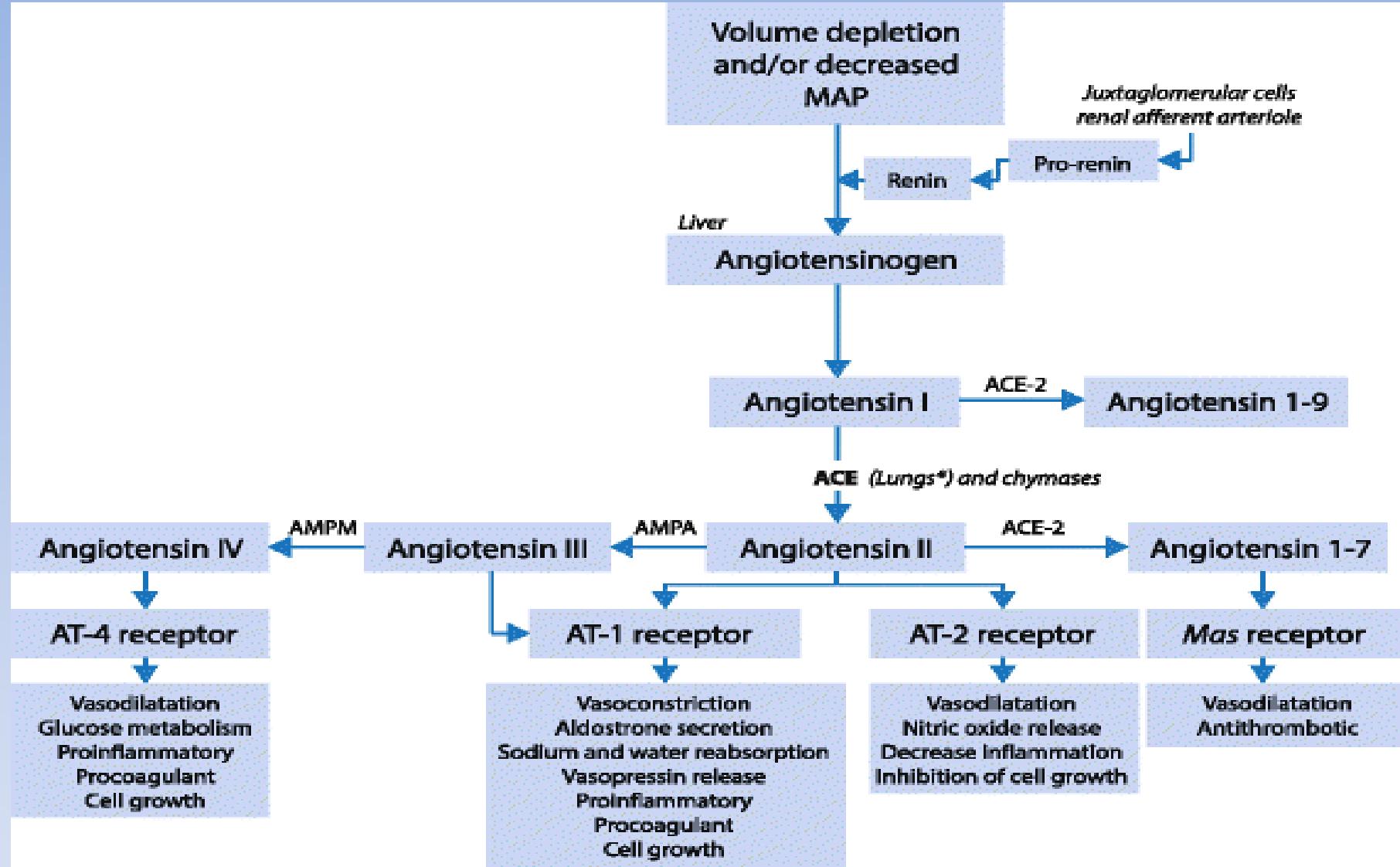


# **ANGIOTENSIN RECEPTORS**

Prof.Dr.Nuray ARI,2018

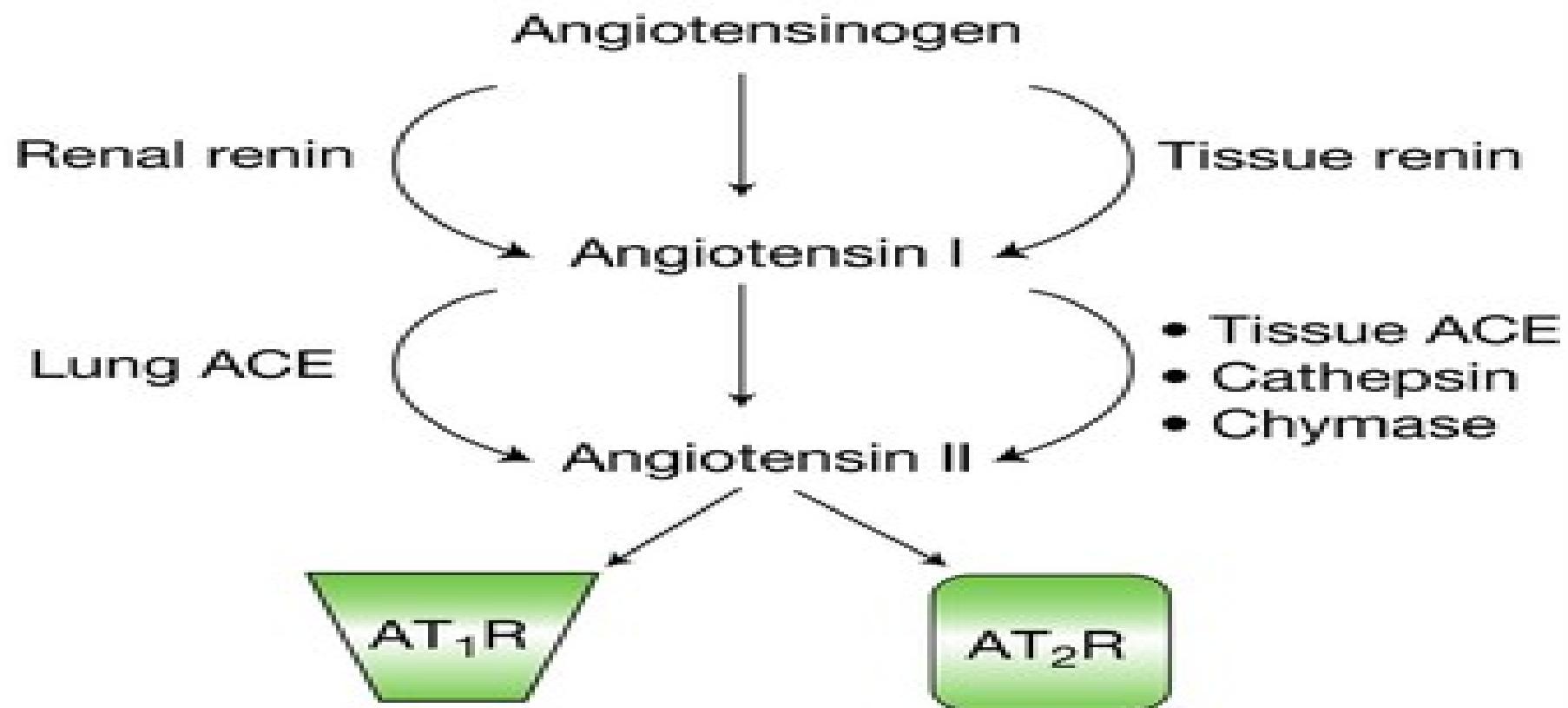


## Overview of the renin-angiotensin system

MAP: mean arterial blood pressure; AT: angiotensin; ACE: angiotensin-converting enzyme; AMPA: aminopeptidase A; AMPM: aminopeptidase M.

