gb GENETIC APOE

Clinical implications

Apolipoprotein E is an important structural component of particles transporting cholesterol (VLDL, HDL) and is a ligand of cell receptors found mainly in the brain and the liver. The apolipoprotein E gene occurs in three forms of alleles, e2, e3 and e4, which code for protein isoforms E2, E3 and E4 respectively. These isoforms characteristically have amino-acids at positions 112 and 158. Isoform E3, coded by the e3 allele, is predominantly present in the population (wild-type), and carries cysteine and arginine amino-acids at positions 112 and 158 respectively. There are three homozygous (e2/e2, e3/e3 and e4/e4) and three heterozygous (e2/e3, e3/e4, e2/e4) genotypes present in the population. The e2 allele is associated with the occurrence of type III hyperlipoproteinemia. Isoform E2, coded by this allele, has significantly lower affinition to lipoprotein receptors, compared to isoforms E3 and E4. Individuals carrying this isoform suffer from higher level of triacylglycerols in their plasma. The E4 allele increases LDL cholesterol level and thus is a risk factor of atherosclerosis. In its homozygous form this allele is also connected with the development of the idiopathic form of Alzheimer's disease. E2 allele is related to a lower risk of occurrence of this disease.

Principle of detection

The kit is intended for detection of mutations rs429358 and rs7412 in the gene for APOE in human genomic DNA. It enables determination of e2 (cys112, cys158), e3 (cys112, arg158) and e4 (arg112, arg158) genotypes. Examination process is based on a principle of **real-time PCR with the use of fluorescently labelled probes (allelic discrimination)**.

Available products

Cat. No.	Product	rxn
3206-025	gb GENETIC APOE	25
3206-050	gb GENETIC APOE	50

1 kit contains reagents to provide 25 or 50 PCR reactions (20 µl volume of each reaction).

Parameters of the diagnostic kit

- ***in vitro* diagnostics**
- **CE IVD, IVDR certified**
- **ready-to-use assay**
- **sample concentration 10-100 ng/µl**
- **positive and negative controls included**
- **FAM and HEX channels detection**

Content of the diagnostic kit

*	Component	Conc.	Purpose
	Assay qPCR APOE (112)	1.25×	Detection assay
	Standard WT APOE (112)	10^4 cop/µl	Positive Control
	Standard MUT APOE (112)	10^4 cop/µl	Positive Control
	Standard HET APOE (112)	10^4 cop/µl	Positive Control
	Assay qPCR APOE (158)	1.25×	Detection assay
	Standard WT APOE (158)	10^4 cop/µl	Positive Control
	Standard MUT APOE (158)	10^4 cop/µl	Positive Control
	Standard HET APOE (158)	10^4 cop/µl	Positive Control
	Deionized Water		Negative Control

**Lid colour*



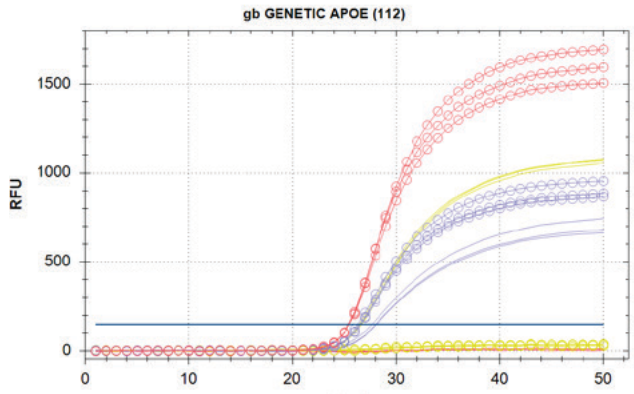


Fig. 1 – Detection of APOE (112) standards on CFX96 device; yellow line – wild type; red line – mutant; violet line – heterozygote; smooth line – FAM channel; dotted line – HEX channel

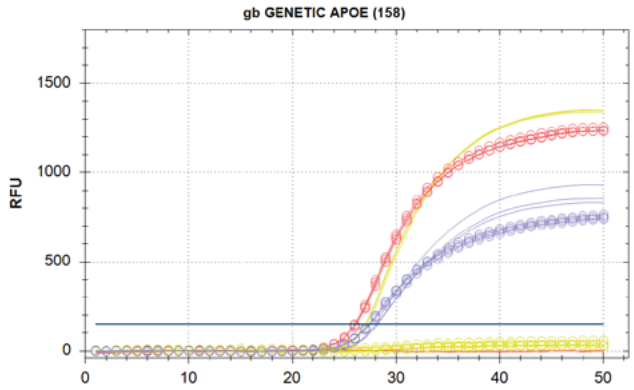


Fig. 2 – Detection of APOE (158) standards on CFX96 device; yellow line – wild type; red line – mutant; violet line – heterozygote; smooth line – FAM channel; dotted line – HEX channel

Validated for cyclers

- Rotor-Gene 3000/6000/Q (Corbett Research Qiagen)
- CFX96/CFX96 Touch (Bio-Rad)
- ABI 7500/7500 Fast (Applied Biosystems)
- Light Cycler 480/Cobas z480 (Roche Diagnostics)
- QuantStudio 5 (Applied Biosystems)

CE IVD