

DANIEL BAPTISTA-HON

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EDUCATION

PhD	University of Edinburgh, Physiology <i>Thesis: "Molecular Determinants of Iron Overload Cardiomyopathies"</i>	November 2011
MSc	University of Manchester, Molecular Pharmacology <i>Thesis: "Effect of Iron on Rat Ventricular Myocytes"</i>	November 2004
BSc	University of Manchester, Biomedical Sciences 2 nd Class With Honours	June 2003

ACADEMIC CAREER

Current positions

Faculty of Medicine, Macau University of Science and Technology, Macau S.A.R., China. From Jul 2020

Assistant Professor

School of Medicine, University of Dundee, UK. From Oct 2020

Honorary Lecturer

Past positions

Institute of Academic Anaesthesia, School of Medicine, University of Dundee, UK. 2019 to 2020
Stewart Trust Senior Fellow

Institute of Academic Anaesthesia, School of Medicine, University of Dundee, UK. 2009 to 2019
Postdoctoral Research Assistant, Laboratory of Prof. Tim Hales

Royal (Dick) School of Veterinary Studies, University of Edinburgh, UK. 2004 to 2009
Named researcher, Laboratory of Dr. Mary Diaz

FUNDING AWARDS

- **FDCT General research grant (2021-2024)** - *The voltage-gated sodium channel Nav1.5 functions as an escape pathway from apoptosis in colon cancer cells (Grant value MOP 2,650,000).*
- **Stewart Trust Fund (2019-2022)** - *Establishing the value of direct inhibitory effects of local anaesthetics for disease free survival following excision of colon tumours (Grant value - £250,000).*

TEACHING

Faculty of Medicine, Macau University of Science and Technology, Macau SAR, China.

- MBBS Year 1 Co-ordinator.
- Chief Discipline Co-ordinator for Microbiology.

- Module co-ordinator for Central Nervous System block; Module co-ordinator for Language and Communications.
- I deliver lectures and associated practicals on microbiology, cardiac excitability and neuronal excitability to Year 1 and Year 2 MBBS students.
- I run Language and Communications workshops, journal clubs and debate sessions with MBBS students.

School of Medicine, University of Dundee, UK.

- I deliver online lectures and practicals in the Heart & Circulation module to BSc and MBChB (MBBS) students.
- MSc Applied Neuroscience – I deliver lectures, tutorials and lab skills workshops on neuronal ion channels and excitability in the Foundations in Neuroscience module.
- I have supervised over 20 undergraduate BSc, MSc and MBChB students on laboratory research projects covering ion channel electrophysiology and pharmacology.
- 2018 - Nominated for Best Tutor/ Advisor in the Student-Led Teaching Awards, School of Medicine, University of Dundee.

Royal (Dick) School of Veterinary Studies, University of Edinburgh, UK (2004-2009).

- I delivered lectures and tutorials on pharmacokinetics and pharmacodynamics to undergraduate BVM&S Veterinary Medicine students. I ran practical workshops on respiratory physiology.
- I supervised undergraduate BSc, MSc and MBChB students on laboratory research projects covering cardiomyocyte intracellular calcium handling, patch clamp electrophysiology and single channel electrophysiology.

PUBLICATIONS

Peer-reviewed publications

1. Monteiro O., Bhaskar A., Wong I.N., Ng K.M. and **Baptista-Hon D.T.** Teaching bioelectricity and neurophysiology to medical students using LabAXON simulations. *Adv Physiol Ed* (2021) Accepted: In Press. (IF: 2.89) (*Corresponding author*)
2. Li G., Zhou Z.C., Du P., Yu M.X., Li N., Xiong X.X., Huang H., Liu Z.H., Dai Q.J., Zhu J., Guo C.B., Wu S.Y., **Baptista-Hon D.T.**, Miao M., Ming L.W., Wu Y., Zeng F.X., Zhang C.L., Zhang E.D., Song H.F., Liu J.H., Lau J.Y.N., Xiang A.P., Zhang K. The SARS-CoV-2 spike L452R-E484Q co-variant in the Indian B.1.617 strain Showed Significant Reduction in the Neutralization Activity of Immune Sera. *Precision Clinical Medicine* (2021) pbab016. <https://doi.org/10.1093/pccmedi/pbab016>
3. Zhou Z.C., Du P., Li N., Xiong X.X., Huang H., Liu Z.H., Dai Q.J., Yu M.X., Zhu J., **Baptista-Hon D.T.**, Miao M., Zhang C.C., Xiang A.P., Lau J.Y.N., Li G. and Zhang K. Assessment of Infectivity and the Impact on Neutralizing Activity of Immune Sera of the COVID-19 Variant, CAL.20C. *Signal Transduct Target Ther* (2021) 6(1):285. <https://doi.org/10.1038/s41392-021-00695-0> (IF: 21.2).
4. Singleton S., **Baptista-Hon D.T.**, Edelsten E., McCaughey K.S., Camplisson E. and Hales T.G. TRV130 partial agonism and capacity to induce anti-nociceptive tolerance revealed through reducing available μ -opioid receptor number. *Br J Pharmacol* (2021) 178(8):1855-1868. <https://doi.org/10.1111/bph.15409> (IF: 6.81).

