

# Pathology and Molecular Diagnosis

June 26-27, 2017 San Diego, USA

## Nutraceuticals as promising agents in the prevention and treatment of atherosclerosis

Dipak P Ramji, Thomas S Davies, Hayley Gallagher, Joe W E Moss, Jessica Williams, Wijdan Al-Ahmadi and Victoria O'Morain  
Cardiff University, UK

Atherosclerosis, an inflammatory disorder of medium and large arteries and the underlying cause of myocardial infarction and cerebrovascular accident, is responsible for more deaths worldwide than any other disease. Pharmaceutical intervention together with lifestyle changes have recently resulted in a slight reduction in morbidity and mortality from atherosclerosis and its complications, at least in the western world. However, this is expected to change in the future, because of global increase in risk factors such as obesity and diabetes. Current pharmaceutical therapies against atherosclerosis such as statins are not fully effective and associated with several side effects together with patient-dependent efficacy. Unfortunately, many pharmaceutical leads against established targets have proved disappointing at the clinical level (e.g. inhibitors against cholesterol ester transfer protein). It is therefore essential that further research is carried out into alternative therapies for the prevention and/or treatment of atherosclerosis. Nutraceuticals have recently received substantial interest for the prevention/treatment of atherosclerosis. However, more in-depth understanding is required on the molecular mechanisms underlying the actions of nutraceuticals together with large clinical trials testing their efficacy. We have recently initiated studies on the effects of many nutraceuticals, including certain omega-6-fatty acids, polyphenols and flavanols, on several key monocyte/macrophage processes associated with atherosclerosis *in vitro* (e.g. monocytic migration, macrophage polarization, foam cell formation, activation of inflammasome and production of reactive oxygen species) and various risk factors *in vivo*. These will be presented in the context of current therapies and those that are being developed.

### Biography

Dipak P Ramji received his BSc (Hons) degree (Biochemistry) and his PhD from University of Leeds. This was followed by Post-doctoral research at the EMBL (Heidelberg) and IRBM (Rome) with fellowships from the Royal Society and the EU. He joined Cardiff University in 1992 and is currently a Reader at Cardiff School of Biosciences. His research is focused on understanding how the immune and inflammatory responses regulate macrophage processes in atherosclerosis with the goal of attaining deeper mechanistic insight and identifying preventative/therapeutic agents. He has published over 80 peer-reviewed papers, reviews and book chapters (h-index=30; i10-index=57). He is an Editorial Board Member of 16 international journals.

Ramji@cardiff.ac.uk

### Notes: