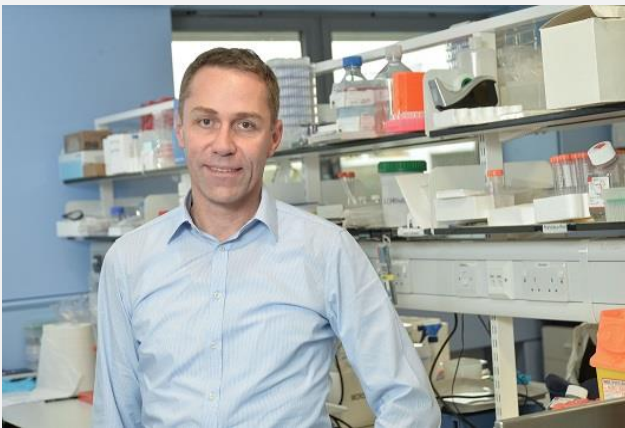


Proteomics in cardiovascular diseases: translating basic research to clinical practice



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Cardiovascular diseases are among the leading causes of morbidity and mortality worldwide. Despite significant progress in recent years the pathophysiology of these conditions remains incompletely understood and novel approaches to detect cardiovascular diseases at early stages are urgently needed. Unbiased approaches using proteomic and other-omic methods have the potential to provide further insight into the pathophysiology and can inform the development of biomarkers for clinical use.

We will explore some of the proteomic approaches that we use in Glasgow in the areas of renal and vascular diseases where we link clinical with preclinical research to dissect the pathophysiology and to translate these findings into clinical practice. Examples in this lecture will be taken from studies into hypertensive disorders of pregnancy, coronary artery disease and diabetic nephropathy.

Short biography

Prof. CHRISTIAN DELLES

Name Christian Delles
Current Post incl. start date Professor & Honorary Consultant Physician
Aug 2014 - ongoing
Employer University of Glasgow
Institute of Cardiovascular and Medical Sciences

Previous Posts

Institution	Position Held	Start Date	End Date
University of Glasgow, Institute of Cardiovascular and Medical Sciences	Reader & Hon. Consultant	Aug 2011	Aug 2014
University of Glasgow, Institute of Cardiovascular and Medical Sciences	Senior Lecturer & Hon. Consultant	Oct 2005	Aug 2011
University of Glasgow, BHF Glasgow Cardiovascular Research Centre	Clinical Research Fellow	Oct 2003	Sep 2005
University of Erlangen-Nürnberg (Germany), Department of Nephrology and Hypertension	Assistenzarzt	Jan 1999	Sep 2003
University of Erlangen-Nürnberg (Germany), Department of Nephrology and Hypertension	Arzt im Praktikum	Jul 1997	Dec 1998

Educational Qualifications

Degree Type	Degree Class (if appropriate)	Year	University	Subject
State Exam	Very good	1997	Freiburg	Medicine
MD	Magna cum laude	1997	Freiburg	Medicine/Physiology

Clinical Qualifications

Are You Clinically Qualified? Yes
Are You Clinically Active? Yes
Are You Active In Clinical Research? Yes

Personal Awards/Achievements/Membership of prestigious academic research based bodies (e.g. Fellowships of the Royal Society, Academy of Medical Sciences)

Oct 2014 Chair, International Relation Sub-Committee in the American Physiological Society
Physiological Genomics Interest Group (PGG)
Sep 2014 FBHS
Sep 2014 Member, British Atherosclerosis Society Committee
Aug 2012 Ordinary Member, Executive Committee of the British Hypertension Society
Oct 2009 Harry Goldblatt Award, American Heart Association - Council for High Blood Pressure Research
Sep 2008 FAHA
Mar 2007 FRCP(Glasg)

Current membership of professional societies:

British Atherosclerosis Society since 2014; Association of Physicians of Great Britain and Northern Ireland since 2009, Scottish Society of Physicians since 2008, Scottish Renal Association since 2008, Scottish Society for Experimental Medicine since 2008, Deutsche Hochdruckliga (German Hypertension Society) since 2006, Scottish Cardiovascular Forum since 2006, British Hypertension Society since 2006, Biochemical Society since 2006, European Renal Association/European Dialysis and Transplant Association since 2006, American Heart Association since 2006, European Society of Hypertension since 2005, International Society of Hypertension since 2005, Deutsche Gesellschaft für Innere Medizin (German Society for Internal Medicine) since 1999, Deutsche Gesellschaft für Nephrologie (German Society for Nephrology) since 1999.

