



UniversitätsKlinikum Heidelberg

## External Seminar

### Speaker

**Professor Andrew H Baker** PhD FRSE  
Deputy Director, Institute of Cardiovascular and  
Medical Sciences  
British Heart Foundation Chair of  
Translational Cardiovascular Sciences  
Institute of Cardiovascular and Medical Sciences,  
BHF Glasgow Cardiovascular Research Centre,  
University of Glasgow, UK.



**Prof. Andrew Baker**  
Deputy Director, Institute of  
Cardiovascular and Medical Sciences  
British Heart Foundation, Chair of  
Translational Cardiovascular  
Sciences, Glasgow

**Place:** Auditorium-Hörsaal  
(INF 410)

**Date:** Tuesday, 13<sup>th</sup> May 2014

**Time:** 5.00 pm

**Title:** "Manipulation of the vasculature using gene and  
miRNA approaches"

**Abstract** This presentation will focus on pathological remodelling associated with vein grafts, stented vessels and remodelling in pulmonary arterial hypertension. Patency rates for coronary artery bypass grafting (CABG) procedures using autologous saphenous vein (SV) remain poor. The vast majority of failures are due to neointima formation and superimposed atherosclerosis. There remains a requirement to develop a novel therapy through which to improve patency rates. Since many of the molecular and cellular mechanisms that lead to neointima formation have been identified, a number of strategies have emerged. These include modulation of smooth muscle cell migration, proliferation and/or apoptosis, acceleration of endothelial regeneration and improvement in endothelial function. Vein grafting is highly suited for human gene therapy since it allows ex vivo manipulation of the vein prior to grafting into the coronary circulation of the patient. This has clear safety advantages over in vivo gene therapeutic applications but, due to the short clinical window through which gene transfer can be administered, efficient vector systems are required. Adenoviral vectors have proven efficient for gene delivery in this context although expression of transgenes using first-generation vectors is transient in nature and associated with inflammation. MicroRNAs (miRNAs) are short non-coding RNAs, which post-transcriptionally regulate gene expression. miRNAs are important in governing cell differentiation, development and disease. I will discuss experiments that manipulate these pathologies using gene and miRNA-based approaches.

**Host:** **Prof. Dr. med. Patrick Most**  
Chair, Molecular and Translational Cardiology Section  
Department of Internal Medicine III,  
University of Heidelberg