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## P79. MRP1 G1666A GENE POLYMORPHISM IS ASSOCIATED WITH URINE ARSENIC LEVELS

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Multidrug Resistance Protein 1 (MRP1) is a human ATP-Binding Cassette (ABC) transporter protein. It mediates the cellular efflux of various endo- and exobiotics and, thus, protects tissues from toxic insults. MRP1 transports particularly glutathione-, glucuronide- and sulphate-conjugates that are produced by transferases of Phase II enzymes. MRP1 is encoded by *ABCC1* gene and polymorphisms can affect the function of this gene and cause inter-individual differences. The aim of this study was to determine the effect of MRP1 G1666A gene polymorphism on urine arsenic levels in 95 Turkish smelter workers. Urine arsenic concentrations were measured by Graphite Furnace Atomic Absorption Spectroscopy (GFAAS) with Zeeman correction and MRP1 G1666A single nucleotide polymorphism was investigated by Polymerase Chain Reaction-Restriction Fragment Length Polymorphism (PCR-RFLP) method. The genotype frequencies were found as 12.6% homozygote typical (GG), 41.1% heterozygote (GA) and 46.3% homozygote atypical (AA). The mean level of arsenic in the urine samples was 5.58±4.37 µg/L. Highly statistically significant association was detected between G1666A polymorphism in the *ABCC1* gene (p=0.001). Individuals with the GG genotype had higher urine arsenic level (10.70±7.61 µg/L) than those with GA (4.84±2.54 µg/L) and AA (4.83±3.72 µg/L) genotypes. This study suggested that MRP1 G1666A polymorphism is associated with inter-individual variations in urine arsenic levels.