

Curriculum Vitae

Dr Stephen Fitter

Post-doctoral Research Fellow
University of Adelaide



● Educational Background & Professional Experience

2014–	Myeloma Research Lab, University of Adelaide, Research Fellow
2006–2014	Bone and Cancer Lab, IMVS, Research Associate
2003–2006	Flinders Medical School, Flinders University, PhD

● Research Interests

Dr Fitter completed a PhD in Combinatorial Chemistry at Flinders University, School of Medicine, Adelaide, South Australia. He subsequently joined the Bone and Cancer Lab at the Institute of Medical and Veterinary Sciences studying the effects of tyrosine kinase inhibitors (TKIs), used in the treatment chronic myeloid leukemia (CML), on bone remodeling. These studies revealed that TKIs have direct and indirect effects on bone mass in CML patients which has important implications for patient management. These studies also revealed a link between TKI usage and improved glucose tolerance in CML patients with concurrent type 2 diabetes mellitus (T2DM). This improvement was associated with a 3-fold increase in serum adiponectin levels and increased bone marrow adiposity. Interrogation of the signaling pathways regulated by TKIs in bone revealed an important role for the PI3kinase/AKT/mTORC1 pathway. Dr Fitter subsequently joined the Myeloma Research Laboratory, University of Adelaide, to further investigate the role of the mTORC1 complex in skeletal development and how the mTORC1 complex, specifically in osteoblast, regulates glucose homeostasis. Osteoblasts are critical endocrine cells that help regulate insulin secretion and glucose homeostasis and the mTORC1 complex is an important regulator and transducer of insulin anabolic signaling. Dr Fitter's current research interests are focused on gaining an understanding of the role of mTORC1 signaling in osteoblasts in the development of metabolic disorders with the overarching aim of identifying new druggable targets to help mitigate the effects of hyperglycemia in T2DM.

● Publications

1. Tangseefa, P., Martin, S.K., Arthur, A., Panagopoulos, V., Page, A.J., Wittert, G.A., Proud, C.G., Fitter, S. & Zannettino, A.C.W. (2021a) Deletion of Rptor in pre-osteoblasts reveals a role for the mTORC1 complex in dietary-induced changes to bone mass and glucose homeostasis in female mice. *JBMR Plus*, n/a, e10486.
2. Tangseefa, P., Martin, S.K., Chin, P.Y., Breen, J., Mah, C.Y., Baldock, P.A., Wittert, G.A., Page, A.J., Proud, C.G., Fitter, S. & Zannettino, A.C.W. (2021b) The mTORC1 complex in pre-osteoblasts regulates whole-body energy metabolism independently of osteocalcin. *Bone Research*, 9, 10.
3. Xie, J., Shen, K., Jones, A.T., Yang, J., Tee, A.R., Shen, M.H., Yu, M., Irani, S., Wong, D., Merrett, J.E., Lenchine, R.V., De Poi, S., Jensen, K.B., Trim, P.J., Snel, M.F., Kamei, M., Martin, S.K., Fitter, S., Tian, S., Wang, X., Butler, L.M., Zannettino, A.C.W. & Proud, C.G. (2020) Reciprocal signaling between mTORC1 and MNK2 controls cell growth and oncogenesis. *Cell Mol Life Sci*.
4. Martin, S.K., Fitter, S., El Khawanky, N., Grose, R.H., Walkley, C.R., Purton, L.E., Ruegg, M.A., Hall, M.N., Gronthos, S. & Zannettino, A.C.W. (2018) mTORC1 plays an important role in osteoblastic regulation of B-lymphopoiesis. *Scientific reports*, 8, 14501.
5. Fitter, S., Matthews, M.P., Martin, S.K., Xie, J., Ooi, S.S., Walkley, C.R., Codrington, J.D., Ruegg, M.A., Hall, M.N., Proud, C.G., Gronthos, S. & Zannettino, A.C.W. (2017) mTORC1 Plays an Important Role in Skeletal Development by Controlling Preosteoblast Differentiation. *Mol Cell Biol*, 37.