

Georgia Mavria, PhD

Group Leader: Signal Transduction and Tumour Microenvironment Group

Deputy Head: Section of Brain Tumour Research

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<http://www.braincancer.leeds.ac.uk/groups/signal-transduction-and-tumour-microenvironment-group/>

<http://www.braincancer.leeds.ac.uk/groups/signal-transduction-and-tumour-microenvironment-group/dr-georgia-mavria-group-leader/>

Overview

Work in my group is focused on elucidating microenvironmental signalling pathways that promote brain cancer progression and resistance to therapy. In parallel we work on mechanisms of angiogenesis that underpin responses to ischemia and ways to promote new vessel growth.

Research and Academic Positions

2017- Deputy Head, Section of Brain Tumour Research, Leeds Institute of Cancer and Pathology, University of Leeds.

2015- Group Leader, Leeds Institute of Cancer and Pathology, Faculty of Medicine and Health, University of Leeds.

2009-2015 BHRC Senior Translational Research Fellow, Tenure Track Faculty, Leeds Institute of Cancer and Pathology, University of Leeds.

2005 - 2009 Senior Scientist and Project Leader, Institute of Cancer Research, London

2000 - 2005 Independent Senior Scientist, Institute of Cancer Research, London

1997-2000 Postdoctoral Scientist, Institute of Cancer Research, London

1995-1997 Postdoctoral scientist, MRC National Institute of Medical Research, London

Career Breaks

6-month maternity leave in 2005 and 2007

Education and Qualifications

1995 PhD, Faculty of Biological Sciences, University of Leeds (Emma & Leslie Reid University scholarship)

1991 BSc, Department of Combined Studies, University of Leeds, Grade 2.1

1988 A-levels Biology, Chemistry, Physics - Moraitis School, Athens, Greece

1987 Greek Lyceum *apolytirion*

Research Interests

Cancer angiogenesis, cancer cell invasion and metastasis
Signal transduction
Tumour-stromal cell interactions

Professional Memberships

European Neuro-oncology society (since 2017)
British Society for Cardiovascular Research (since 2017)
British Association and for Cancer Research (since 2009)
European Association for Cancer Research (since 2009)
North American Vascular Biology Organization (since 2008)
Biochemical Society (since 1996)

Teaching

MEDM5221M Cancer Biology module, MSc Molecular Medicine
MBChB 1st year 'Research Evaluation and Special studies'
Intercalated BSc Clinical Sciences (Molecular Medicine)
FRCR, Clinical and Medical Oncology Basic Sciences Course

Professional Activities and Administrative Duties

2017-	Deputy head, Section of Brain Tumour Research, LICAP
2016-	Cancer Biology Examiner, First FRCR Examination Board, The Royal College of Radiologists
2016-	Organiser, School of Medicine St James's Campus External Seminars
2015-	Committee member, Tissue access committee for the Leeds Breast Cancer Tissue Bank
2015-	Panel member, LICAP studentships selection panel
2010-2014	Academic lead, live cell imaging microscopy
2013-2014	Committee member, LICAP Seminar Series Committee
2010-2013	Organiser, Leeds CRUK centre 'Research in Progress' seminar series

Peer Review (as PI)

Papers reviewed

Nature Communications (2017), PLoS ONE (2015, 2016, 2017), Scientific reports (2016), Molecular Cancer (2016, 2017), Molecular Cancer Research (2013, 2015, 2016), Oncogene (2013, 2014), Cancers (2013), Atherosclerosis (2012), Molecular & Cellular Biology (2009, 2010, 2012)

Grants reviewed

BCN (2017), BHF (2017), MRC (2015, 2016), BBSRC (2014, 2015), CRUK (2010), Netherlands Organisation for scientific Research Earth and Life Sciences (2010), Breast Cancer Now (2009)

Examination

2017	External PhD Examiner	MA Hermida (N Leslie lab)	Heriot-Watt University
2016	External PhD Examiner	VA Salisbury (V Heath lab)	University of Birmingham
2016	External PhD Examiner	T Frolov (P Frankel lab)	UCL
2015	External PhD Examiner	M Richards (H Mellor lab)	Bristol University
2011	PhD transfer viva	L Shaw (S Burcill lab)	University of Leeds

