

# Brendan Doyle

**Assistant Professor/Specialist Registrar, Dept. of Histopathology, Trinity College Dublin.**

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## Education

### Degrees:

BA MB BCH BAO (Hons), Trinity College Dublin, 2003.

PhD. Dept. of Molecular Pathology and Cancer Studies, School of Medicine, University of Glasgow. *“Investigating the roles of RKIP and p53 in colorectal carcinoma.”* 2010.

## Undergraduate awards

- Elected a Scholar of Trinity College Dublin in 2000
- Elected an entrance exhibitor of Trinity College Dublin in 1996.
- Received the Dr. Henry Cooke Drury student research fellowship, 2002.
- Book prizes for overall first class honours in 1998 and 2000.

## Postgraduate Awards:

- Plenary Prize winner for best oral presentation at the 199<sup>th</sup> scientific meeting of the Pathological Society, Cambridge 2011.
- 1<sup>st</sup> prize, Irish Society of Gastroenterology Winter Meeting, Dublin, 2010.
- Plenary Prize winner for best oral presentation at the 5th Joint Meeting of the British Division of the IAP and the Pathological Society, Cardiff 2009.
- Travel/Conference Bursary, Pathological Society, 2009.
- 3<sup>rd</sup> prize in the Sir Alastair Currie poster award at the Pathological Society Winter meeting, January 2006.

## Employment History

**July 2011-Present:** Assistant Professor/Specialist Registrar, Dept. of Histopathology, Trinity College Dublin.

**January 2011-July 2011:** Specialist Registrar in Histopathology, Coombe Women and Infant's University Hospital, Dublin 8.

**July 2010-January 2011:** Specialist Registrar in Histopathology, St. James's Hospital, Dublin 8.

**June 2010-Present:** Associate Clinical Scientist, Beatson Institute for Cancer Research, Glasgow, UK.

**January 2007-June 2010:** Clinical Research Fellow, Beatson Institute for Cancer Research, Glasgow, UK.

**July 2006-December 2006:** Specialist Registrar in Histopathology, St. Vincent's University Hospital, Elm Park, Dublin 4.

**July 2004-July 2006:** Senior House Officer in Histopathology, St. Vincent's University Hospital, Elm Park, Dublin 4.

**July 2003-July 2004:** Intern AMNCH, Tallaght and St. Luke's hospital Kilkenny.

## **Professional Memberships**

Member of the Royal College of Pathologists (Part I)

Pathological Society of Great Britain and Ireland (Member of Trainee's sub-committee)

US and Canadian Association of Pathology

British Association of Cancer Research

European Association of Cancer Research

Association of Molecular Pathology

## **Research Funding**

Health Research Board Fellowship in Translational Medicine: 2011-2013

## **List of Publications**

### **Original Research (14)**

**p53 mutation and loss have different effects on tumourigenesis in a novel mouse model of pleomorphic rhabdomyosarcoma.** Doyle B, Morton JP, Delaney DW, Ridgway RA, Wilkins JA, Sansom OJ. *J Pathol.* 2010 Oct;222(2):129-37.

**Sentinel lymph node biopsy in patients with a needle core biopsy diagnosis of DCIS - is it justified?** Doyle B, Al-Mudhaffer M, Kennedy MM, O'Doherty A, Flanagan F, McDermot EW, Kerin MJ, Hill AD, Quinn CM. *J Clin Pathol.* 2009 Jun;62(6):534-8. Epub 2009 Feb 3.

**Liquid Based Cytology improves productivity in cervical screening.** B Doyle, C O'Farrell, B Mahoney, L Turner, D Magee, D Gibbons. *Cytopathology.* 2006 Apr;17(2):60-4.

**Mutant p53 drives invasion by promoting integrin recycling.** Muller PA, Caswell PT, Doyle B, Iwanicki MP, Tan EH, Karim S, Lukashchuk N, Gillespie

DA, Ludwig RL, Gosselin P, Cromer A, Brugge JS, Sansom OJ, Norman JC, Vousden KH. *Cell*. 2009 Dec 24;139(7):1327-41.