Current membership of editorial boards:

Clinical Science since 2005 (Associate Editor), BMC Cardiovascular Disorders since 2009, Hypertension since 2012, Journal of Hypertension since 2015.

Student supervision

Postgraduate students (MD or PhD): Completed: J Dymott (MD, 2011), G Bryce (MD, 2011), D Carty (PhD, 2011), U Neisius (PhD, 2013), K Stevens (PhD; 2015), P Rocchiccioli (MD; 2015). Current students: K Gillies (PhD, submitted), C Brown (PhD, writing up), F Moreton (PhD, submitted), S Robinson (PhD, Year 3), G Currie (PhD, writing up), H Small (PhD, Year 3), M Fernandes (PhD, Year 3).

Undergraduate Students: Completed: M Hutton (BSc Med Sci 2008, upper 2nd), D Baird (BSc Med Sci 2009, 1st), S Rossi (BSc Med Sci 2010, 1st), C Nicolson Duncan (BSc Med Sci 2010, 1st), A Degan (BSc Med Sci 2011, 1st), H Ibrahim (BSc Med Sci 2012, 1st), F Nugent (BSc Med Sci 2012, upper 2nd), A Ghaus (BSc Med Sci 2013, 1st); M Friar (BSc Med Sci, 1st). Current: Moiz Shah

Relevant publications

Publications (out of >160)

1. Currie G, Taylor AH, Fujita T, Ohtsu H, Lindhardt M, Rossing P, Boesby L, Edwards NC, Ferro CJ, Townend JN, van den Meiracker AH, Saklayen MG, Oveisi S, Jardine AG, Delles C, Preiss DJ, Mark PB. Effect of mineralocorticoid receptor antagonists on proteinuria and progression of chronic kidney disease: a systematic review and meta-analysis. *BMC Nephrol* 2016;17:127.
2. Stevens KK, Denby L, Patel RK, Mark PB, Kettlewell S, Smith GL, Clancy MJ, Delles C, Jardine AG. Deleterious effects of phosphate on vascular and endothelial function via disruption to the nitric oxide pathway. *Nephrol Dial Transplant* 2016; in press.
3. Neisius U, Koeck T, Mischak H, Rossi SH, Olson E, Carty DM, Dymott JA, Dominiczak AF, Berry C, Oldroyd KG, Delles C. Urine proteomics in the diagnosis of stable angina. *BMC Cardiovasc Disord* 2016;16:70.
4. Currie G, Delles C, Touyz RM, Staessen JA, Dominiczak AF, Jennings GL, Wang JG. A woman with treatment-resistant hypertension. *Hypertension* 2016;67:243-50.
5. Akehurst C, Small HY, Sharafetdinova L, Forrest R, Beattie W, Brown CE, Robinson SW, McClure JD, Work LM, Carty DM, McBride MW, Freeman DJ, Delles C. Differential expression of microRNA-206 and its target genes in preeclampsia. *J Hypertens* 2015;33:2068-74.
6. Schanstra JP, Züribig P, Alkhalaf A, Argiles A, Bakker SJ, Beige J, Biló HJ, Chatzikyrkou C, Dakna M, Dawson J, Delles C, Haller H, Haubitz M, Husi H, Jankowski J, Jerums G, Kleefstra

N, Kuznetsova T, Maahs DM, Menne J, Mullen W, Ortiz A, Persson F, Rossing P, Ruggenenti P, Rychlik I, Serra AL, Siwy J, Snell-Bergeon J, Spasovski G, Staessen JA, Vlahou A, Mischak H, Vanholder R. Diagnosis and Prediction of CKD Progression by Assessment of Urinary Peptides. *J Am Soc Nephrol* 2015;26:1999-2010.