Workshop Organisation

2011 'Workshop on the Endothelial Cell Actin Cytoskeleton' NCRI Liverpool

Research Fellows and Assistants/ Technicians Mentored or Supervised

Georgia Mavria team

Chiara Galloni	Research Fellow	2016-
Kathryn McMahon	Research Fellow	2010-2014
Ann Sanford	Research Technician	2010-2014
Tracey Harvey	Research Fellow	2009-2011
Sabu Abraham	Research Fellow	2005-2010
Maggie Yeo	Research Assistant	2004-2009
Demelza Bird	Research Technician	2004-2009

PhD Supervision

2016-	Anastasia Widyadari (Lead Supervisor)
2015-	Teklu Egnuni (Lead supervisor)
2015-	Leander Stewart (Lead supervisor)
2016-	Joanne Topping (Co-supervisor)
2013-2016	Gary Grant (Lead supervisor, completed under 4 years)
2010-2014	Claire Nash (Co-supervisor, completed under 4 years)
2009-2012	Marghe Scarcia (Lead supervisor, completed under 4 years)

In the press

October 2017 (12th & 13th)

Funding for Leeds scientist's breast cancer research – BBC News Online (Sheffield & South Yorkshire)

http://www.bbc.co.uk/news/live/uk-england-leeds-41598183?ns_mchannel=social&ns_source=twitter&ns_campaign=bbc_live&ns_linkname=59df9745e4bocfo501cac4f3%26Funding%20for%20Leeds%20scientist%27s%20breast%20cancer%20research%26&ns_fee=0#post_59df9745e4bocfo501cac4f3

Made in Leeds interview (13th October, 05:15)

<https://www.madetelevision.tv/catchup/?c=news&p=x4ug8n&v=x64sznt&pg=1&city=mil>

BBC Radio Leeds – (2:02:13)

<http://www.bbc.co.uk/programmes/p05gy2zm>

June 2015

How removing a protein slows blood vessel growth – Dr Georgia Mavria on angiogenesis in breast cancer brain metastases (Jun 2015)

http://www.leeds.ac.uk/news/article/3714/how_removing_a_protein_slows_blood_vessel_growth_in_tumours

Scientists discover protein that helps breast cancer access blood supply after spread to brain (Jun 2015)

<http://breastcancernow.org/news-and-blogs/news/protein-helps-breast-cancer-access-blood-supply>

Eradicating a single protein in the blood could stop the disease in its tracks, scientists say

<http://www.dailymail.co.uk/health/article-3150851/Hope-breast-cancer-patients-Eradicating-single-protein-blood-stop-disease-tracks-scientists-say.html>

Researchers Pinpoint Single Protein That Increases Spread Of Cancer

<http://atlanta.cbslocal.com/2015/07/06/researchers-pinpoint-single-protein-that-increases-spread-of-cancer/>

Presentations and Invited – Plenary Talks

Travel expenses were covered for all invited talks, registration and travel were covered for plenary talks.

- **Invited talk**, UCL, 1st December 2017 – Host Dr Paul Frankel.
- **Invited talk**, Breast Cancer Now invited charity visit and talk, 'Investigating the mechanism behind the development of Breast Cancer brain Metastasis', BCN, London, October 2017 – host Dr Richard Berks.
- **Invited talk** 'Investigating the function of the guanine nucleotide factor DOCK4 in angiogenesis, invasion and metastasis April 2016, Institute of Cancer Research– Host Dr Olivia Rosanesse.
- **Oral presentation** Gordon conference Angiogenesis, 'A Rac/Cdc42 Exchange Factor Complex Promotes Formation of Lateral Filopodia and Blood Vessel Lumen Morphogenesis', Newport RI, August 2015.
- **Oral presentation** (lab member Gary Grant) British Neuro-Oncology Society BNOS annual meeting 'Role of the Guanine Nucleotide Exchange Factor DOCK4 in Breast Cancer Brain Metastases and Glioblastoma', June 2015.
- **Oral presentation** Angiogenesis and Vascular Remodelling: New perspectives, 'Control of blood vessel lumen morphogenesis by the guanine nucleotide exchange Factor DOCK4', Chester, June 2014.
- **Invited talk** 'Control of filopodia formation and blood vessel lumen morphogenesis by Rho family members and regulators', Institute of Cancer Research, Sutton, April 2014 – host Professor Sue Eccles.
- **Plenary talk** 'Basic Science update: The role of VEGF and integrins in GBM' Roche sponsored symposium, British Neuro-oncology Society Annual Meeting, Durham University, July 2013.
- **Oral presentation** Beatson International Cancer Conference: Targeting the Tumour Stroma, Glasgow, July 2013.
- **Oral presentation** Yorkshire Cancer Research Annual Scientific Meeting, 'Signalling and novel pathways in tumour angiogenesis: understanding hypoxia downstream of VEGF', Harrogate, June 2013.

