med Chem Lett* **24**, 3641-3646
31. Conde-Ceide, S., Martinez-Viturro, C. M., Alcazar, J., Garcia-Barrantes, P. M., Lavreysen, H., Mackie, C., Vinson, P. N., Rook, J. M., Bridges, T. M., Daniels, J. S., Megens, A., Langlois, X., Drinkenburg, W. H., Ahnaou, A., Niswender, C. M., Jones, C. K., Macdonald, G. J., Steckler, T., Conn, P. J., Stauffer, S. R., Bartolome-Nebreda, J. M., and Lindsley, C. W. (2015) Discovery of VU0409551/JNJ-46778212: An mGlu5 Positive Allosteric Modulator Clinical Candidate Targeting Schizophrenia. *ACS Med Chem Lett* **6**, 716-720
32. Malosh, C., Turlington, M., Bridges, T. M., Rook, J. M., Noetzel, M. J., Vinson, P. N., Steckler, T., Lavreysen, H., Mackie, C., Bartolome-Nebreda, J. M., Conde-Ceide, S., Martinez-Viturro, C. M., Piedrafita, M., Sanchez-Casado, M. R., Macdonald, G. J., Daniels, J. S., Jones, C. K., Niswender, C. M., Conn, P. J., Lindsley, C. W., and Stauffer, S. R. (2015) Acyl dihydropyrazolo[1,5-a]pyrimidinones as metabotropic glutamate receptor 5 positive allosteric modulators. *Bioorg Med Chem Lett* **25**, 5115-5120
33. Rook, J. M., Xiang, Z., Lv, X., Ghoshal, A., Dickerson, J. W., Bridges, T. M., Johnson, K. A., Foster, D. J., Gregory, K. J., Vinson, P. N., Thompson, A. D., Byun, N., Collier, R. L., Bubser, M., Nedelcovych, M. T., Gould, R. W., Stauffer, S. R., Daniels, J. S., Niswender, C. M., Lavreysen, H., Mackie, C., Conde-Ceide, S., Alcazar, J., Bartolome-Nebreda, J. M., Macdonald, G. J., Talpos, J. C., Steckler, T., Jones, C. K., Lindsley, C. W., and Conn, P. J. (2015) Biased mGlu-Positive Allosteric Modulators Provide In Vivo Efficacy without Potentiating mGlu Modulation of NMDAR Currents. *Neuron*
34. Skrypnyk, N. I., Sanker, S., Skvarca, L. B., Novitskaya, T., Woods, C., Chiba, T., Patel, K., Goldberg, N. D., McDermott, L., Vinson, P. N., Calcutt, M. W., Huryn, D. M., Vernetti, L. A., Vogt, A., Hukriede, N. A., and de Caestecker, M. P. (2016) Delayed treatment with PTBA analogs reduces postinjury renal fibrosis after kidney injury. *Am J Physiol Renal Physiol* **310**, F705-F716

35. Azumaya, C. M., Days, E. L., Vinson, P. N., Stauffer, S., Sulikowski, G., Weaver, C. D., and Nakagawa, T. (2017) Screening for AMPA receptor auxiliary subunit specific modulators. *PLoS One* **12**, e0174742
36. Dadi, P. K., Vierra, N. C., Days, E., Dickerson, M. T., Vinson, P. N., Weaver, C. D., and Jacobson, D. A. (2017) Selective Small Molecule Activators of TREK-2 Channels Stimulate Dorsal Root Ganglion c-Fiber Nociceptor Two-Pore-Domain Potassium Channel Currents and Limit Calcium Influx. *ACS Chem Neurosci* **8**, 558-568
37. Kharade, S. V., Kurata, H., Bender, A. M., Blobaum, A. L., Figueroa, E. E., Duran, A., Kramer, M., Days, E., Vinson, P., Flores, D., Satlin, L. M., Meiler, J., Weaver, C. D., Lindsley, C. W., Hopkins, C. R., and Denton, J. S. (2018) Discovery, Characterization, and Effects on Renal Fluid and Electrolyte Excretion of the Kir4.1 Potassium Channel Pore Blocker, VU0134992. *Mol Pharmacol* **94**, 926-937
38. Siricilla, S., Knapp, K. M., Rogers, J. H., Berger, C., Shelton, E. L., Mi, D., Vinson, P., Condon, J., Paria, B. C., Reese, J., Sheng, Q., and Herington, J. L. (2019) Comparative analysis of myometrial and vascular smooth muscle cells to determine optimal cells for use in drug discovery. *Pharmacol Res* **146**, 104268