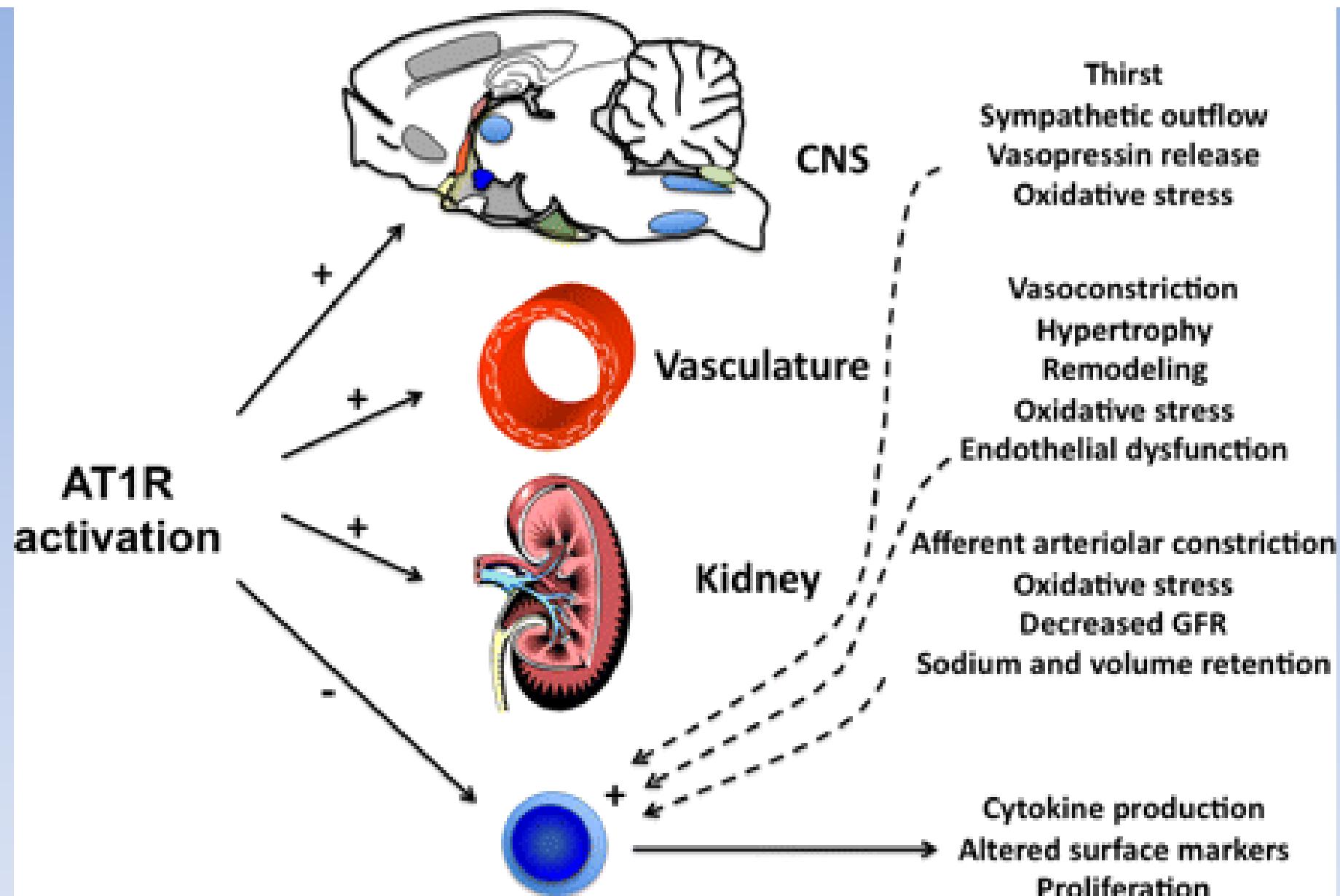
## Circulating RAS

## Tissue RAS



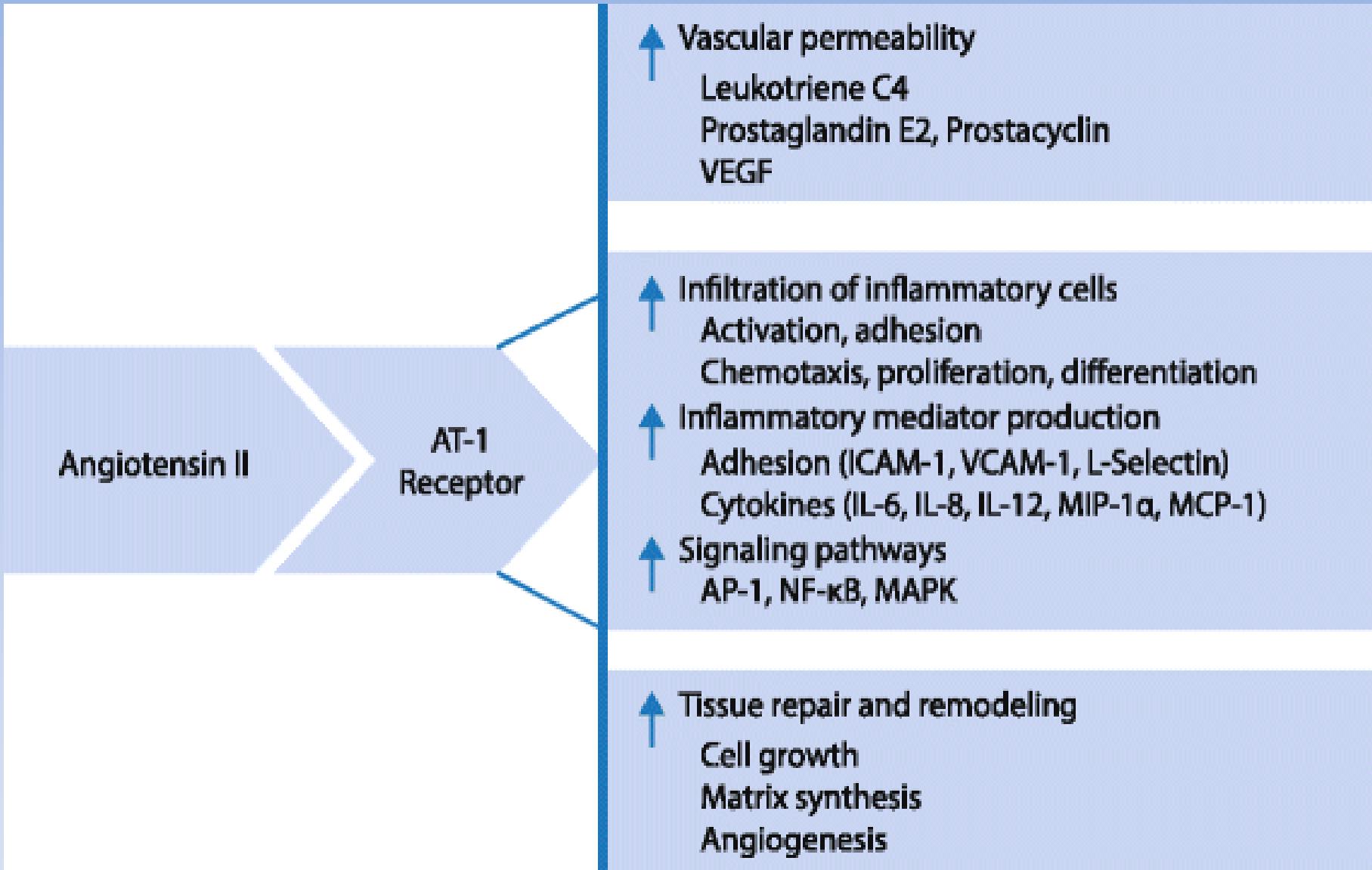
## Renin–angiotensin systems