- **Invited talk** 'Angiogenesis and the tumour microenvironment', Leeds-Sheffield CRUK Centres Microenvironment Workshop, Sheffield, February 2013 – host Professors Gillian Tozer and Pam Jones.
- AACR conference on Tumor Invasion and Metastasis, Omni San Diego, January 2013 (poster presentation).
- **Invited talk** Department of Molecular and Developmental Genetics, Centre for Human Genetics, Leuven, Belgium, March 2012 – host Dr An Zwijsen, Laboratory of Developmental Signalling.
- **Invited talk** NCRI Liverpool, October 2011.
- **Oral presentation** EC8 Zurich, 8th International Symposium on the Biology of Endothelial Cells, Zurich, June 2011.
- **Invited talk** Babraham Institute, Cambridge, May 2011 – host Dr Sonja Vermeren. Signalling department.
- **Invited talk** University College Dublin, October 2010 – host Dr Oliver Blacque, Cilia research group.
- **Invited talk** University of Birmingham, October 2010 – host Dr Vicky Heath, Molecular Angiogenesis group.
- Critical Issues in Tumor Microenvironment, angiogenesis and metastasis: from Bench to Bedside to Biomarkers, Boston, September 2010.
- **Oral presentation** (lab member S Abraham), Kloster Seeon 'Angiogenesis': Molecular Mechanisms and Functional Interactions, September 2010, Kloster Seeon, Germany
- **Invited talk** Multidisciplinary Cardiovascular Research Centre, University of Leeds University of Leeds, July 2010 – host Professor David Beech.
- **Invited talk** Kings College, London, November 2009 – host Professor Anne Ridley.
- NCRI, Birmingham, July 2009 (poster presentation).
- Beatson International Cancer Conference Microenvironment, Motility and Metastasis, July 2009, Glasgow (poster presentation).
- **Oral presentation** Cancer Research UK Angiogenesis meeting, Barts and The London, London, October 2008.
- **Oral presentation** 3rd European Conference on Tumour Angiogenesis and Antiangiogenic therapy, November 2008, Padova, Italy.
- **Oral presentation** Signalling in the Cardiovascular System, Hyannis, MA, September 2008.
- Vascular Biology Workshop, Experimental Biology 2008, San Diego, CA (poster presentation).
- Developmental Vascular Biology Workshop III, Monterey, California, January 2008 (poster presentation).
- **Plenary talk** Cell signalling and novel cancer therapeutics, Royal Society of Medicine, London, November 2007.
- **Invited talk** University of Oxford, Weatherall Institute for Molecular Medicine, November 2007 – host Professor Xin Lu.
- **Invited talk** Imperial College, Hammersmith Campus, NHLI Cardiovascular Sciences Unit, October 2007 – host Professor Anna Randi.
- **Plenary talk** Cellular and Molecular Mechanisms of Tumor Progression and Metastasis, Kloster Seeon, Germany, September 2007.
- **Oral presentation** 4th International Kloster Seeon Meeting Angiogenesis, September 2006, Kloster Seeon, Germany.
- **Invited talk** University of Sheffield, School of Medicine & Biomedical Sciences, December 2006 – host Professor Gill Tozer, CR-UK Tumour Microcirculation Group.

- BACR/BMS Special Conference "Tumour Vasculature: New Targets & Therapies", Cirencester, June 2006 (poster presentation).
- **Oral presentation** Signalling in Normal and Cancer Cells, March 2006, Banff, Canada.

