

## **Epitheliome Project publications 2003-2010**

**Walker D C, Southgate J S, Hill G, Holcombe M, Hose D R, Wood S M, MacNeil S and Smallwood R H (2004) The Epitheliome: modelling the social behaviour of cells. *BioSystems* 76:89-100**

**Walker D C, Hill G, Wood S M, Smallwood R H and Southgate J (2004) Agent-based computational modelling of wounded epithelial cell monolayers. *IEEE Trans Nanobioscience* 3:153-163**

**Smallwood R H, Holcombe W M L and Walker D C (2004) Development and validation of computational models of cellular interaction. *Journal of Molecular Histology* 35:659-665**

**Ganguli A, Persson L, Palmer I R, Evans I, Yang L, Smallwood R, Black R, Qwarnstrom E E (2005) Distinct NF- $\kappa$ B Regulation by Shear Stress Through Ras Dependent I $\kappa$ B $\alpha$  Oscillations - Real time Analysis of Flow Mediated Activation in Live Cells *Circ Res* 96:626-634**

**Pogson M, Smallwood R, Qwarnstrom E, Holcombe M. (2006) Formal agent-based modelling of intracellular chemical interactions. *Biosystems*. 85(1):37-45.**

**Walker D, Wood S, Southgate J, Holcombe M, Smallwood R. (2006) An integrated agent-mathematical model of the effect of intercellular signalling via the epidermal growth factor receptor on cell proliferation. *J Theor Biol.* 242:774-789**

**Walker D, Sun T, Macneil S, Smallwood R (2006) Modeling the Effect of Exogenous Calcium on Keratinocyte and HaCat Cell Proliferation and Differentiation Using an Agent-Based Computational Paradigm. *Tissue Eng.* 12(8):2301-2309**

**Coakley S, Smallwood R and Holcombe M (2006) From molecules to insect communities - how formal agent based computational modelling is uncovering new biological facts. *Scientiae Mathematicae Japonicae* 64:185-198**

**Georgopoulos NT, Merrick A, Scott N, Selby PJ, Melcher A, Trejdosiewicz LK. CD40-mediated death and cytokine secretion in colorectal cancer: A potential target for inflammatory tumour cell killing. *Int J Cancer.* 2007; 121: 1373-81.(3)**

**Sun T, McMinn P, Coakley S, Holcombe M, Smallwood R, MacNeil S (2007) An integrated systems biology approach to understanding the rules of keratinocyte colony formation. *J Roy Soc Interface* 4:1077-1092**

Hill K, Errington F, Steele L, Selby PJ, Georgopoulos NT, Melcher A and O'Donnell D. OK432 induces tumour-specific dendritic cell-mediated cytotoxicity which is dependent of CD40:CD40L interactions. *J Immunol.* 2008; 181: 3108-15.

Walker DC, Georgopoulos NT, Southgate J. From pathway to population: a multiscale model of juxtacrine EGFR-MAPK signalling. *BMC Sys Biol.* 2008; 2: 102-119.

Rubenwolf PC, Georgopoulos NT, Clements LA, Feather S, Holland P, Thomas DFM, Southgate J. Expression and localisation of aquaporin water channels in human urothelium in situ and in vitro. *Eur Urol.* 2008; in press.

Sun T, McMinn P, Holcombe M, Smallwood R, MacNeil S (2008) Agent Based Modelling Helps in Understanding the Rules by Which Fibroblasts Support Keratinocyte Colony Formation. *PLoS ONE* 3(5): e2129 doi:10.1371/journal.pone.0002129

Pogson M, Holcombe M, Smallwood R, Qwarnstrom E 2008 Introducing Spatial Information into Predictive NF- $\kappa$ B Modelling – An Agent-Based Approach. *PLoS ONE* 3(6): e2367 doi:10.1371/journal.pone.0002367

Evans, D J W, Lawford, PV, Gunn, J, Walker D, Hose D R, Smallwood R H, Chopard B, Krafczyk M, Bernsdorf J, Hoekstra A (2008) The application of multiscale modelling to the process of development and prevention of stenosis in a stented coronary artery. *Phil Trans Roy Soc A* 366:3343-3360

Krstajic N, Matcher S J, Childs D, Steenbergen W, Hogg R, Smallwood R (2009) Evaluation of a cheap ultrasonic stage for light source coherence function measurement, optical coherence tomography and dynamic focusing. *Meas Sci Technol* 20(10) 107002

Sun T, Smallwood R, MacNeil S (2009) Development of a mini 3D cell culture system using well defined nickel grids for the investigation of cell scaffold interactions. *J Mater Sci-Mater M* 20(7) 1483-1493

Smallwood R H (2009) Computational modeling of epithelial tissues. *Wiley Interdisciplinary Reviews: Systems Biology and Medicine*

Adra S, Sun T, MacNeil S, Holcombe M, Smallwood R (2010) Development of a three dimensional multiscale computational model of the human epidermis. *PLoS ONE* 5(1): e8511. doi:10.1371/journal.pone.0008511

Chopra B, Georgopoulos NT, Nicholl A, Hinley J, Oleksiewicz M, Southgate J. Structurally-Diverse PPAR Agonists Induce Apoptosis in Human Uro-Epithelial Cells by a Receptor-Independent Mechanism

Involving Store-Operated Calcium Channels. *Cell Proliferation*. 2009; 42: 688-700. (7)

Walker DC, Georgopoulos NT, Southgate J. Anti-social cells: predicting the influence of E-cadherin loss on the growth of epithelial cell populations. *J Theor Biol*. 2009 in press

Walker DC, Southgate J. The virtual cell - a candidate co-ordinator for 'middle-out' modelling of biological systems. *Brief Bioinform* 2009;10:450-461.

Sun T, Adra S, Smallwood R, Holcombe M, MacNeil S (2010) Exploring hypotheses of the actions of TGF- $\beta$ 1 in epidermal wound healing using a 3D computational multiscale model of the human epidermis. *PLoS ONE* 4(12): e8515. doi:10.1371/journal.pone.0008515