Expert Reviews in Molecular Medicine © 2011  
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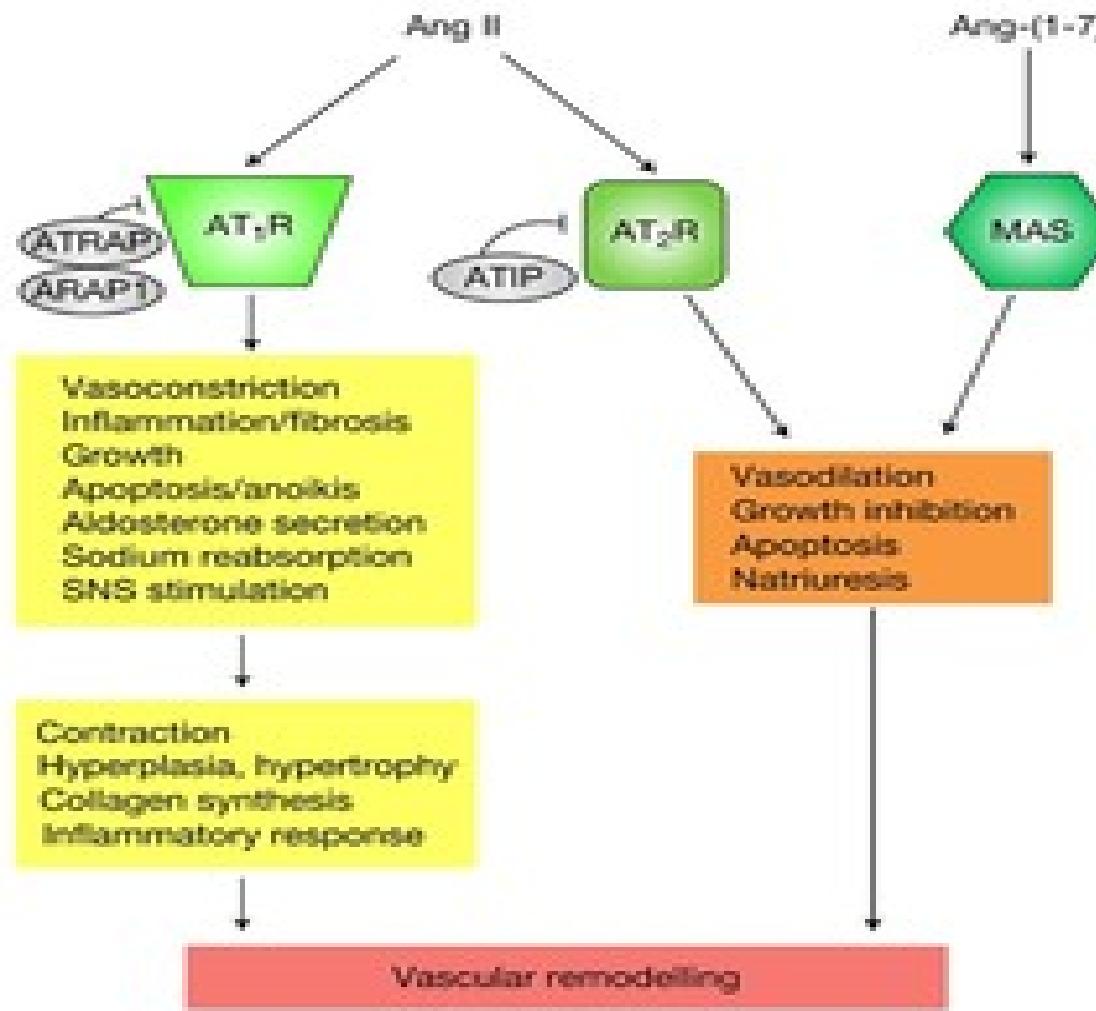


