

### Gregory H. Hockerman Publications

45. Tang, S., Sun, Y., Jarrard, R.J., Krusemark, C.J., and Hockerman, G.H. Selective regulation of Ca<sub>v</sub>1.3 by disruption of interactions with beta subunit SH3 and GK domains. **In Preparation**
44. Harvey, K.E., Rantz, E.K., Tang, S., Salyer, A.E., and **Hockerman, G.H.** RYR2 activity regulates insulin secretion, electrical activity, and IP<sub>3</sub> receptor activation in the insulinoma cell line INS-1. **In Preparation**
43. Zampieri, S. Sandri, M., Cheatwood, J.L., Balaraman, R.P., Anderson, L.B., Cobb, B.A., Latour, C.D., **Hockerman, G.H.**, Kern, H., Sartori, R., Ravara, B., Mergliano, S., Da Dalt, G., Davie, J.K., Kohli, P., Carraro, U., Pond, A.L. The ERG1 potassium channel is highly abundant in cachectic human skeletal muscle. **Submitted**
42. Whitmore, C., Pratt, E.S.P., Anderson, L.B., Bradley, K.S., Latour, S.M., Hashmi, M.N., Urazaev, A.K., Weilbacher, R., Davie, J.K., Wang, W-H., **Hockerman, G.H.**, Pond, A.L. The ERG1a potassium channel increases basal intracellular calcium concentration and calpain activity in skeletal muscle. *Skelet Muscle* **10**:1 (2020) doi: 10.1186/s13395-019-0220-3
41. Pratt, E.P.S, Salyer, A.E., Harvey, K.E., **Hockerman, G.H.** Regulation of cAMP accumulation and activity by distinct phosphodiesterase subtypes in INS-1 cells and human pancreatic beta cells. *PLoS ONE* **14**(8):e0215188 (2019) **Featured in Pancreatic Cell News 10.33 (August 27, 2019).**
40. Wang, Y., Tang, S., Harvey, K.E., Salyer, A.E., Li, T., Rantz, E.K., Lill, M.A., and **Hockerman, G.H.** Molecular determinants of the differential modulation of Ca<sub>v</sub>1.2 and Ca<sub>v</sub>1.3 by nifedipine and FPL 64176. *Mol Pharmacol* **94**:973-983 (2018) **A Featured Article of the Sept 2018 issue.**
39. Sowaileh, M., Salyer, A.E., John, J.P., Woods, J.R., **Hockerman, G.H.**, and Colby, D.A. Agonists of the  $\gamma$ -aminobutyric acid type B (GABA<sub>B</sub>) receptor derived from  $\beta$ -hydroxy and  $\beta$ -amino difluoromethyl ketones. *Bioorg Med Chem Lett* **28**:2697-2700 (2018)
38. Sealover, N.R., Felts, B., Kuntz, C.P., Jarrard, R.E., **Hockerman, G.H.**, Henry, L.K., Barker, E.L. The external gate of the serotonin transporter requires a basic/acidic amino acid pair for amphetamine translocation and the induction of substrate efflux. *Biochem Pharmacol* **120**:46-55 (2016)
37. Pratt, E.P.S., Owens, J.L., **Hockerman, G.H.**, and Hu, C.D. Bimolecular fluorescence complementation (BiFC) analysis of protein-protein interactions and assessment of subcellular localization in live cells. *Meth Mol Biol* **1474**:153-170 (2016)

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36. Pratt, E.P.S., Salyer, A.E., Guerra, M.L., and **Hockerman, G.H.** Ca<sup>2+</sup> influx through L-type channels and Ca<sup>2+</sup>-induced Ca<sup>2+</sup> release regulate cAMP accumulation and EPAC1-dependent ERK1/2 activation in INS-1 cells. *Mol Cell Endocrinol* **419**:60-71 (2016) **Featured in Pancreatic Cell News 6.39 (October 6<sup>th</sup>, 2016)**