Publications

Papers

Liakouli V, Elies J et al. **Mavria G***, Del Galdo F* (2017). Scleroderma fibroblasts suppress angiogenesis via TGF- β /Caveolin-1 dependent secretion of Pigment Epithelium Derived Factor. Ann Reum Dis 2017-212120 **IF 12.8 *corresponding author**

DiCara DM et al. **Mavria G**, Hoffmann J, Birchmeier W, Gherardi E, McCafferty J (2017). Characterisation and structural determination of a new anti-MET function blocking antibody with binding epitope distinct from the ligand binding domain. Sci. Rep 7:9000. **IF 4.3, 1 citation**

Abraham S, Scarcia M, Bagshaw RD, McMahon K, Grant G, Harvey T, Yeo M, Esteves FO, Thygesen HH, Jones PF, Speirs V, Hanby AM, Selby PJ, Lörger M, Dear TN, Pawson T, Marshall CJ and **Mavria G** (2015). A Rac/Cdc42 exchange factor complex promotes formation of lateral filopodia and blood vessel lumen morphogenesis Nat Commun. **6**, 7286. **IF 11.3, 17 citations**

Nash C, **Mavria G**, Baxter E, Holliday D, Treanor D, Tomlinson D, Novitskaya V, Hanby A, Berdichevski F, and Speirs V. (2015). Development and characterisation of a 3D multi-cellular in vitro model of normal human breast: a tool for cancer initiation studies. Oncotarget **6**, 13731-41. **IF 5.2, 12 citations**

Hetheridge C, **Mavria G***, Mellor H. (2011). Uses of the in vitro endothelial-fibroblast organotypic co-culture assay in angiogenesis research. Biochem Soc Trans. **39**, 1597-600. **IF 2.8, 31 citations**

Kaur S, Leszczynska K, Abraham S, Scarcia M, Hiltbrunner S, Marshall CJ, **Mavria G**, Bicknell R, Heath VL (2011). RhoJ/TCL regulates endothelial motility and tube formation and modulates actomyosin contractility and focal adhesion numbers Arterioscler Thromb Vasc Biol. **31**, 657-64. **IF 6.6, 40 citations**

D'Amico G, Robinson SD, Germain M, Reynolds LE, Thomas GJ, Elia G, Saunders G, Fruttiger M, Tybulewicz V, **Mavria G**, Hodivala-Dilke KM (2010). Endothelial-Rac1 is not required for tumor angiogenesis unless α v β 3-integrin is absent. PLoS One. **22**:e9766. **IF 2.8, 22 citations**

Abraham S, Yeo M, Montero-Balaguer M, Paterson H, Dejana E, Marshall CJ, **Mavria G** (2009). VE-cadherin suppresses sprouting via signalling to MLC2 phosphorylation Curr Biol. **19**, 668-74. **IF 11, 114 citations**

Mavria G, Abraham S, Yeo M and Marshall CJ (2008). Role of MAP-kinase, RhoGTPases and actomyosin contractility in endothelial cell migration and vessel establishment. FASEB Journal **22**, 611. **IF 5.4**

Mavria G*, Vercoulen Y, Yeo M, Paterson H, Karasarides M, Marais R, Bird D, Marshall CJ* (2006). ERK-MAPK signalling opposes Rho-kinase to promote endothelial cell survival and sprouting during angiogenesis Cancer Cell. **9**, 33-44. ***corresponding author**
IF 24, 233 citations

Gonzalez-Garcia A, Pritchard CA, Paterson HF, **Mavria G**, Stamp G, Marshall CJ (2005)
RalGDS is required for tumour formation in a model of skin carcinogenesis. *Cancer Cell*. 7, 219-26.
IF 24, 176 citations

Mavria G*, Harrington KJ, Marshall CJ, Porter CD (2005)
In vivo efficacy of HSV-TK transcriptionally targeted to the tumour vasculature is augmented by combination with cytotoxic chemotherapy. *J Gene Med*. 2005 *J Gene Med*. 7, 263-75. ***corresponding author, IF 2.5, 25 citations**

Croft DR, Sahai E, **Mavria G**, Li S, Tsai J, Lee W, Marshall CJ, Olson MF (2004)
Conditional ROCK activation in vivo induces tumor cell dissemination and angiogenesis *Cancer Res*. 64, 8994-9001. **IF 9.1, 167 citations**

Garefalaki A, Coles M, Hirschberg S, Norton T, **Mavria G**, Hostert A, Kioussis D (2004)
Variegated expression of CD8 alpha resulting from in situ deletion of regulatory sequences. *Immunity*. 16, 635-47. **IF 22.8, 55 citations**

