



# Genekor

Committed to Biotechnological Innovation

Genekor Medical S.A. | 52, Spaton Ave., 15344, Gerakas, Athens, Greece ,G.E.MI. nr: 0007856001000  
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 Scientific Director: George Nasioulas PhD

## SAMPLE INFORMATION

<b>Name :</b>	-	<b>Date Received :</b>	-
<b>Medical ID :</b>	-	<b>Date of Report :</b>	-
<b>Date of Birth :</b>	-	<b>Req. Physician :</b>	-
<b>Location :</b>	-	<b>Barcode :</b>	-
<b>Material :</b>	Whole Peripheral Blood	<b>Reason of referral:</b>	<i>CYP2C9</i> Genotype

## Gene *CYP2C9*

## Results

The sample under investigation does not carry the *CYP2C9*\*2 polymorphism, while it carries the *CYP2C9*\*3 polymorphism in heterozygosity.

**Genotype of the individual: *CYP2C9*\*1/\*3**

**Recommended dose of siponimod: 1mg**



Electronically Signed by - Georgia Pepe, MSc Molecular Biologist, AMKA:09038403029

- George Nasioulas, PhD Molecular Biologist, Scientific Director, AMKA:26025301255

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## Methodology

Genomic DNA was extracted from the sample under investigation. An analysis was performed to detect the polymorphisms CYP2C9\*2 (rs1799853, c.430C>T, p.R144C) and CYP2C9\*3 (rs1057910, c.1075A>C, p.I359L) in the *CYP2C9* gene using the CE-IVD real-time PCR methodology, CYP2C9 mpx. RealFast™ Assay (ViennaLab Diagnostics GmbH).

Cytochrome P450 2C9 (CYP2C9) is an enzyme that metabolizes approximately 16% of drugs used in clinical practice. In addition to the wild-type allele CYP2C9\*1, there are two other alleles: 2C9\*2 (R144C) and 2C9\*3 (I359L), which have enzymatic activity of 12% and 5%, respectively.

Genotyping of CYP2C9 is essential before starting siponimod therapy to determine the metabolic status of CYP2C9. Patients who are homozygous for CYP2C9\*3 (CYP2C9\*3\*3 genotype: approximately 0.3% to 0.4% of the population) should not receive siponimod treatment. The use of siponimod in these patients leads to significantly increased siponimod plasma levels. The recommended maintenance dose is 1 mg per day in patients with the CYP2C9\*2\*3 genotype (1.4-1.7% of the population) and in patients with the \*1\*3 genotype to avoid increased exposure to siponimod (see Table 1).

Genotype	The recommended dose of siponimod
CYP2C9*2*3 ή *1*3	1 mg
CYP2C9*3*3	Siponimod should not be used
CYP2C9*1*1 ή CYP2C9*1*2 ή CYP2C9*2*2	2 mg

Additionally, the CYP2C9 gene encodes one of the major enzymes involved in the metabolism of warfarin. A patient's CYP2C9 and VKORC1 genotype can be used to determine the optimal initial dose of warfarin. Several variants of CYP2C9 alleles are associated with reduced enzymatic activity and lower rates of warfarin clearance.

**\*Note:**

Each molecular analysis has an internal error probability of 0.5-1%. This is due to rare molecular events and factors involved in the preparation and analysis of samples.



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## References

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