7. Brown CE, McCarthy NS, Hughes AD, Sever P, Stalmach A, Mullen W, Dominiczak AF, Sattar N, Mischak H, Thom S, Mayet J, Stanton AV, **Delles C**. Urinary proteomic biomarkers to predict cardiovascular events. *Proteomics Clin Appl* 2015;9:610-7.
8. Lindsey ML, Mayr M, Gomes AV, **Delles C**, Arrell DK, Murphy AM, Lange RA, Costello CE, Jin YF, Laskowitz DT, Sam F, Terzic A, Van Eyk J, Srinivas PR. Transformative Impact of Proteomics on Cardiovascular Health and Disease: A Scientific Statement From the American Heart Association. *Circulation* 2015;132:852-72.
9. Husi H, Van Agtmael T, Mullen W, Bahlmann FH, Schanstra JP, Vlahou A, **Delles C**, Perco P, Mischak H. Proteome-based systems biology analysis of the diabetic mouse aorta reveals major changes in fatty acid biosynthesis as potential hallmark in diabetes associated vascular disease. *Circ Cardiovasc Genet* 2014;7:161-70.
10. Denby L, Ramdas V, Lu R, Conway B, Grant JS, Dickinson B, Aurora AB, McClure J, Kipgen D, **Delles C**, van Rooij E, Baker AH. miRNA-214 antagonism leads to protection from renal fibrosis 1. *J Am Soc Nephrol* 2014;25:65-80.
11. Husi H, Sanchez-Niño MD, **Delles C**, Mullen W, Vlahou A, Ortiz A, Mischak H. A combinatorial approach of Proteomics and Systems Biology in unravelling the mechanisms of acute kidney injury (AKI): involvement of NMDA receptor GRIN1 in murine AKI. *BMC Syst Biol* 2013;7:110.
12. Rossi SH, McQuarrie EP, Miller WH, Mackenzie RM, Dymott JA, Moreno MU, Taurino C, Miller AM, Neisius U, Berg GA, Valuckiene Z, Hannay JA, Dominiczak AF, **Delles C**. Impaired renal function impacts negatively on vascular stiffness in patients with coronary artery disease. *BMC Nephrol* 2013;14:173.
13. Mackenzie RM, Salt IP, Miller WH, Logan A, Ibrahim HA, Degasperi A, Dymott JA, Hamilton CA, Murphy MP, **Delles C**, Dominiczak AF. Mitochondrial reactive oxygen species enhance AMPK activation in the endothelium of patients with coronary artery disease and diabetes. *Clin Sci (Lond)* 2013;124:403-11.
14. Mackenzie RM, Sandrim VC, Carty DM, McClure JD, Freeman DJ, Dominiczak AF, McBride MW, **Delles C**. Endothelial *FOS* expression and preeclampsia. *BJOG* 2012;119:1564-71.
15. Carty DM, Anderson LA, Duncan CN, Baird DP, Rooney LK, Dominiczak AF, **Delles C**. Peripheral arterial tone: assessment of microcirculatory function in pregnancy. *J Hypertens* 2012;30:117-23.
16. Neisius U, Bilo G, Taurino C, McClure JD, Schneider MP, Kawecka-Jaszcz K, Stolarz-Skrzypek K, Klima L, Staessen JA, Kuznetsova T, Redon J, Martinez F, Rosei EA, Muiesan ML, Melander O, Zannad F, Rossignol P, Laurent S, Collin C, Lonati L, Zanchetti A, Dominiczak AF, **Delles C**. Association of central and peripheral pulse pressure with intermediate cardiovascular phenotypes. *J Hypertens* 2012;30:67-74.
17. Carty DM, Siwy J, Brennand JE, Züribig P, Mullen W, Franke J, McCulloch JW, North RA, Chappell LC, Mischak H, Poston L, Dominiczak AF, **Delles C**. Urinary proteomics for prediction of preeclampsia. *Hypertension* 2011;57:561-9.