### Multisystem effects of angiotensin type 1 receptor (AT<sub>1</sub>R) activation in hypertension

David G. Harrison, Tomasz J. Guzik. *Circulation Research*. 2012;110:1543-1545

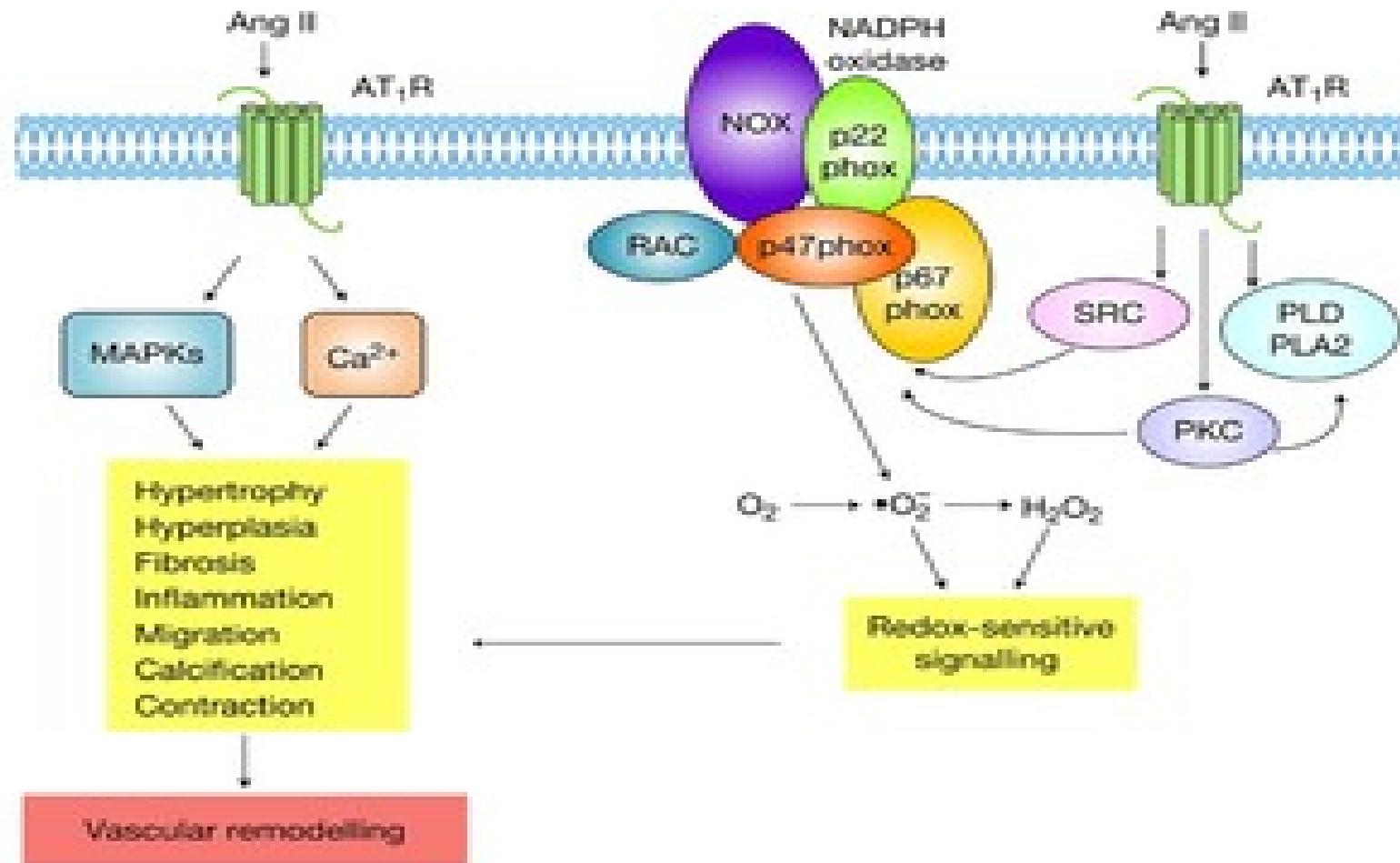


**Key potential mechanism attributed to angiotensin II's action via AT-1 receptors**



Molecular and cellular processes mediated by angiotensin II and Ang-(1-7) that influence vascular changes in hypertension