5. **Baptista-Hon D.T.**, Smith M., Singleton S., Antonides L.H., Nic Daeid N., McKenzie C. and Hales T.G. Activation of μ -opioid receptors by MT-45 (1-cyclohexyl-4-(1,2-diphenylethyl)piperazine) and its fluorinated derivatives. *Br J Pharmacol* (2020) 177(15):3436-3448. <https://doi.org/10.1111/bph.15064> (IF: 6.81).
6. Gottschald Chiodi C., **Baptista-Hon D.T.**, Hunter W.N. and Hales T.G. Amino acid substitutions in the human homomeric β 3 GABAA receptor that enable activation by GABA. *J Biol Chem* (2019) 294(7):2375-2385 (IF: 4.28).
7. Singh K., **Baptista-Hon D.T.**, Hewitt M., Kouli O., Hossain-Ibrahim K. and Hales T.G. Determining an in vitro dose-response relationship of photodynamic therapy with first and second-generation photosensitisers for high grade tumours. *17th International Photodynamic Association World Congress* (2019). DOI: 10.1117/12.2527574.
8. Smith M., **Baptista-Hon D.T.**, Antonides L., Mckenzie C., Daeid N. and Hales T.G. Activation of the mu-opioid receptor by MT-45 and its synthetic and metabolic derivatives. *Br J Anaesth* (2019). DOI: 10.1016/j.bja.2018.10.047 (IF: 6.50).
9. Singleton S., **Baptista-Hon D.T.**, Bull F. and Hales T.G. Measuring the bias of morphine, oxycodone, and buprenorphine for G protein activation vs β -arrestin2 recruitment to the μ opioid receptor. *Br J Anaesth* (2019). DOI: 10.1016/j.bja.2018.10.038 (IF: 6.50).
10. Pospiech G., **Baptista-Hon D.T.** and Hales T.G. Consequences of dynamic changes in palmitoylation of $\text{Na}_v1.5$ voltage-gated Na^+ channels. *Br J Anaesth* (2018) 120(5): E8 (IF: 6.50).
11. **Baptista-Hon D.T.***, Elajnaf T.* (joint first authorship) and Hales T.G. Potent inactivation-dependent inhibition of adult and neonatal $\text{Na}_v1.5$ channels by lidocaine and levobupivacaine. *Anaesth Analg* (2018) 127(3):650-660 (IF: 3.83).
12. Wright L., **Baptista-Hon D.T.**, Bull F., Dalgaty F., Gallacher M., Woods J.A., Ibbotson S.H. and Hales T.G. Phototoxicity causes pain by activating TRPV1 receptors. *Pain* (2018) 159(2):284-297 (IF: 6.03).
13. Bull F., **Baptista-Hon D.T.**, Lambert J.J., Walwyn W. and Hales T.G. Morphine activation of mu opioid receptors causes disinhibition of neurons in the ventral tegmental area mediated by β -arrestin 2 and c-src. *Scientific Reports* (2017) 7(1):9969 (IF: 4.53).
14. Bull F., **Baptista-Hon D.T.**, Sneddon C., Wright L., Walwyn W. and Hales T.G. Src kinase inhibition attenuates morphine tolerance without affecting reinforcement or psychomotor stimulation. *Anaesthesiology* (2017) 127(5):878-889 (IF: 4.14).
15. **Baptista-Hon D.T.**, Gulbinaite S. and Hales T.G. The identity of a loop G residue in the GABA_A receptor α 1 subunit influences gating efficacy. *J Physiol.* (2017) 595(5):1725-1741 (IF: 4.95).
16. **Baptista-Hon D.T.**, Krah A., Zachariae U. and Hales T.G. A role for loop G in the β 1 strand in GABA_A receptor activation. *J Physiol.* (2016) 594(19):5555-71 (IF: 4.95).
17. Ong S., Elajnaf T., **Baptista-Hon D.T.** and Hales T.G. Voltage-activated Na^+ channels as novel targets for treating metastatic colon cancer: investigating the effect of local anaesthetics on $\text{Na}_v1.5$ channels in metastatic colon cancer. *Br J Anaesth* (2016) 116(6):E935 (IF: 6.50).
18. House C.D., Wang B.D., Ceniccola K., Williams R., Simaan M., Olender J., Patel V., **Baptista-Hon D.T.**, Annunziata C.M., Gutkind J.S., Hales T.G. and Lee N.H. Voltage-gated Na^+ Channel Activity Increases Colon Cancer Transcriptional Activity and Invasion Via Persistent MAPK Signaling. *Sci Rep.* (2015) 5:11541 (IF: 4.53).

