

ASCEPT Travel Grant Report- Chen Huei Leo

I have recently returned from attending three international conferences in Europe: Frontiers of Cardiovascular Biology held in Berlin, Germany from 16th July 2010 to 18th July 2010, the 16th World Congress of Pharmacology 2010 held in Copenhagen, Denmark from 19th July 2010 to 23rd July 2010 and the 12th Vascular Neuroeffector Mechanisms held in Odense, Denmark from 24th July 2010 to 26th July 2010.

These three conferences attracted numerous internationally renowned scientists in the field of cardiovascular and antioxidant research, and the presentations by these scientists were of a very high standard. Most of the sessions that I have attended were very interesting and stimulating. Without a doubt, I came away with many new ideas, which I plan to pursue as part of my PhD studies. I have picked two highlight presentations from the conferences that I have attended to briefly describe below.

ADMA by activating arteriolar renin angiotensin system elicits release of ROS and constriction- Frontier of Cardiovascular Biology by Professor Akos Koller.

ADMA is known to be an endogenous inhibitor of eNOS, and is markedly elevated in many cardiovascular diseases. Prof. Koller presented an elegant paper demonstrating that ADMA could activate the renin angiotensin system to elicit release of NADPH-oxidase derived superoxide cause endothelial dysfunction. This is of particular interest to me as I am interested in diabetes-induced endothelial dysfunction and one of the pathways for endothelial dysfunction could be contributed to by increased ADMA activity.

Endothelial microdomains and integrations of arterial dilatation- World Congress of Pharmacology by Professor Christopher Garland.

Prof. Garland presented an interesting lecture, providing an overview of endothelium-derived hyperpolarizing factors (EDHF) and the role of endothelial microdomain signalling pathways. In particular, Prof. Garland presented data demonstrating that there are ‘holes’ in the internal elastic lamina (IEL) within the vasculature, which are endothelial cell projections. The IK_{Ca} is localised in the endothelial cell projections and is coupled to the Na^+/K^+ ATPase to cause vascular myocyte hyperpolarization. This work is of particular interest to me because I am interested in endothelial function in mesenteric arteries, where EDHF is one of the factors that contribute to endothelium-dependent relaxation.

The International Travel Grant also allowed me to present my research as two poster communications entitled “Impairment of both nitric oxide and endothelium-derived hyperpolarizing factor from streptozotocin-induced diabetic rat small mesenteric artery” and “7 day treatment with 3’,4’-dihydroxyflavonol prevents endothelial dysfunction in mesenteric arteries from streptozotocin-induced diabetic rats.” at these conferences. It also allowed me the opportunity to speak with other researchers from the same area of research. I have received valuable feedback from experts in the field (Profs. Ingrid Fleming, Akos Koller, Jo de May, Chris Triggle and Gillian Edwards) to inform future consideration which will lead to the improvement of our ongoing research.

Last but not least, I am extremely grateful to ASCEPT for the financial support that allowed me the opportunity to travel to Europe for these conferences. Without the funding from ASCEPT, my attendance would not have been possible. Thank You!