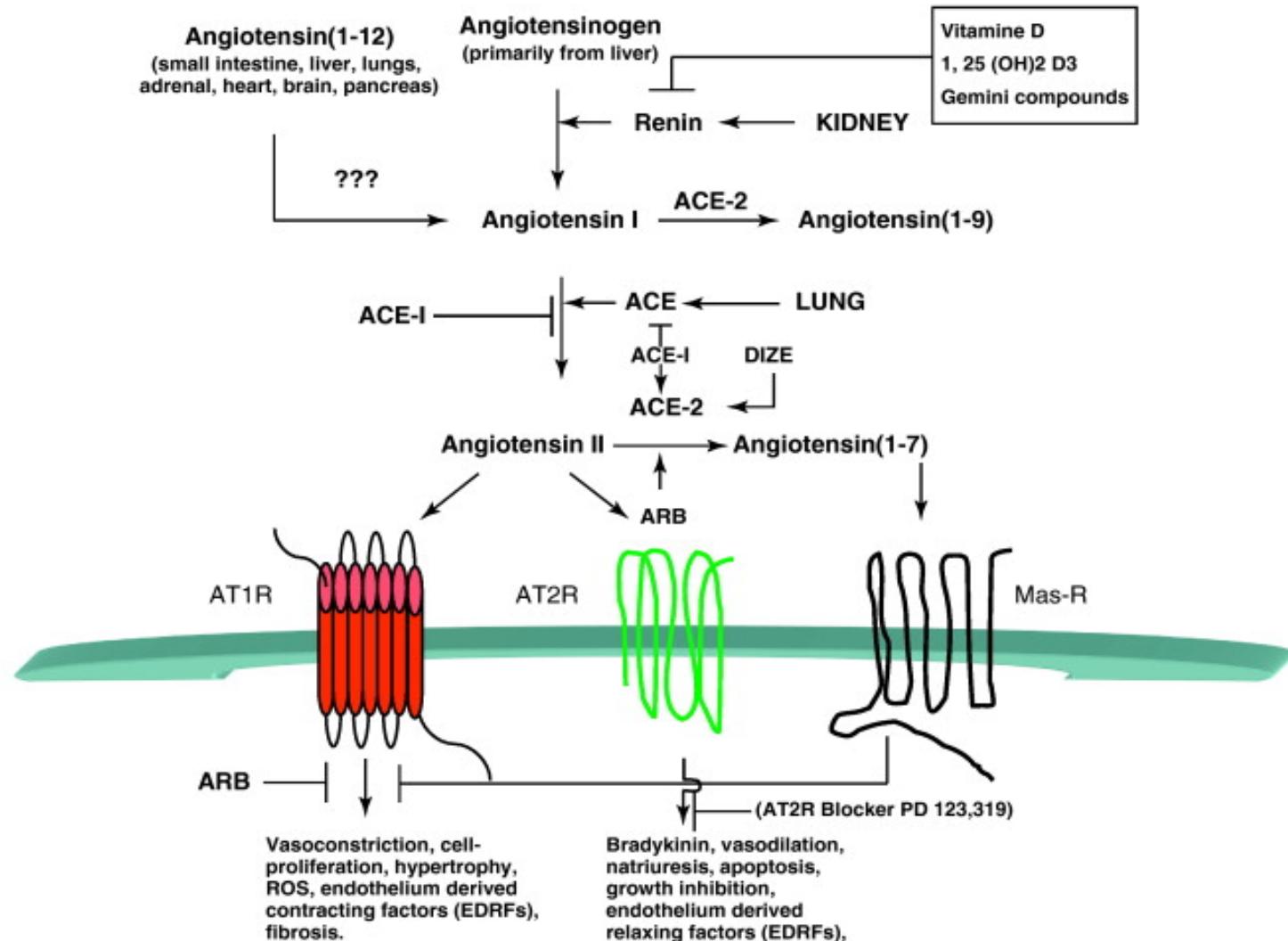
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Angiotensin-II-mediated signalling events in vascular smooth muscle cells that promote vascular remodelling and inflammation

