

DE SOUZA MONTEIRO, OLIVIA

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Dr. Olivia Monteiro completed her undergraduate degree in Biomedical Sciences at the University of Aberdeen, UK before earning her PhD from the University of Edinburgh, UK in 2010. With a primary focus on neuropharmacology and cognitive neuroscience, her laboratory investigates the impacts of anaesthesia, early life adversities and neurodegenerative diseases on cognitive function. Her research focuses on the pharmacological manipulations of GABA_ARs to impair or to enhance cognition. Additionally, her laboratory explores the emerging phenomenon of long COVID, examining alterations in immune mediators and neurotransmitter levels within the local population.

Academic History

2020 - 現在: Assistant Professor, Faculty of Medicine MUST

2012 – 2019: Post-doctoral scientist, Faculty of Medicine, University of Dundee

2009-2011: Post-doctoral scientist, College of Life Science, University of Dundee

2005-2010: PhD, University of Edinburgh; BBSRC studentship

2001-2004: BSc. Hons, University of Aberdeen; Biomedical Sciences (Pharmacology)

Teaching Area

Pharmacology, Physiology, Neuroscience, Language and Communication

Research Area

Neuropharmacology, cognitive neuroscience, behavioural neuroscience, early life adversity, post-operative cognitive deficits caused by general anaesthesia, long COVID, Pathways of cell death in cancer biology

Competitive Research Funding and Awards

- FDCT (2025 – 2028) The Impact of Maternal Distraction on Offspring Cognitive Development: Mechanistic Insights and Pharmacological Interventions via $\alpha 5$ -GABAARs. (MOP 1,507,000) Principal investigator
- FDCT (2022 – 2025) Selective inhibition of GABAARs on the treatment of postoperative cognitive deficit (POCD) caused by anaesthesia. (MOP 1,400,000) Principal investigator
- FDCT (2022 – 2024) Effects of Sinopharm BBIBP-CorV and BioNTech mRNA primary vaccination series and homologous and heterologous booster shots against SARS-CoV2 variants of concern in a local population in Macao. (MOP 644,000) Principal investigator
- Macau University of Science and Technology Faculty Research Grant (2021-2022) - Relocalization of extrasynaptic $\alpha 5$ -GABAA receptors causes memory loss and impairs long-term potentiation in a model of early life adversity (MOP 100,000). Principal investigator.
- Fosun Pharmaceuticals (2022 – present) Macau Antibody Protection Study (MOP 5,200,000) Co-Investigator.
- FDCT (2021-2024) - The voltage-gated sodium channel NaV1.5 functions as an escape pathway from apoptosis in colon cancer cells (MOP 2,650,000). Co-investigator.
- The G Lawrence Award (University of Dundee) 2015 and 2018.
- European Molecular Biology Organization (EMBO) Project and Travel Award (3D developmental imaging) 2011
- Society for Endocrinology Small Grant Programme for Scientific Research in Endocrinology (2007-2008) – Mechanisms for dendritic peptide release (MOP 113,330).

Selected Publications

1. Patil NG, Kou NL, Baptista-Hon DT, **Monteiro O** (In press 2025) Artificial Intelligence in Medical Education: A Practical Guide for Educators MedComm – Future Medicine **Corresponding Author**
2. Wang Jinzhuo Wang, J., Wang, K., Yu, Y...**Monteiro O**...Zhang K, Qu J. (December 2024) Self-improving generative foundation model for synthetic medical image generation and clinical applications. *Nature Medicine*. IF 58.7. Contributing Author
3. Lok L.S.C.*, Sarkar S.*, Law C.F., Chau S.T., Leung C.Y., Cheang W.H., Li T., **Monteiro O.**#, Baptista-Hon D.T. # (In press 2024) Long COVID Across SARS-CoV-2 Variants: Clinical Features, Pathogenesis and Future Directions MedComm – Future Medicine **Corresponding Author**
4. Wong IN*, **Monteiro O***, Baptista-Hon D, Wang K, Lu Wy, Sun Z, Nei S, Yin Y (November 2024). Leveraging foundation and large language models in medical artificial intelligence *Chinese Medical Journal*. IF 7.5. **1st Author**
5. L. S. C. Lok, **O. Monteiro**, D. T. Baptista-Hon (October 2024) Unlocking longevity: How blocking IL-11 signaling could extend healthspan and lifespan. MedComm – Future Medicine
6. Zhang S, Yang B, Yang H, Zhao J, Zhang Y, Gao Y, **Monteiro O**, Zhang K, Liu B, Wang S (June 2024). Potential rapid intraoperative cancer diagnosis using dynamic full-field optical coherence tomography and deep learning: A prospective cohort study in breast cancer patients. *Science Bulletin*. IF 18.9. Contributing Author
7. Sarkar S and **Monteiro O** (April 2024) Understanding long COVID—The role of serotonin in cognitive impairment MedComm – Future Medicine **Corresponding Author**
8. Guan T, **Monteiro O**, Chen D, Luo Z, Chi K, Li Z, Liang Y, Lu Z, Jiang Y, Yang J, Lin W, Yi M, Zhang K, Ou C (26/03/2024). Long-term and short-term cardiovascular disease mortality among patients of 21 non-metastatic cancers. *Journal of Advanced Research*. IF 10.7. **2nd Author**
9. Ye Y, Tong HYK, Chong WH, Li Z, Tam PKH, Baptista-Hon DT, **Monteiro O** (18/02/2024). A systematic review and meta-analysis of the effects of long-term antibiotic use on cognitive outcomes. *Scientific Reports*. IF 5.5. **Corresponding Author**
10. Zhou X, He Y, Xu T, Wu Z, Guo W, Xu X, Liu Y, Zhang Y, Shang H, Huang L, Yao Z, Li Z, Su L, Li Z, Feng T, Zhang S, **Monteiro O**, Cunha RA, Huang ZL, Zhang K, Li Y, Cai X, Qu J, Chen JF (08/02/2024). 40 Hz light flickering promotes sleep through cortical adenosine signaling. *Cell Research*. IF 44.1. Contributing Author
11. Wang J, Gao Y, Wang F, Zeng S, Li J, Miao H, Wang T, Zeng J, Baptista-Hon D, **Monteiro O**, Guan T, Cheng L, Lu Y, Luo Z, Li M, Zhu JK, Nie S, Zhang K, Zhou Y (08/01/2024). Accurate estimation of biological age and its application in disease prediction using a multimodal image Transformer system. *PNAS*. IF 11.1. Contributing Author
12. Li Z, He J, Yin Y, Tang L, Liu Y, **Monteiro O**, Zeng F (21/12/2023). SARS-CoV-2 pathogenesis in the gastrointestinal tract mediated by Spike-induced intestinal inflammation. *Precision Clinical Medicine*. IF 5.3. **Corresponding Author**

