

## **Prof Mike Shipston**

### **Selected publications**

#### **2013**

Chen L, Bi D, Tian L, McClafferty H, Steeb F, Ruth P, Knaus HG, **Shipston MJ**. (2013) Palmitoylation of the b4-subunit regulates surface expression of large conductance calcium-activated potassium channel splice variants *J Biol Chem* 288:13136-13144

#### **2012**

Zhou X, Wulfsen I, Korth M, McClafferty H, Lukowski R, **Shipston MJ**, Ruth P, Dobrev D, Wieland T. (2012) Palmitoylation and Membrane Association of STREX Controls BK Channel Regulation by Protein Kinase C. *J Biol Chem* 287:32161-32171

Tian, L., H. McClafferty, H.-G. Knaus, P. Ruth and M.J. Shipston. (2012). Distinct Acyl Protein Transferases and Thioesterases Control Surface Expression of Calcium-activated Potassium Channels. *J Biol Chem* 287(18): 14718-14725.

#### **2011**

Liang Z, Chen L, McClafferty H, Lukowski R, Macgregor D, King JT, Rizzi S, Sausbier M, McCobb DP, Knaus HG, Ruth P, **Shipston MJ** (2011) Control of the hypothalmo-pituitary-adrenal axis activity by the intermediate conductance calcium-activated potassium channel, SK4. *J Physiol*. 589:5965-86

Ross FA, Rafferty JN, Dallas ML, Ogunbayo O, Ikematsu N, McClafferty H, Tian LJ, Widmer H, Rowe ICM, Wyatt CN, Shipston MJ, Peers C, Hardie DG, Evans AM (2011) Selective Expression in Carotid Body Type I Cells of a Single Splice Variant of the Large Conductance Calcium- and Voltage-activated Potassium Channel Confers Regulation by AMP-activated Protein Kinase. *Journal of Biological Chemistry* 286.

#### **2010**

Jeffries O, Geiger N, Rowe ICM, Tian LJ, McClafferty H, Chen L, Bi DL, Knaus HG, Ruth P, Shipston MJ Palmitoylation of the S0-S1 Linker Regulates Cell Surface Expression of Voltage- and Calcium-activated Potassium (BK) Channels. *Journal of Biological Chemistry* 285:33307-33314.

Tian LJ, McClafferty H, Jeffries O, Shipston MJ Multiple Palmitoyltransferases Are Required for Palmitoylation-dependent Regulation of Large Conductance Calcium- and Voltage-activated Potassium Channels. *Journal of Biological Chemistry* 285:23954-23962.

Chen L, Jeffries O, Rowe ICM, Liang Z, Knaus HG, Ruth P, Shipston MJ (2010) Membrane Trafficking of Large Conductance Calcium-activated Potassium Channels Is Regulated by Alternative Splicing of a Transplantable, Acidic Trafficking Motif in the RCK1-RCK2 Linker. *Journal of Biological Chemistry* 285:23263-23273.

#### **2008**

Tian I, Jeffries OJ, McClafferty H, Molyvdas A, Rowe ICM, Saleem F, Chen L, Greaves J, Chamberlain LH, Knaus HG, Ruth P, Shipston MJ (2008) Palmitoylation

gates phosphorylation-dependent regulation of BK potassium channels. *Proc Natl Acad Sci USA* 105:21006-21011

Tian L, McClafferty H, Chen L, Shipston MJ (2008) Reversible tyrosine protein phosphorylation regulates large conductance voltage- and calcium-activated potassium channels via cortactin. *Journal of Biological Chemistry* 283:3067-3076

#### **2007**

Brunton PJ, Sausbier M, Wietzorrek G, Sausbier U, Knaus H-G, Russell JA, Ruth P, and Shipston MJ (2007) Hypothalamic-pituitary-adrenal-axis hyporesponsiveness to restraint stress in mice deficient for large-conductance voltage and calcium-activated potassium (BK) channels. *Endocrinology* 148: 5496-5506

#### **2006**

Tian LJ, Chen L, McClafferty H, Sailer CA, Ruth P, Knaus HG, Shipston MJ (2006) A noncanonical SH3 domain binding motif links BK channels to the actin cytoskeleton via the SH3 adapter cortactin. *FASEB Journal* 20:2588-

#### **2005**

McCartney CE, McClafferty H, Huibant J-M, Rowan EG, Shipston MJ, and Rowe ICM (2005). A cysteine rich motif confers hypoxia sensitivity to mammalian BK channel alpha-subunits. *Proceedings of the National Academy of Science USA* 102: 17870-17876.