**Mice lacking Raf-1 kinase inhibitor protein (RKIP) exhibit exaggerated hypoxia-induced pulmonary hypertension.** Morecroft I, Doyle B, Nilsen M, Kolch W, Mair K, MacLean M. *B J Pharmacol*. 2011 Mar 8. doi: 10.1111/j.1476-5381.2011.01305.x.

**Activation of the PIK3CA/AKT pathway suppresses senescence induced by an activated RAS oncogene to promote tumorigenesis.** AL Kennedy, JP Morton, I Manoharan, DM Nelson, NB Jamieson, JS Pawlikowski, T McBryan, B Doyle, KA Oien, GH Enders, R Zhang, OJ Sansom, PD Adams. *Mol Cell*. 2011 Apr 8;42(1):36-49.

**Dasatinib inhibits the development of metastases in a mouse model of pancreatic ductal adenocarcinoma.** Morton JP, Karim SA, Graham K, Timpson P, Jamieson N, Athineos D, Doyle B, McKay C, Heung MY, Oien KA, Frame MC, Evans TR, Sansom OJ, Brunton VG. *Gastroenterology*. 2010 Jul;139(1):292-303. Epub 2010 Mar 17.

**Mutant p53 drives metastasis and overcomes growth arrest/senescence in pancreatic cancer.** Morton JP, Timpson P, Karim SA, Ridgway RA, Athineos D, Doyle B, Jamieson NB, Oien KA, Lowy AM, Brunton VG, Frame MC, Evans TR, Sansom OJ. *Proc Natl Acad Sci U S A*. 2010 Jan 5;107(1):246-51.

**Raf Kinase Inhibitor Protein RKIP Enhances Signaling by Glycogen Synthase Kinase-3 $\beta$ .** F Al-Mulla, MS Bitar, M Al-Maghrebi, Al Behbehani, W Al-Ali, O Rath, B Doyle, KY Tan, A Pitt, W Kolch. *Cancer Research*. 2011 Feb 15;71(4):1334-43. Epub 2011 Feb 8.

**P-Rex1 is required for efficient melanoblast migration and melanoma metastasis.** C R Lindsay, S Lawn, A D Campbell, W J Faller, F Rambow, R L Mort, P Timpson, A Li, P Cammareri, R A Ridgway, J P Morton, B Doyle, S Hegarty, M Rafferty, I G Murphy, E W McDermott, K Sheahan, K Pedone, A J Finn, P A Groben, N E Thomas, H Hao, C Carson, J C Norman, L M Machesky, W M Gallagher, I J Jackson, L Van Kempen, F Beermann, C Der, L Larue, H C Welch, B W Ozanne and O J Sansom. *Nature Communications*. In Press.

**Spatial Regulation of RhoA Activity during Pancreatic Cancer Cell Invasion Driven by Mutant p53.** Timpson P, McGhee EJ, Morton JP, von Kriegsheim A, Schwarz JP, Karim SA, Doyle B, Quinn JA, Carragher NO, Edward M, Olson MF, Frame MC, Brunton VG, Sansom OJ, Anderson KI. *Cancer Research*. 2011 Feb 1;71(3):747-57. Epub 2011 Jan 25

**Docetaxel resistant prostate cancer cells are sensitive to the cell cycle effects of S-trityl L-cysteine (STLC).** C Wiltshire, B L Singh, J Fleming, B Doyle, R Barnetson, J Stockley, F Kozielski and H Y Leung. *Molecular Cancer Therapeutics*, 2010 Jun;9(6):1730-9. Epub 2010 Jun 1.

**A novel Src kinase inhibitor reduces tumour formation in a skin carcinogenesis model.** Serrels B, Serrels A, Mason SM, Baldeschi C, Ashton GH, Canel M, Mackintosh LJ, Doyle B, Green TP, Frame MC, Sansom OJ, Brunton VG. *Carcinogenesis*. 2009 Feb;30(2):249-57. Epub 2008 Dec 5.