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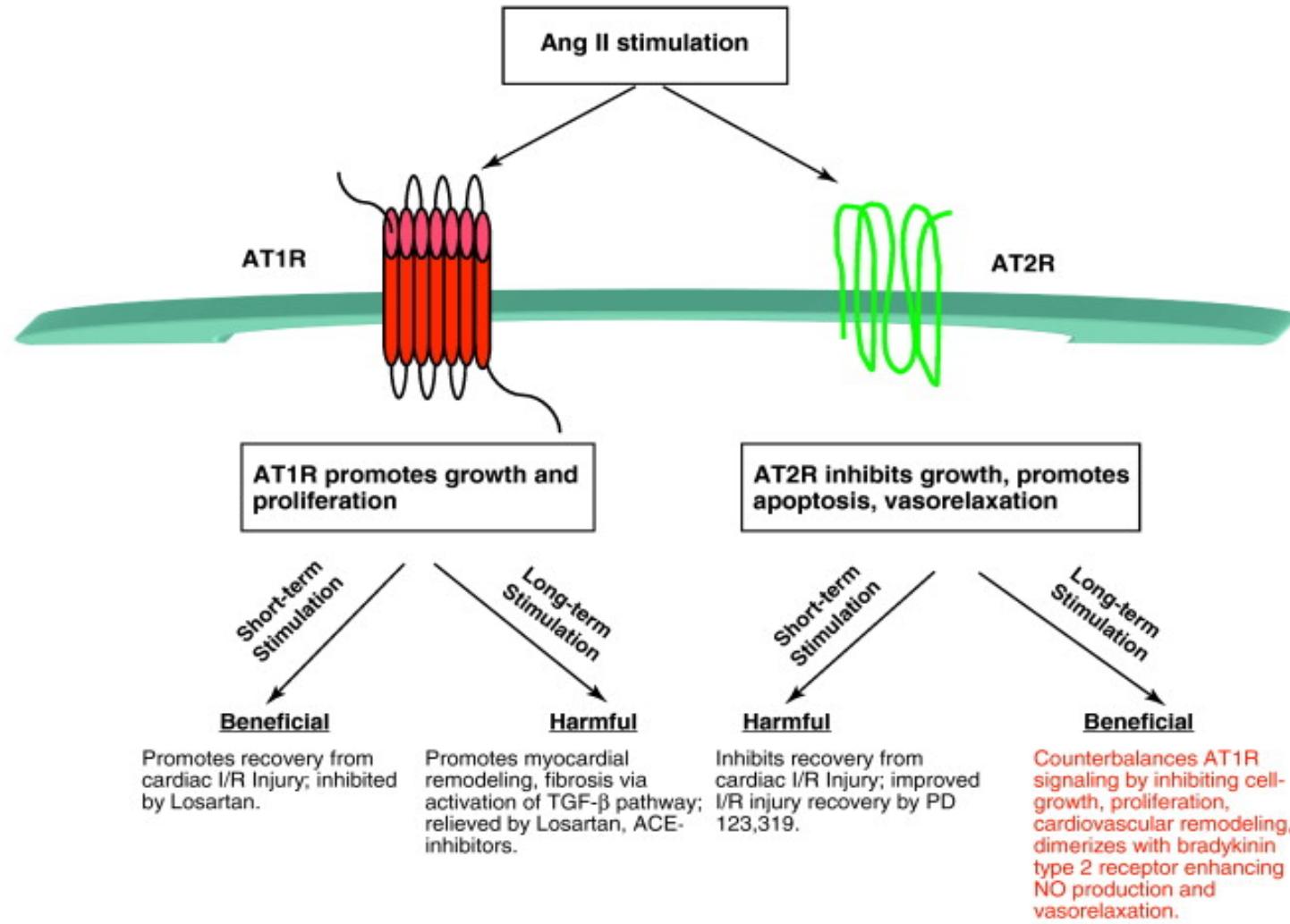
Expert Reviews in Molecular Medicine, [Vol 13](#), 2011 , e11, Savoia et al.