Chen L, Tian L, MacDonald SH-F, McClafferty H, Hammond MSL, Huibant JM, Ruth P, Knaus H-G, Shipston MJ (2005) Functionally diverse complement of large-conductance calcium- and voltage- activated potassium channel (BK) alpha-subunits generated from a single site of splicing. *J Biol Chem* 280: 33599-33609

McCartney CE, McClafferty H, Huibant J-M, Rowan EG, Shipston MJ, Rowe ICM (2005) A cysteine rich motif confers hypoxia sensitivity to mammalian BK channel alpha-subunits. *Proc Natl Acad Sci USA* (in press)

Sausbier M, Arntz C, Bucurenciu I, Zhao H, Zhou X-B, Sausbier U, Feil S, Kamm S, Essin K, Sailer C. A, Abdullah U, Krippeit-Drews P, Feil R, Hofmann F, Knaus H-G, Kenyon C, Shipston MJ, Storm JF, Neuhuber W, Korth M, Schubert R, Gollasch M, Ruth P (2005) Elevated blood pressure linked to primary hyperaldosteronism and impaired vasodilation in BK channel-deficient mice. *Circulation* 112: 60-68

#### **2004**

Duncan RR, Bergmann A, Cousin MA, Apps DK, Shipston MJ (2004) Multi-dimensional time-correlated single photon counting (TCSPC) fluorescence lifetime imaging microscopy (FLIM) to detect FRET in cells. *Journal of Microscopy* 214: 1-15 [Front cover]

Sausbier M, Hu H, Arntz C, Feil S, Kamm S, Adelsberger H, Sausbier U, Sailer CA, Feil R, Hofmann F, Korth M, Shipston MJ, Knaus H-G, Wolfer DP, Pedroarena CM, Storm JF, Ruth P (2004) Cerebellar ataxia and Purkinje cell dysfunction caused by Ca<sup>2+</sup>-activated K<sup>+</sup> channel deficiency. *Proc Natl Acad Sci USA* 101: 9474-9478

Tian L, Coghill LS, McClafferty H, MacDonald SH-F, Antoni FA, Ruth P, Knaus H-G, Shipston MJ (2004) Distinct stoichiometry of BKCa channel tetramer phosphorylation specifies channel activation and inhibition by cAMP-dependent protein kinase. *Proc Natl Acad Sci USA* 101: 11897-11902

### **2003**

Duncan RR, Grieves J, Wiegand UK, Matskevich I, Bodammer G, Apps DK, Shipston MJ, Chow RH (2003) Functional and spatial segregation of secretory vesicle pools according to vesicle age. *Nature* 422: 176-180 [Front cover]

Tian L, Coghill LC, MacDonald SH-F, Armstrong DL, Shipston MJ (2003) Leucine zipper domain targets PKA to mammalian BK channels. *Journal of Biological Chemistry* 278: 8669-8677

Widmer H, Rowe ICM, Shipston MJ (2003) Conditional protein phosphorylation regulates BK channel activity in rat cerebellar Purkinje neurones. *Journal of Physiology* 552: 379-391

### **2002**

Erxleben C, Everhart AL, Romeo C, Florance H, Bauer MB, Alcorta DA, Rossie S, Shipston MJ, Armstrong DL (2002) Interacting effects of N-terminal variation and STREX-exon splicing on Slo potassium channel regulation by calcium, phosphorylation and oxidation. *Journal of Biological Chemistry* 277: 27045-27052

### **2001**

Tian L, Duncan RR, Hammond SL, Coghill LS, Wen H, Rusinova R, Clark AG, Levitan IB, Shipston MJ (2001) Alternative splicing switches potassium channel sensitivity to protein phosphorylation. *Journal of Biological Chemistry* 276:7717-7720. [Accelerated Communication]

Tian L, Hammond SL, Florance H, Antoni FA, Shipston MJ (2001) Alternative splicing determines calcium-activated potassium channel sensitivity to glucocorticoids. *Journal of Physiology* 537: 57-68