**An Integrative Computational Model for Intestinal Tissue Renewal.** IMM van Leeuwen, GR Mirams, A Walter, A Fletcher, P Murray, J Osborne, S Varma, SJ Young, J Cooper, B Doyle, J Pitt-Francis, L Momtahan, P Pathmanathan, JP Whiteley, SJ Chapman, DJ Gavaghan, OE Jensen, JR King, PK Maini, SL Waters, HM Byrne. **Cell Proliferation.** 2009 Oct;42(5):617-36. Epub 2009 Jul 20.

### **Reviews (1)**

**The Effects of RKIP Loss in Human and in Animal Models of Colorectal Cancer.** Doyle B, Hagan S, Scott L, Sansom OJ, Kolch W. **Forum on Immunopathological Diseases & Therapeutics.** 2011 2(2);111-118.

### **Book Chapters (1)**

**“Pyrosequencing of DNA extracted from Formalin-Fixed Paraffin-embedded tissue”.** B. Doyle, C. O’Riain, K. Appleton. **METHODS IN MOLECULAR BIOLOGY: Formalin-fixed Paraffin-embedded Tissues.** Humana Press, 2011.

## **Presentations**

### **Invited Presentations:**

**RKIP in Mice and Men: The Role of Raf Kinase Inhibitor in Human and Mouse Models of Colorectal Carcinoma.**

First International Workshop on Prognostic and Therapeutic Applications of RKIP in Cancer. University of California, Los Angeles (UCLA). 19-20<sup>th</sup> March 2010.

### **Presentations at International Meetings:**

**The Tumour Suppressor ARF Can Promote Invasion in a p53 Null Setting.** Doyle B, Tan EH, Timpson P, Machesky LM, Ridgway RA, Jeffery RE, Poulson R, Morton JP, Sansom OJ. Plenary Session of the 199<sup>th</sup> Pathological Scientific Meeting, Cambridge, January 2011. Abstract published in Journal of Pathology.

**Transgenic models reveal pre-neoplastic effects of RUNX2 in mammary tumourigenesis.** L McDonald, M Bell, A Terry, A Jenkins, S Mason, J Neil, B Doyle, B Gusterson, J Morris, E Cameron, K Blyth. AICR 30<sup>th</sup> Anniversary Conference, April 2010.

**Investigating Wnt signalling and the cell of origin in intestinal cancer.** RA Ridgway, S Radulescu, B Doyle, EH Tan, D Athineos, J Woodgett, N Barker, H Clevers, A Clarke, OJ Sansom. AICR 30<sup>th</sup> Anniversary Conference, April 2010.

**Co-operation of APC and p53 mutations lead to invasion in a novel colorectal carcinoma mouse model.** B Doyle, EH Tan, JP Morton, P

Timpson, RA Ridgway, JA Wilkins, R Poulson, R Jeffery, OJ Sansom. AICR 30<sup>th</sup> Anniversary Conference, April 2010.

**Mutant p53 promotes tumourigenesis and metastasis in a novel mouse model of pleomorphic rhabdomyosarcoma.** B Doyle, JP Morton, JA Wilkins, DW Delaney, RA Ridgway, W Kolch, OJ Sansom. AICR 30<sup>th</sup> Anniversary Conference, April 2010.

**The role of p53 in invasion in an inducible mouse model of intestinal tumourogenesis.** B Doyle, JA Wilkins, W Kolch and OJ Sansom. Plenary Session of the 5th Joint Meeting of the British Division of the IAP and the Pathological Society 2009. Abstract published in the Journal of Pathology, Volume 219 Issue S1.

**Down-Regulation of RKIP Predicts a Worse Outcome in Dukes B Colorectal Carcinoma. Is This Down-Regulation Due to Hypermethylation?** B Doyle, S Hagan, L Scott, H Mulcahy, K Sheehan, J O'Sullivan, W Kolch. USCAP Annual Meeting, Boston, March 2009. Abstract published in Modern Pathology, Volume 22, January 2009, Issue 1s, January 2009 and in Laboratory Investigation, Volume 89, Issue 1s, January 2009.