35. Brown, K.M., Roy, K.K., **Hockerman, G.H.**, Doerksen, R.J., and Colby, D.A. Activation of the  $\gamma$ -aminobutyric acid type B (GABA<sub>B</sub>) receptor by agonists and positive allosteric modulators. *J Med Chem* **58**:6336-6347 (2015)
34. **Hockerman, G.H.**, Swarrigin, N.M., Hameeed, S., Doran, M., Jaeger, C., Wang, and W-H, Pond, A.L. The *Ubr2* gene is expressed in skeletal muscle atrophying as a result of hind limb suspension, but not *Merg1a* expression alone. *Eur J Trans Myol- Basic Appl Myol* **24**:7-14 (2014)
33. Wang, Y., Jarrard, R.J., Pratt, E.P.S., Guerra, M.L., Lange, A.M., Soderling, I.M., and **Hockerman, G.H.** Uncoupling of Ca<sub>v</sub>1.2 from Ca<sup>2+</sup>-induced Ca<sup>2+</sup> release and SK channel regulation in pancreatic beta cells. *Mol Endocrinol* **28**:458-476 (2014)
32. Pond, A.L., Nedele, C., Wang, W-H, Wang, X., Walther, D.V.M., Jaeger, C., Latour, C.D., Du, H., Fujita, N., **Hockerman, G.H.**, and Hannon, K.M. The MERG1a Channel Modulates Skeletal Muscle NF- $\kappa$ B Activity and MuRF1 Expression *Muscle Nerve* **49**:378-388 (2014)
31. Conley J.M., Brand C.S., Bogard A.S., Pratt E.P.S., Xu R., **Hockerman, G.H.**, Ostrom R.S., Dessauer C.W., and Watts V.J. Development of a high-throughput screening paradigm for the discovery of small molecule modulators of adenylyl cyclase. *J Pharmacol Exp Ther* **347**:276-287 (2013).
30. Han. C., Salyer A.E., Kim, E.H., Jiang, X., Jarrard, R.E., Powers, M.S., Kirchhoff, A.M., Salvador, T.K., Chester, J.A., **Hockerman, G.H.**, and Colby, D.A. Evaluation of difluoromethylketones as agonists of the  $\gamma$ -aminobutyric acid type B (GABA<sub>B</sub>) receptor. *J Med Chem* **56**:2456-2465 (2013)
29. Jarrard, R.E., Wang, Y., Salyer, A.E, Soderling, I.M., Guerra, M.L., Lange, A.M., Pratt E.P.S., Broderick, H.J. and **Hockerman, G.H.** Potentiation of sulfonylurea action by an EPAC-selective cAMP analog in INS-1 cells: Comparison of tolbutamide and gliclazide, and a potential role for EPAC activation of a 2-APB-sensitive Ca<sup>2+</sup> influx. *Mol Pharmacol* **83**:191-205 (2013).
28. Lin, M., Aladejebe, O., and **Hockerman, G.H.** Distinct properties of amlodipine and nifedipine block of the voltage-dependent Ca<sup>2+</sup> channels Ca<sub>v</sub>1.2 and Ca<sub>v</sub>2.1 and the mutant channels Ca<sub>v</sub>1.2/DHPi and Ca<sub>v</sub>2.1/DHPs. *Eur. J. Pharmacol.* **670**:105-113 (2011).

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27. Shabbir, W., Beyl, S., Timin, E.N., Schellmann, D., Erker, T., Hohaus, A., **Hockerman, G.H.**, and Hering, S. Interaction of diltiazem with an intracellularly accessible binding site on  $\text{Ca}_v1.2$ . *Br. J. Pharmacol.* 62:1074-1082 (2011).
26. Jacobo, S.M.P., Guerra, M.L., and **Hockerman, G.H.**  $\text{Ca}_v1.2$  and  $\text{Ca}_v1.3$  are differentially coupled to glucagon-like peptide-1 potentiation of glucose-stimulated insulin secretion in the pancreatic beta cell line INS-1. *J. Pharmacol. Exp. Ther.* 331:724-732 (2009).