Drug Discovery Today

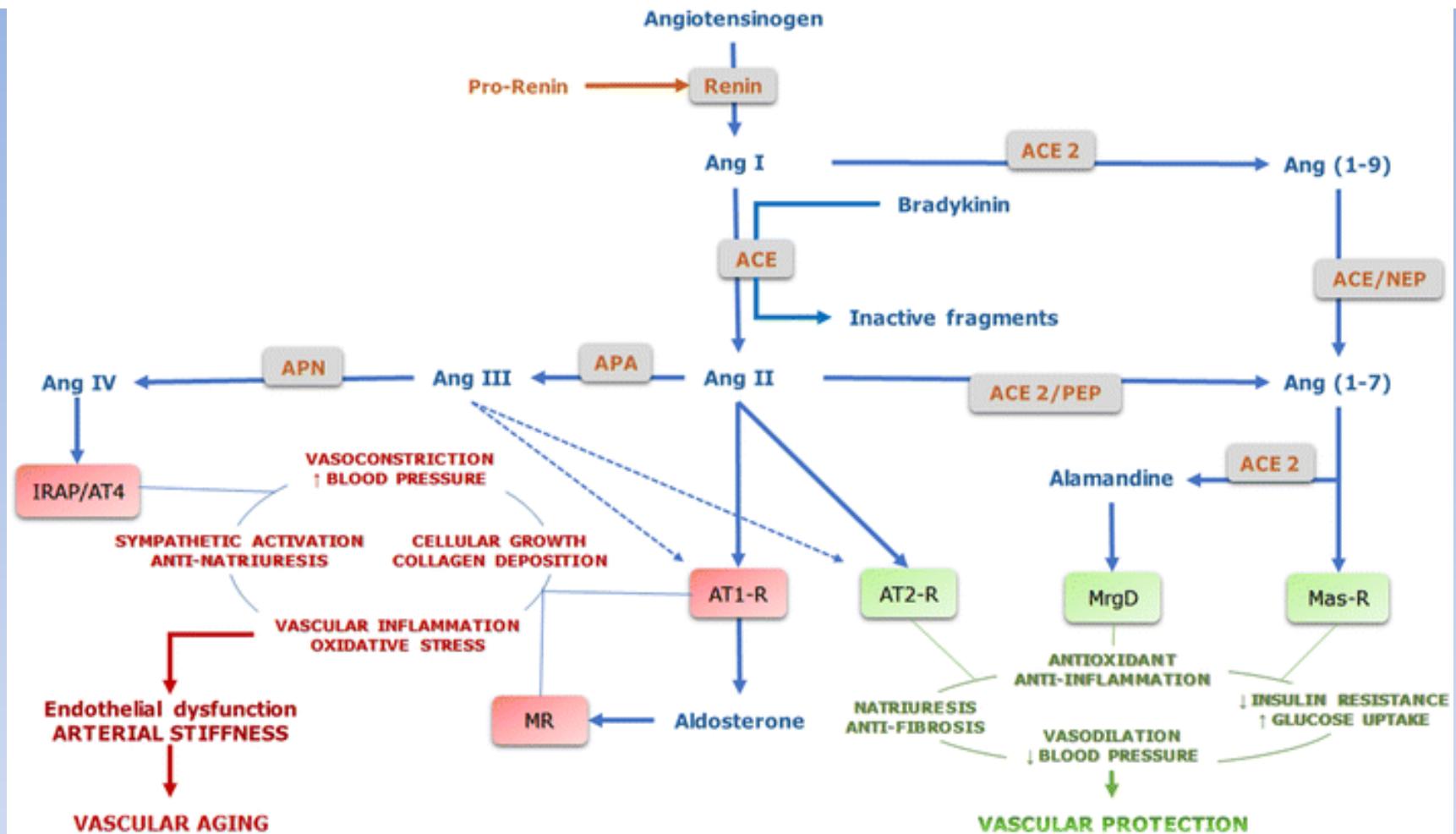
## The renin–angiotensin system (RAS) and long-term effects of angiotensin II receptor stimulation

Drug Discovery Today 16(1-2): 22-34 , 2011. Dasgupta C and Zhang L



## Summary of acute and chronic stimulation of angiotensin II receptors

[Drug Discovery Today](#) 16(1-2): 22-34 , 2011. Dasgupta C and Zhang L



The mechanisms involved in the vasoprotective axis of the RAAS, mainly represented by the effects of AT2 receptor, Mas receptor and Mas-related G-protein-coupled receptor (MrgD), counteracting the deleterious effects of AT1 receptor, mineralocorticoid receptor (MR) and insulin regulated aminopeptidase (IRAP)/AT4 receptor in the vasoconstrictor axis, which contributes to the development of vascular aging. NEP neutral endopeptidase, PEP prolyl-endopeptidase, APAaminopeptidase A, APN aminopeptidase N.

*High Blood Press Cardiovasc Prev.* 2018 Feb 23. doi: 10.1007/s40292-018-0252-5. [Epub ahead of print] The Role of Renin-Angiotensin-Aldosterone System and Its New Components in Arterial Stiffness and Vascular Aging. [Neves MF](#)

## **$\beta$ -arrestin-biased ligand**

Angiotensin II type 1 receptor



Cell membrane

**$\beta$ -arrestin**

Vasoconstriction  
 $\text{Na}^+$  & fluid retention

↑ Cardiac contractility  
↓ Cardiac cell apoptosis

*TRENDS in Pharmacological Sciences*