



Professor Benjamin Kile

Head, Department of Anatomy and Developmental Biology



Monash Biomedicine Discovery Institute
Development and Stem Cells Program

EMAIL benjamin.kile@monash.edu

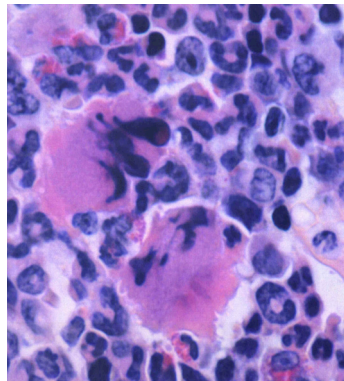
TELEPHONE +61 3 9902 9100

WEB <http://www.med.monash.edu.au/anatomy/research/kile-laboratory.html>

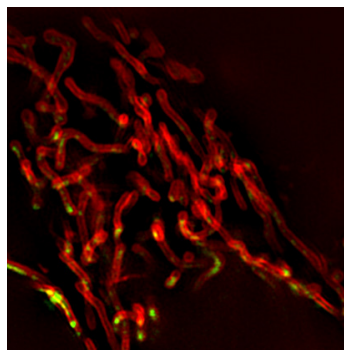
The Kile lab has a longstanding interest in the development, survival and function of blood cells. Using molecular approaches combined with state-of-the-art imaging technologies, we seek to understand the regulation of key processes like apoptosis at steady state, and in disease settings such as leukemia and inflammatory disease.

Research Projects

1. Apoptosis, mitochondrial damage and the innate immune response
2. The role of senescence, death and clearance in blood cell homeostasis
3. Caspases, infection and cancer



Bone marrow megakaryocytes (large pink cells) dying in response to targeted "BH3 mimetic" anti-cancer therapy



3D structured illumination microscopy image of the mitochondrial network in a dying cell

Selected significant publications:

1. Pleines I, Woods J, Chappaz S, Kew V, Foad N, Ballester-Beltrán J, Aurbach K, Lincetto C, Lane RM, Schevzov G, Alexander WS, Hilton DJ, Astle W, Downes K, Nurden P, Westbury SK, Mumford AD, Obaji SG, Collins PW, NIHR BioResource, Hardeman EC, Ouwehand WH, Gunning PW, Turro E, Tijssen MR, **Kile BT**. 2017 Mutations in tropomyosin 4 underlie a rare form of human macrothrombocytopenia. *J Clin Invest*. 127(3):814-829.
2. White MJ, McArthur K, Metcalf D, Lane RM, Cambier JC, Herold MJ, van Delft MF, Bedoui S, Lessene G, Ritchie ME, Huang DC, **Kile BT**. 2014 Apoptotic caspases suppress mtDNA-induced STING-mediated type I IFN production. *Cell* 159(7):1549-62.
3. Josefsson EC, James C, Henley KJ, Debrincat MA, Rogers KL, Dowling MR, White MJ, Kruse EA, Lane RM, Ellis S, Nurden P, Mason KD, O'Reilly LA, Roberts AW, Metcalf D, Huang DC, **Kile BT**. 2011 Megakaryocytes possess a functional intrinsic apoptosis pathway that must be restrained to survive and produce platelets. *J Exp Med*. 208(10):2017-31.
4. Loughran SJ, Kruse EA, Hacking DF, de Graaf CA, Hyland CD, Willson TA, Henley KJ, Ellis S, Voss AK, Metcalf D, Hilton DJ, Alexander WS, **Kile BT**. 2008 The transcription factor Erg is essential for definitive hematopoiesis and the function of adult hematopoietic stem cells. *Nature Immunology* 9(7):810-9.
5. Mason KD, Carpinelli MR, Fletcher JL, Collinge JE, Hilton AA, Ellis S, Kelly PN, Ekert PG, Metcalf D, Roberts AW, Huang DC, **Kile BT**. 2007 Programmed anuclear cell death delimits platelet life span. *Cell* 128(6):1173-86.