Cardiovascular Pharmacology Lab

Group Head
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BSc(Hons) PhD

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Specific Interests
Our main area of interest is in the pharmacology of vasoactive peptides and, in particular, how their modulation (stimulation/inhibition) relate to the control of blood pressure and the pathophysiology of hypertension, congestive heart failure and atherosclerosis. Our Specific interests include:-

- Hemodynamic actions of vasoactive peptides, particularly the renin-angiotensin system
- Hypertension, heart failure & atherosclerosis
- Acute & chronic cardiovascular effects of peptides & non-peptide antagonists
- Central and peripheral control of blood pressure
- Cardiac & vascular remodelling during cardiovascular disease and its regression by drug treatment

Current projects
Our current projects involve the role of a number of angiotensin peptides, and of other peptides such as endothelin, in cardiovascular regulation. These peptides, together with selective nonpeptide antagonists and inhibitors are used in several animal models of hypertension (of both genetic and renal origin); an acute myocardial infarction model of heart failure, as well as in models of atherosclerosis and restenosis. Techniques used include regional haemodynamic (pulsed Doppler flow) measurements, blood pressure radiotelemetry for chronic studies, vasoactive and baroreflex testing. Ex vivo cardiac and vascular remodelling parameters (e.g. hypertrophy & fibrosis), as well as immunohistochemical localisation of a number of inflammatory mediators and receptor targets are also examined in the cardiovascular system following chronic manipulation of various peptidergic systems. In vitro reactivity of blood vessels from chronically treated animals is also examined.

Members of Laboratory
Dr Tracey Gaspari, PhD (Research Officer, NHMRC)
Ms Iresha Welungoda, BSc (Hons) (Research Assistant, NHMRC)
Ms Ruth Hannan (PhD student)
Ms Emma Jones (PhD student, National Heart Foundation)
Mr Stuart McDougall (PhD student)
Ms Pia Walters (PhD student)
Ms Lisa Duke (PhD student)
Mr Antony Vinh (PhD student)
Ms Kylie Longstaff – B.Sc. Honours Student

Funding
National Health & Medical Research Council
National Heart Foundation
Collaborations

Dr Joanne Favaloro, PhD (Peter Doherty Fellow, NHMRC), Dept. Pharmacology, Monash Univ.
Role of reactive nitrogen species in vascular tone

Dr Jane Black, Dept. Anatomy & Cell Biology, Monash Univ.
Cardiac remodelling following inhibition of renin-angiotensin system

Dr Roger Evans, Dept. Physiology, Monash Univ.
Effects of angiotensin peptides on regional kidney blood flow

Dr Andrew Lawrence, Howard Florey Institute
Stress: cardiovascular function and central neurochemical modulation

Dr Anthony Zulli & A/Prof David Hare, Dept. Cardiology, Austin Hospital, Univ. of Melbourne
Localisation of angiotensin receptor subtypes in human vasculature

Dr Anthony Dear, Box Hill Hospital, Monash University
A study of abdominal aortic aneurysms

Dr Daniel Henrion, INSERM, Paris VII University, Paris, France.
Functional role of angiotensin AT2 receptor in isolated vasculature

Recent selected publications