

# Professor John F Marshall



## Research Interests

My main research areas are in Adhesion, Integrins and Metastasis. My research group's main interests are:

- The biology of tumour invasion, specifically the roles of integrin adhesion molecules, using quantitative, 3-dimensional, organotypic invasion assays, that we continue to develop.
- We have concentrated on the role of  $\alpha\beta6$ , not detectable on most normal tissues, but upregulated in many solid tumours, and an important new therapeutic target. By understanding its biology we hope to develop novel therapies.
- $\alpha\beta6$ -directed imaging and therapy for cancer is almost a reality. We have identified and used a peptide highly specific for  $\alpha\beta6$  as a radiotracer for high resolution imaging of  $\alpha\beta6$ -positive (i.e. potentially more aggressive) cancers. We hope clinical trials should commence 2015.
- With collaborators we have also developed human antibodies to  $\alpha\beta6$  that we are developing for human anti cancer therapy.

## Major Funders

- Breast Cancer Campaign
- DebRA
- Medical Research Council
- Pancreatic Cancer Research Fund
- BBSRC

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## Recent Publications

- Therapeutic targeting of integrin  $\alpha\beta6$  in breast cancer. Moore KM, Thomas GJ, Duffy SW, Warwick J, Gabe R, Chou P, Ellis IO, Green AG, Haider S, Brouillette K, Saha A, Vallath S, Bowen R, Chelala C, Eccles D, Tapper WJ, Thompson AM, Quinlan P, Jordan L, Gillett C, Brentnall A, Violette S, Weinreb PH, Kendrew J, Barry ST, Hart IR, Jones JL and **Marshall JF**. *J Natl Cancer Inst.* (2014) 106(8)
- Rigidity sensing and adaptation through regulation of integrin types. Elosegui-Artola A, Bazellières E, Allen MD, Andreu I, Oria R, Sunyer R, Gomm JJ, **Marshall JF**, Jones JL, Trepas X, Roca-Cusachs P. (2014) *Nat Mater.* 13(6):631-7
- Altered microenvironment promotes progression of preinvasive breast cancer: myoepithelial expression of  $\alpha\beta6$  integrin in DCIS identifies high-risk patients and predicts recurrence. Allen MD, Thomas GJ, Clark S, Dawoud MM, Vallath S, Payne SJ, Gomm JJ, Dreger SA, Dickinson S, Edwards DR, Pennington CJ, Sestak I, Cuzick J, **Marshall JF**, Hart IR, Jones JL. (2014) *Clin Cancer Res.* 20:344-57.
- Pre-clinical SPECT-CT imaging of  $\alpha\beta6$  integrins for molecular stratification of Idiopathic Pulmonary Fibrosis. John AE, Lockett JC, Tatler AL, Awais RO, Habgood A, Ludbrook S, Blanchard AD, Perkins AC, Jenkins RG, **Marshall JF**. (2013) *J Nucl Med* 54:2146-2152