25. Jacobo, S.M.P., Guerra, M.L., Jarrard, R.E., Przybyla J.A., Liu G., Watts V.J., and **Hockerman, G.H.** The intracellular II-III loop of  $\text{Ca}_v1.2$  and  $\text{Ca}_v1.3$  uncouple L-type voltage-gated  $\text{Ca}^{2+}$  channels from glucagon-like peptide-1 potentiation of insulin secretion in INS-1 cells via displacement from lipid rafts. *J. Pharmacol. Exp. Ther.* 330:283-293 (2009).
24. Wang, X., Xu, R., Abernathy, G., Taylor, J., Alzghoul, M.B., Hannon, K., **Hockerman, G.H.**, and Pond, A. L.  $\text{K}_v11.1$  channel subunit composition includes MinK and varies developmentally in mouse cardiac muscle. *Dev. Dyn.* 237:2430-2437 (2008).
23. Walsh, K.B., Zhang, J., Fuseler, J.W., Hilliard, N., and **Hockerman, G.H.** Adenoviral-mediated expression of dihydropyridine-insensitive L-type calcium channels in cardiac ventricular myocytes and fibroblasts. *Eur. J. Pharmacol.* 565:7-16 (2007).
22. Liu, G., Jacobo, S. M. P., Hilliard, N., and **Hockerman, G.H.** Cyclic AMP potentiates coupling of both  $\text{Ca}_v1.2$  and  $\text{Ca}_v1.3$  to glucose-stimulated insulin secretion at sub-maximal glucose concentration through Epac and PKA in INS-1 cells. *J. Pharmacol. Exp. Ther.* 318:152-160 (2006).
21. Wang, X., **Hockerman, G.H.**, Green, H.W., Babbs, C.F., Mohammad, S.I., Gerrard, D., Latour, M.A., London, B., Hannon, K.M., and Pond, A.L. Merg1A  $\text{K}^+$  channel induces skeletal muscle atrophy by activating the ubiquitin proteasome pathway. *FASEB J.* 20:1531-1533 (2006).
20. Vikman, J., Ma, X., **Hockerman, G.H.**, Rorsman, P., and Eliasson, L. Antibody inhibition of SNAP-25 and syntaxin 1A clusters reduces rapid exocytosis in insulin-secreting cells. *J. Mol. Endocrinol.* 36:503-515 (2006).
19. Dilmac, N., Hilliard, N., and **Hockerman, G.H.** Molecular determinants of frequency-dependence and  $\text{Ca}^{2+}$  potentiation of verapamil block in the pore region of  $\text{Ca}_v1.2$ . *Mol. Pharmacol.* 66:1236-1247 (2004).
18. Spelbrink, R., Dilmac, N., Allen, A., Smith, T.J., Shah, D., and **Hockerman, G.H.** The alfalfa antifungal defensin, MsDef1, is a trans-kingdom calcium channel inhibitor. *Plant Physiol.* 135:2055-2067 (2004).

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17. Zhao, Y., Sadtler, B., Lin, M., **Hockerman, G.H.**, and Wei, A. Nanoprobe implantation into mammalian cells by cationic transfection. *Chem. Comm.* 2004 (7):784-785 (2004).
16. Liu, G., Hilliard, N., and **Hockerman, G.H.** Preferential coupling of  $\text{Ca}_v1.3$  to glucose-induced  $[\text{Ca}^{2+}]_i$  oscillations in the pancreatic beta cell line INS-1. *Mol. Pharmacol.* 65:1269-1277 (2004)
15. Dilmac, N., Hilliard, N., and **Hockerman, G.H.** Molecular determinants of  $\text{Ca}^{2+}$  potentiation of diltiazem block and  $\text{Ca}^{2+}$ -dependent inactivation in the pore region of  $\text{Ca}_v1.2$  *Mol. Pharmacol.* 64:491-501 (2003)
14. Liu, G., Dilmac, N., Hilliard, N., and **Hockerman, G.H.**  $\text{Ca}_v1.3$  is preferentially coupled to glucose-stimulated insulin secretion in the pancreatic beta-cell line INS-1. *J. Pharmacol. Exp. Ther.* 305:271-278 (2003)
13. Gage, M.J., Rane, S.G., **Hockerman, G.H.**, and Smith, T.J. The virally encoded fungal toxin KP4 blocks L-type voltage-gated calcium channels. *Mol. Pharmacol.* 61:936-944 (2002).
