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Dr Neena Kalia

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Teaching

- Course Organiser for BDS 1 Biological Sciences
- Module Coordinator for BDS 1 DRE-Digestion
- Core Lectures on BDS 1 Digestive System
- Lectures on Intravital Microscopy and PSIBS Course
- Small Group Teaching on Cardiovascular, Digestion, Respiratory and Renal topics for MBChB, BDS and BMedSci
- Delivery of MBChB SSA courses

Research

Dr Kalia's research is focussed on identifying the pathophysiological mechanisms underlying ischemia-reperfusion (I/R) injury, particularly the contributory role of platelets. Furthermore, she is also determining strategies, particularly the use of adult bone marrow derived stem cells, that may be of therapeutic benefit following I/R injury. Hematopoietic and (HSC) mesenchymal stem cells (MSC) can migrate to injured tissues and help in tissue repair. However, the events that govern their recruitment to injured tissue microcirculation and mechanisms that can enhance their recruitment are unclear. Therefore, her research focuses on examining the molecular adhesive events involved in HSC/MSC recruitment to different vascular beds following injury, including the liver, gut, kidney and muscle. Inflammatory and stem cell trafficking is monitored predominantly by state-of-the-art confocal based intravital microscopy which allows real-time and dynamic microcirculatory images to be captured *in vivo*. This technique allows numerous microcirculatory disturbances to be quantitated including the various events of the adhesion cascade (rolling/adhesion/transmigration) and also changes in vascular integrity.

Other activities

- Supervision of BMedSci and PhD projects
- BDS 1 Biological Sciences Sub-Committee **–** Chair
- CEM Learning and Teaching Committee
- School of Dentistry Curriculum Development Committee
- Birmingham Ethical Review Sub-Committee (BERSC)
- Birmingham University Stem Cell Centre Advisory Committee (BUSCC)
- College Mentor for Postdoctoral Training and Career Development
- Technology Hub Working Group Committee
- College 'Grant Clinic' Member
- British Microcirculation Society Committee – Proceedings Editor
- *Microcirculation* – Editorial Board
- *World Journal of Gastroenterology* – Editorial Board
- *World Journal of Gastrointestinal Pathophysiology* – Editorial Board

Publications

Kavanagh DPJ, Kalia N. Factors determining Stem Cell Homing to Injured Sites. **Stem Cell Reviews** *(in press).*

Kavanagh DPJ, Kalia N. 'Stem Cell Homing to Injured Organs', for a book entitled 'From Vascular Cell Biology to Cardiovascular Medicine" to be published by Research Signpost / Transworld Research Network, Editors : Adriana Georgescu and Felicia Antohe. (2011) **BOOK CHAPTER** *(in press).*

Kuckleburg CJ, Yates C, Kalia N, Zhao Y, Nash GB, Watson SP, Rainger GE. *Endothelial* cell borne platelet bridges selectively recruit monocytes in human and mouse models of vascular inflammation (2011) **Cardiovasc Res** *(in press).*

Kavanagh DPJ, Durant LE, Crosby HA, Lalor PF, Frampton J, Adams DH, Kalia N. Haematopoietic stem cell recruitment to the hepatic microcirculation following murine ischemia-reperfusion injury is dependent on an a4b1 integrin interaction (2010). **Gut** 59:79-87.

Sadej R, Romanska H, Kavanagh DPJ, Takahashi T, Kalia N, BerditchevskiF. Tetraspanin CD151 regulates TGF beta signaling: implication in tumour metastasis (2010).

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Senis YA, Tomlinson MG, Ellison S, Mazharian A, Lim J, Zhao Y, Kornerup KN, Auger JM, Thomas SG, Dhanjal T, Kalia N, Zhu JW, Weiss A, Watson SP (2009) The tyrosine phosphatase CD148 is an essential positive regulator of platelet activation and thrombosis. **Blood** 113:4942-54.

Ross EA, Freeman S, Zhao Y, Dhanjal TS, Ross EJ, Lax S, Ahmed Z, Hou TZ, Kalia N, Egginton S, Nash G, Watson SP, Frampton J, Buckley CD. (2008) A novel role for PECAM-1 (CD31) in regulating haematopoietic progenitor cell compartmentalization between the peripheral blood and bone marrow. **PLOS One** 4;3(6):e2338.

Kalia N, Auger J, Atkinson B, Watson SP. (2008) Role of FcR g-chain, LAT and PLCg2 in thrombus formation upon mild, laser-induced endothelial injury *in vivo* (2008). **Microcirculation** 15:325-335.

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