**RKIP Expression Levels Predict Survival in a Large Cohort of Colo-Rectal Cancer Patients.** B Doyle, L Scott, S Harden, S Hagan, W Kolch. Joint Meeting of the Pathological Society of Great Britain and Ireland and the Dutch Pathological Society 2008. Abstract published in the Journal of Pathology, 2008, Volume 216, Issue S1.

**Raf Kinase Inhibitor Protein (RKIP), a potential prognostic marker in Dukes B Colorectal Carcinoma.** B Doyle, S Hagan, L Scott, K Sheehan, J'O Sullivan, W Kolch. Pathological Society Winter Scientific Meeting, January 2008. Abstract published in the Journal of Pathology, Volume 214 Issue S1, Pages 1 - 29.

**Sentinel lymph node biopsy following a core biopsy diagnosis of ductal carcinoma in situ: experience of two centres.** B Doyle, A O' Doherty, M Kennedy, F Flanagan, ADK Hill, M Kerin, CM Quinn. 9<sup>th</sup> International Mater Breast Cancer Meeting, April 2006. Abstract published in Irish Journal of Medical Science, 2006;175(2)es2.

**Sentinel lymph node biopsy following a diagnosis of ductal carcinoma in situ on needle core biopsy.** B Doyle, A O' Doherty, ADK Hill, CM Quinn. USCAP annual meeting, February 2006. Abstract published in Modern Pathology, Volume 19 Supplement 19, January 2006. Laboratory Investigation, Volume 86 Supplement 1, January 2006.

**Is sentinel lymph node biopsy warranted in cases of DCIS diagnosed by needle core biopsy?** B Doyle, A O' Doherty, ADK Hill, CM Quinn. Winter meeting of the Pathological Society of Great Britain and Ireland, January 2006. Abstract published in The Journal of Pathology, Volume 208 Issue S1, March 2006

**Liquid Based Cytology improves productivity in cervical screening.** B Doyle, C O'Farrell, B Mahoney, L Turner, D Magee, D Gibbons. British Society of Clinical Cytology, annual scientific meeting, September 2005. Abstract published in Cytopathology, Volume 16 (Supplement 1), September 2005.

## **Presentations at National Meetings:**

**A Novel Animal Model of Colorectal Cancer, Implications for Treatment.** B Doyle, E H Tan, P Timpson, RA Ridgway, R Jefferies, R Poulson, JP Morton, OJ Sansom. Irish Society of Gastroenterology, Winter Meeting, Dublin 2010.

**The Fate of Multiple Prostate Biopsies.** C Dowling, B Doyle, MF O'Brien, A O'Brien, G Lennon, D Mulvin, D Quinlan. Irish Society of Urology, Annual Scientific meeting, 2006.

**Audit of a thyroid FNA practice using the British Thyroid Association THY classification.** B. Doyle, A. O'Callaghan, E. McDermott, R. Gibney, D. Gibbons. Irish association of clinical cytology, Annual scientific meeting, May 2006.

**Immunocytochemical staining of glandular lesions on ThinPrep® preparations with p16INK4A, MIB1 and bcl2: a study including correlation with clinico-pathologic outcome.** P. Whyte, B. Doyle, L. Turner, D. Magee, D. Gibbons. Academy of Medical Laboratory Science, Annual conference, September 2005.

**Fine needle aspiration biopsy of the thyroid: Comparison between manually guided and ultra-sound guided fine needle aspiration.** R Killeen, B Doyle, S Skehan, D Gibbons, R Gibney. Faculty of Radiologists, Royal College of Surgeons of Ireland, Annual Scientific Meeting, September 2005.

**Breast Cancer Reporting in Ireland.** B Doyle, CM Quinn. Irish Society of Surgical Pathology annual meeting, November 2005.