



# LIJEČNIČKI VJESNIK

GLASILO HRVATSKOGA LIJEČNIČKOG ZBORA

## 11<sup>th</sup> ZIMS

# Zagreb International Medical Summit

for students and young doctors

SUPLEMENT



## FREQUENCY OF CYP2D6\*3 ALLELE IN MACEDONIAN POPULATION – PILOT STUDY

Gregor Krstevski, Ass. Dr. Aleksandar Senev, Ass. Dr. Meri Kirijas  
Ass. Dr. Aleksandar Petlichkovski  
MACEDONIA, Ss. Cyril and Methodius University, School of medicine

---

**Background:** The Cytochrome P450 enzymes are members of an isoenzyme superfamily that catalyzes the oxidation of many drugs and chemicals. Genetic polymorphisms have been identified for some of the CYP450 enzyme genes that alter enzyme activity. Depending on gene variations, individuals may be intermediate metabolizers (IMs) or poor metabolizers (PMs) or ultra-rapid metabolizers (UMs). Phenotypically, this may translate into differing rates of metabolism of drugs with potential for toxicity or lack of efficacy. CYP2D6 is responsible for the metabolism of environmental chemicals and drugs such as: antiarrhythmics, adrenoceptor antagonists and tricyclic antidepressants. **Methods:** Thirty-eight volunteers of Macedonian origin previously involved in pharmacokinetic studies at the institute of Pharmacology and Toxicology were recruited for this study. After signing written consent, DNA was isolated using phenol-chloroform procedure and stored at the human DNA bank (hDNAMKD) at the Institute of Immunobiology and Human Genetics. The exon 5 of the CYP2D6 gene was PCR amplified in order to confirm the presence of the allele # 3 of the 2D6 gene. The resulting product was then digested with the enzyme MspI. Next, electrophoretic separation on the Multiphor II using 12.5% polyacrilamide gel and silver staining was performed. **Results:** The results indicated that of the 38 samples analyzed with the polyacrilamide gel electrophoresis, 37 portrayed a normal homozygote genotype while only 1 sample showed heterozygous genotypic pattern. Therefore, the frequency of 2D6\*3 heterozygotes in the 38 studied samples is 2.6%. This finding is comparable with the other European populations upon which this study has been done. **Conclusion:** To our knowledge, this is the first study analyzing genetic polymorphism of the CYP2D6 gene in the Macedonian population. In this study we present preliminary results, with the goal to continue and eventually analyze a representative number of samples which would make comparisons with other European populations possible. **Keywords:** CYP2D6\*3, Polymorphism, PCR, Polyacrilamide, Macedonian

## SKELETAL MUSCLE DAMAGE AND REPAIR

Robi Kelc, Uroš Bele, Tomislav Šarenac, Janja Topolovec  
Matjaž Vogrin, Marjan Rupnik  
SLOVENIA, University of Maribor, School of Medicine

---

Muscle injuries are among the most common injuries seen by general medical physicians, account for a large majority of patients seen by the sports physicians and orthopedic surgeons, and are therefore a significant public health problem. The recommended treatment regimens vary widely according to the severity of the injury; however, the current treatment principles for injured skeletal muscle lack a firm scientific basis.

In recent decades an extensive research of muscle regeneration after injury and degeneration, including myogenic regulatory factors and molecular pathways in muscle healing, helped by better understanding of this process and enable discoveries of new potential therapeutic targets.

After reviewing up-to-date articles and most recent research published in world medical press authors offer a detailed insight into muscle regeneration after injury.

**Keywords:** muscle regeneration, satellite cells, myogenic regulatory factors, antifibrotic agents