19. Vickery O.N., **Baptista-Hon D.T.**, Seeliger D., Hales T.G. and Zachariae U. Investigating the effect of sodium and voltage on δ -opioid receptors. *Biophysical J* (2015); 108(2): 414 (IF: 3.67).
20. Morton R.A., **Baptista-Hon D.T.**, Hales T.G. and Lovinger D.M. Agonist- and antagonist-induced up-regulation of surface 5-HT₃ A receptors. *Br J Pharmacol.* (2015) 172:4066-77 (IF: 6.81).
21. **Baptista-Hon D.T.**, Robertson F.M., Robertson G.B., Owen S.J., Rogers G.W., Lydon E.L., Lee N.H. and Hales T.G. Potent inhibition by ropivacaine of metastatic colon cancer SW620 cell invasion and Na_v1.5 channel function. *Br J Anaesth.* (2014) 113 S: i39-i48 (IF: 6.50).
22. **Baptista-Hon D.T.**, Deeb T.Z., Lambert J.J., Peters J.A. and Hales T.G. The minimum M3-M4 loop length of neurotransmitter-activated pentameric receptors is critical for the structural integrity of cytoplasmic portals. *J Biol Chem.* (2013) 288: 21558-68 (IF: 4.28).
23. Othman N.A, Gallacher, M., Deeb T.Z., **Baptista-Hon, D.T.**, Perry, D.C. and Hales T.G. Influences on blockade by TBPS of GABA_A receptor spontaneous gating, agonist activation and desensitization. *J Physiol.* (2012) 590:163-78 (IF: 4.95).
24. **Baptista-Hon D.T.**, Othman N.A., Sharp D., Deeb T.Z., and Hales T.G. The 5-HT₃B subunit affects high potency 5-HT₃ receptor inhibition by morphine. *Br J Pharmacol.* (2012) 165:693-704 (IF: 6.81).
25. Millar F.R., **Baptista-Hon D.T.**, O'Neill S.C. and Díaz M.E. Increasing anti-oxidant capacity reverses iron overload mediated dysfunction in cardiomyocytes. *Heart* (2011) 97:A96-A97 (IF:5.21)
26. **Baptista-Hon D.T.**, Elliott A.C. and Díaz M.E. Iron(II) modulation of cardiac ryanodine receptors (RyR2). *Biophysical J* (2009); 96(3): 113-114 (IF: 3.67).
27. **Baptista-Hon D.T.**, Díaz M.E. and Elliott A.C. Acute exposure to iron (II) alters calcium handling in isolated rat ventricular myocytes. *J Mol Cell Cardiol* (2005); 39: 179 (IF: 5.01).

Book and Book Chapters

1. Monograph (2020): A Dream Come True. Chief editors: Patil N.G., **Baptista-Hon D.T.**, Lam C.W.K. Faculty of Medicine, Macau University of Science and Technology, Macau SAR, China.

INVITED PRESENTATIONS AND LECTURES

1. "Palmitoylation affects state dependent targeting of voltage-activated sodium channels in colorectal cancer by lidocaine" 5th Macau Biomedical Sciences Symposium, University of Macau (Jun 2018).
2. "The role of voltage-activated sodium channels in colorectal cancer metastasis and survival" Faculty of Health Sciences seminar series, University of Macau (Jun 2017).
3. "Potent inhibition by ropivacaine of metastatic colon cancer SW620 cell invasion and Na_v1.5 channel function" Scottish Pain Research Community meeting, Dundee, UK (Mar 2014).
4. "The M3-M4 loop is important for function in 5-HT₃ receptors" Society for Neuroscience (SfN) Annual meeting, Washington D.C., USA (Oct 2011).

PROFESSIONAL SERVICES

Reviewer for:

- British Journal of Pharmacology (IF: 6.81)

- British Journal of Anaesthesia (IF: 6.50)
- Frontiers in Neuroscience (IF: 3.21; Review Editor)
- Frontiers in Endocrinology (IF: 3.68; Review Editor)
- Biochimica et Biophysica Acta - Biomembranes (IF: 3.79)
- Experimental Physiology (IF: 2.91)
- Neuroscience Letters (IF: 2.18)
- Oncology Letters (IF: 1.56)

Grant Applications reviewer for:

- Association of Anesthetists of Great Britain and Ireland

Member of:

- Euro-Periscope – A European Co-operation in Science and Technology (COST) Action platform for outcomes research into peri-operative interventions during surgery for cancer.