Mavria G, Porter CD (2001)
Reduced growth in response to ganciclovir treatment of subcutaneous xenografts expressing HSV-tk in the vascular compartment. *Gene Ther*. 8, 913-20. **IF 3.1, 23 citations**

Mavria G, Jager U, Porter CD (2000)
Generation of a high titre retroviral vector for endothelial cell-specific gene expression in vivo. *Gene Ther*. 7, 368-76. **IF 3.1, 28 citations**

Mavria G*, Hostert A*, Garefalaki A, * Tolaini M, Roderick K, Norton T, Mee PJ, Tybulewicz VL, Coles M, Kioussis D (1998) ***first co-authors**
Hierarchical interactions of control elements determine CD8alpha gene expression in subsets of thymocytes and peripheral T cells. *Immunity*. 9, 497-508. **IF 22.8, 78 citations**

Mavria G, Hall KT, Jones RA, Blair GE (1998). Transcriptional regulation of MHC class I gene expression in rat oligodendrocytes.
Biochem J. 15, 155-61. **IF 3.8, 12 citations**

Mavria G, Blair GE (1997)
The down-regulation of MHC class I antigens in rat oligodendrocytes is mediated by negative regulatory elements in the class I promoter. *Biochem Soc Trans*. 25, 165S.

Tarazona R, Sponaas AM, **Mavria G**, Zhou M, Schulz R, Tomlinson P, Antoniou J, Mellor AL (1996)
Effects of different antigenic microenvironments on the course of CD8+ T cell responses in vivo. *Int Immunol*. 8, 351-358. **IF 3.7, 17 citations**

Published abstracts

Elies J, Liakouli V et al. **Mavria G**, Del Galdo F (2017). Scleroderma fibroblasts suppress angiogenesis via TGF- β /caveolin-1 dependent secretion of pigment epithelium-derived factor. *Basic & Clinical Pharmacology and Toxicology* 121, 51-55.

Egnuni T, Short S, **Mavria G** (2017). DOCK4 heterozygous deletion normalizes the glioblastoma microenvironment & improves response to radiation. *Neuro-oncology* 19, 25-25.

DaSilva, Polson E, **Mavria G**, Wurdak H (2017). Chemical ROCK inhibition induces neurite-like outgrowth and connectivity in undifferentiated glioblastoma cells. *Neuro-oncology* 19, 24-24.

Bruning-Richardson, Mittelbronn M et al. **G Mavria**, Short S. (2017) A GSK-3/b-catenin/ArhGAP axis regulates glioblastoma invasion. *Neuro-oncology* 19, S6.

Grant, M., Grant, G. **Mavria, G.** (2016). Assessing the components of a novel VEGF signalling cascade as potential prognostic markers in glioblastoma. *Neurology* 86 (16 Supplement), p5. 253.

Grant G, Gahlaut R, Abraham S, Scarcia M, McMahon K, Grant M, Bagshaw R, Marshall CJ, Speirs V, Short S, Longer M and **Mavria G** (2015). The role of DOCK4 in cancer cell invasion and angiogenesis in breast cancer brain metastases. *Neuro-oncology* 17(suppl 8):viii10.2-viii10.

Liakouli V, Scarcia M, Abignano G et al. **Mavria G**, Del Galdo F (2014). Transforming Growth Factor Beta Induces anti Angio and Vasculo-Genesis Phenotype in Dermal Fibroblasts through Secretion of Pigment Epithelium Derived Factor. *Arthritis & Rheumatology* 66, S337.

Nash CE, Holliday DL, Mavria G, Tomlinson D, Hanby A, F Berditchevski et al. (2013). Development and Characterisation of a 3d Tri-culture Model of Normal Breast as a Tool for Cancer Initiation Studies Shows Overexpression of Her2 and Her3 Alters 3D epithelial architecture. *J Pathol.* 231, S14.

Gahlaut R, McMahon K, Kumar S, Thygesen H, Speirs V, **Mavria G.** (2013). Dock4 expression in Breast Cancer-The prognostic significance and correlation with histological parameters. *J Pathol.* 231, S32.

Nash CE, Holliday DL, Mavria G, Tomlinson DC, Hanby AM, Speirs V (2012). A 3D tri-culture model of normal mammary gland. A tool for breast cancer initiation studies. *Cancer Research* 72 (24 Supplement), P6-02-o6-P6-02-o6.

Languages

Greek, French

Leisure

Family time, walking, running, sailing