13. Ye Y, Sarkar S, Bhaskar A, Tomlinson B, **Monteiro O** (21/06/2023). Using ChatGPT in a clinical setting: A case report. *MedComm – Future Medicine*. **Corresponding Author**
14. Baptista-Hon DT, Fesalbon GJW, **Monteiro O** (21/11/2022). Changing clinical features of the 2022 monkeypox global health emergency. *MedComm – Future Medicine*. Contributing Author
15. **Monteiro O** (17/10/2022). How will previous infection or current vaccination strategies protect us from future SARS-CoV-2 variant infections? *MedComm – Future Medicine*. **1st Author**
16. **Monteiro O**, Li YW, Baptista-Hon DT (16/08/2022). Phylogenomic characterization of the 2022 outbreak of monkeypox virus—The importance of sustained genetic surveillance. *MedComm – Future Medicine*. **1st Author**
17. Zhou Z, Du P, Li N, Xiong X, Tang S, Dai Q, Wang T, Yu M, Man M, Lam K, Baptista-Hon DT, Tai WH, **Monteiro O**, Ng WS, Lee UM, Liu Z, Zhang K, Li G (June 2022). Homologous or heterogenous vaccination boosters enhance neutralizing activities against SARS-CoV-2 Omicron BA.1 variant. *MedComm*. IF 10.7. Contributing Author
18. **Monteiro O**, Bhaskar A, Wong IN, Ng AKM, Baptista-Hon DT (Dec 2021). Teaching bioelectricity and neurophysiology to medical students using LabAXON simulations. *Adv Physiol Ed*. IF 2.89. **1st Author**
19. **Monteiro O**, Bhaskar A, Ng AKM, Murdoch CE, Baptista-Hon DT (Oct 2021). Computer-based virtual laboratory simulations: LabHEART cardiac physiology practical. *Adv Physiol Ed*. IF 2.89. **1st Author**
20. **Monteiro O**, Chen CW, Bingham R, Rowland P, Argyrou A, Buxton R, Pancevec C, Jones E, Bridges A, Gatfield K, Krauss S, Lambert J, Langston R, Schweiger S, Uings I (2018). Pharmacological disruption of the MID-1/ α 4 interaction reduces mutant Huntingtin levels in primary neuronal cultures. *Neuroscience Letters* 673, pp. 44-50. IF 2.026. Contributing Author
21. King R, **Monteiro O**, Etherington L, Swinny J, Lambert JJ, Langston RF, Schweiger S (in preparation). Early cognitive and synaptic plasticity deficits in HdhQ111 mice are reversed by inhibition of α 5-GABAA receptors. *Neuropharmacology*. IF 5.1026. Equal Contribution
22. Arnoux I, Willam M, Griesche N, Krummeich J, Watari H, Offermann N, Weber S, Dey NP, Chen CW, **Monteiro O**, Buettner S, Meyer K, Bano D, Radyushkin K, Langston RF, Lambert JJ, Wanker E, Methner A, Krauss S, Schweiger S, Stroh A (2018). Early cortical network dysfunction and behavior changes in a mouse model of Huntington's Disease can be reversed by Metformin. *eLife*. IF 7.725. Contributing Author
23. Etherington L, Mihalik B, Pálvölgyi A, Ling I, Pallagi K, Gunn BG, Brown AR, Livesey MR, **Monteiro O**, Belelli D, Barkóczy J, Spedding M, Lambert JJ, Antoni FA (2017). Selective targeting of extra-synaptic α 5-GABAA receptors by S44819 (Egis-13529), a novel competitive GABAA receptor inhibitor compound. *Neuropharmacology* 125, pp. 353-364. IF 5.1026. Contributing Author
24. **Monteiro O**, Wiegand UK, Ludwig M (2011). Vesicle degradation in dendrites of magnocellular neurones of the rat supraoptic nucleus. *Neuroscience Letters* 489, pp. 30-33. IF 2.026. **1st Author**