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Vrije Universiteit Brussel

FACULTEIT GENEESKUNDE EN FARMACIE

Doctoraat in de Farmaceutische Wetenschappen

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UITNODIGING

Voor de openbare verdediging van het
doctoraatsproefschrift van

Rui YANG

woensdag 23 juni 2010

U wordt vriendelijk uitgenodigd op de openbare verdediging van het proefschrift van

Rui YANG

'Investigation of the role of angiotensin IV and angiotensin A in blood pressure regulation and renal hemodynamics'

Op woensdag 23 juni om 17.30 uur in auditorium **P. Brouwer** van de Faculteit Geneeskunde & Farmacie, Laarbeeklaan 103, 1090 Brussel

Situering van het proefschrift

The renin-angiotensin system (RAS) plays a central role in the control of arterial blood pressure, sodium balance and body fluid volume, as well as vascular tone. Angiotensin (Ang) II has been considered the main effector peptide of the RAS for its well-known vasoconstrictor and endocrine (stimulation of the release of aldosterone and vasopressin) properties, which regulate many aspects of the renal function and blood pressure.

Several other angiotensin peptides also display bio-activity. In this thesis, we have focused on the possible role of two of these angiotensin peptides, Ang IV and Ang A, in the regulation of blood pressure and renal hemodynamics.

Experiments in anesthetized rats showed that Ang IV increases blood pressure and renal vascular resistance through stimulation of brain and peripheral AT₁ receptors, and that there is no evidence for a role of IRAP/ AT₄ receptors in the regulation of blood pressure, renal blood flow and renal sodium handling. This was corroborated in the second part of the thesis where we used transgenic mice to further characterize the blood pressure and renal responses to Ang IV and where we demonstrated that the AT_{1a} receptor subtype has a dominant role in the pressor and renal hemodynamic responses to Ang IV.

We also demonstrated that Ang A, a recently discovered novel human Ang-derived peptide, displays similar *in vitro* and *in vivo* properties as Ang II, but we found no evidence for a putative role of Ang A as a naturally occurring peptide counteracting the Ang II mediated vasoconstrictor effects via a predominant AT₂ receptor-mediated effect as had been suggested by others.

Curriculum Vitae

Rui Yang was born on 12 August 1975 in Shanxi, China. From 1994 to 1999, she studied "Clinical Medicine" at the Capital University of Medical Sciences, Beijing, China, after which she worked as a medical doctor in internal medicine in the University Hospital.

In 2004-5, she obtained a master degree in Pharmaceutical Sciences (Prof. Peter De Witte, Department of Pharmaceutical Sciences, Katholieke Universiteit, Leuven). End 2005, she started as a PhD student in the Department of Pharmacology and the Department of Pharmaceutical Chemistry, Drug Analysis & Drug Information at the Vrije Universiteit Brussel.

Her research resulted in publications in peer reviewed journals with high impact factors. She has also been invited to present her research data in many national and international congresses.