12. **Hockerman, G.H.**, Dilmac, N., Scheuer, T., and Catterall, W.A. Molecular determinants of diltiazem block in domains IIIS6 and IVS6 of L-type calcium channels. *Mol. Pharmacol.* 58:1264-1270 (2000)
11. **Hockerman, G.H.**, Peterson, B.Z. Tanada, T.N., Sharp, E.M., and Catterall, W.A. Construction of a high affinity receptor site for dihydropyridine agonists and antagonists by single amino acid substitutions in a non-L-type calcium channel. *Proc. Natl. Acad. Sci. USA* 94:14906-14911 (1997).
10. Johnson, B.D., Brousal, J.P., Peterson, B.Z., Gallombardo, P.A., **Hockerman, G.H.**, Lai, Y., Scheuer, T., and Catterall, W.A. Modulation of the cloned skeletal muscle L-type  $\text{Ca}^{2+}$  channel by anchored cAMP-dependent protein kinase. *J. Neurosci.* 17:1243-1255 (1997).
9. Herlitze, S., **Hockerman, G.H.**, Scheuer, T., and Catterall, W.A. Molecular determinants of inactivation and G protein modulation in the intracellular loop connecting domains I and II of the calcium channel  $\alpha 1A$  subunit. *Proc. Natl. Acad. Sci. USA* 94:1512-1516 (1997).
8. **Hockerman, G.H.**, Johnson, B.D., Abbott, M.R., Scheuer, T., and Catterall, W.A. Molecular determinants of high affinity phenylalkylamine block of L-type calcium channels in transmembrane segment IIIS6 and the pore region of the  $\alpha 1$  subunit. *J. Biol. Chem.* 272:18759-18765 (1997).
7. Peterson, B.Z., Johnson, B.D., **Hockerman, G.H.**, Acheson, M.J., Scheuer, T., and Catterall, W.A. Analysis of the dihydropyridine receptor site of L-type calcium channels by alanine-scanning mutagenesis. *J. Biol. Chem.* 272:18752-18758 (1997).

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5. Johnson, B.D., **Hockerman, G.H.**, Scheuer, T., and Catterall, W.A. Distinct effects of mutations in transmembrane segments IVS6 on block of L-type calcium channels by structurally similar phenylalkylamines. *Mol. Pharmacol.* 50:1388-1400 (1996).
4. **Hockerman, G.H.**, Girvin, M.E., Malbon, C.C., and A.E. Ruoho. Antagonist conformations within the beta2-adrenergic receptor ligand binding pocket. *Mol. Pharmacol.* 49: 1021-1032 (1996).
3. **Hockerman, G.H.**, Johnson, B.D., Scheuer, T. and Catterall, W.A. Molecular determinants of high affinity block of L-type calcium channels by phenylalkylamines. *J. Biol. Chem.* 270:22119-22122 (1995).
2. Ruoho, A.E., Rashidbaigi, A., **Hockerman, G.H.**, Larson, M., Resek, J.F., and Malbon, C.C. Development of novel photoaffinity ligands for the beta-adrenergic receptor. *Neuroprotocols* 4:50-65 (1994).
1. Taylor, S.K., **Hockerman, G.H.**, Karrick, G.L., Lyle, S.B., and Schramm, S.B.: Friedel-Crafts cyclialkylation of some epoxides. *J. Org. Chem.* 48:2449-2453 (1983).