

## Laboratory diagnosis of cardiovascular diseases

Diagnostic kits for the detection of SNP polymorphisms  
in genes associated with RAAS system  
(renin-angiotensin-aldosterone system)



## Arterial hypertension

**Arterial hypertension** (AH) is one of the most common diseases of the cardiovascular system. Uncontrolled high blood pressure increases the risk of serious illnesses such as heart attacks and strokes.

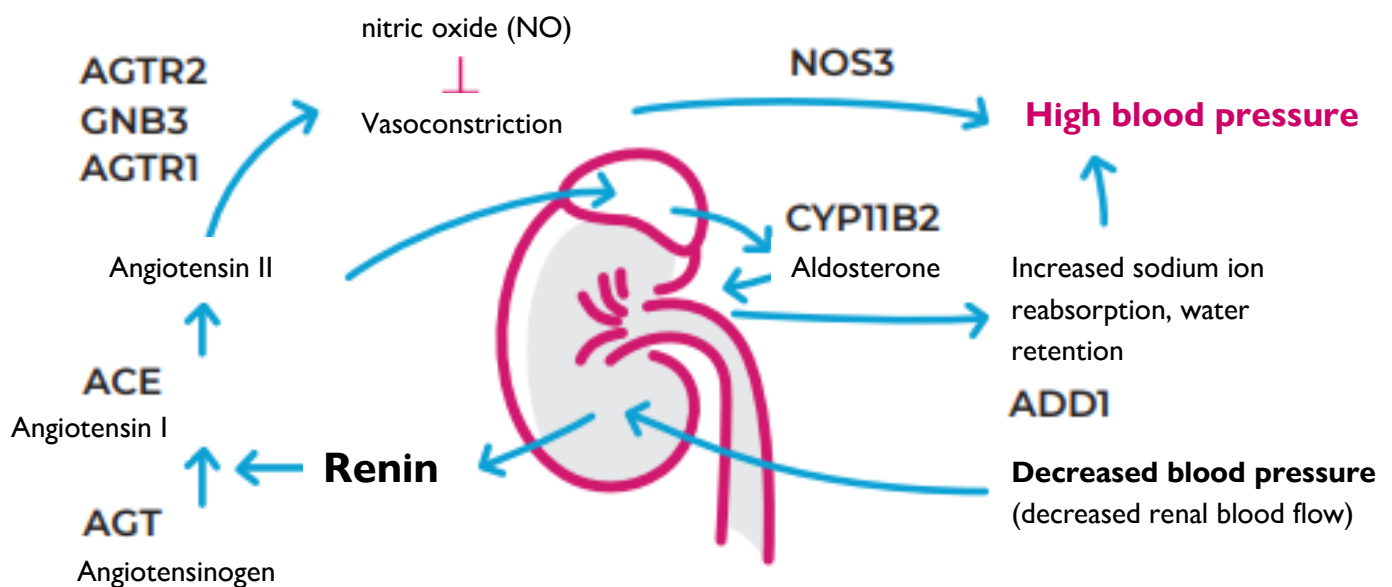
Arterial hypertension is a complex disease, the development of which is influenced by external factors and genetic polymorphisms that predispose to this pathology.



The renin-angiotensin-aldosterone system (RAAS) plays a key role in regulating blood pressure and electrolyte balance. Many researchers associate the development of hypertension and various diseases of the cardiovascular system with disorders in the RAAS, specifically with polymorphisms of its key genes.



## Key RAAS genes



ACE (angiotensin-converting enzyme)  
AGTR1 (angiotensin II type 1 receptor)  
CYP11B2 (Aldosterone synthase)  
GNB ( $\beta$ -3 G protein subunit)

AGT (angiotensinogen)  
AGTR2 (angiotensin II receptor type 2)  
ADD1 (Adducin)  
NOS3 (nitric oxide synthase 3)

## Indications for molecular-genetic testing of mutations in RAAS genes

- Complicated family history: cardiovascular diseases, diabetes mellitus, etc.
- Presymptomatic determination of the risk of hypertension and its complications
- The presence of ischemic heart disease, myocardial infarction, stroke, diabetes mellitus in the patient
- The choice of drugs for the treatment of hypertension
- Determining the risk of prescribing hormone replacement therapy
- The presence of risk factors (smoking, overweight, regimen of the day, etc.)
- Complications in pregnancy associated with hypertensive conditions; Determination of the risk of preeclampsia during pregnancy

## Diagnostic kits for the detection of SNP polymorphisms in RAAS genes

Cat. №	Kit name	Number of tests
3805	<b>RealBest-Genetics NOS3 T(-786)C/G894T</b>	48
3806	<b>RealBest-Genetics ACE Del287/AGT T704C</b>	48
3817	<b>RealBest-Genetics CYP11B2 C(-344)T/ADD1 G1378T</b>	48
3818	<b>RealBest-Genetics AGT C521T/AGTR1 A1166C</b>	48
3819	<b>RealBest-Genetics GNB3 C825T/AGTR2 G1675A</b>	48

### Features and advantages of the diagnostic kit

- **Ready Master Mix for PCR:** Simplification of analysis procedures and high stability of test quality
- **Specimens:** whole blood or buccal epithelium
- **Number of tests:** kits are designed for the analysis of 48 samples including control samples
- **Multiplexes:** determination of two SNPs in one tube
- **Universal protocol:** Multiple different tests in one run
- **Compatible devices:** CFX96 (Bio-Rad, USA), DT-96 a DTprime (DNA-Technology, Russia), Gentier 96E/R (Xi'an TianLong, Science and Technology Co., Ltd., China)
- **High stability of the kit:** storage at a temperature of 2–8 ° C; transport up to 26 °C not more than 10 days

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**Diagnostické centrum DNK, s.r.o.**

Brestová 14, 821 02 Bratislava

+421 911 299 324, +421 911 211 404

[dnk@pharma.sk](mailto:dnk@pharma.sk), [diagnostika@pharma.sk](mailto:diagnostika@pharma.sk)

[www.pcr.sk](http://www.pcr.sk)