

MTHFR C677T polymorphism, homocysteine and B vitamins status in a sample of Chinese and Malay subjects in Universiti Putra Malaysia.

ABSTRACT

INTRODUCTION: Methylene tetrahydrofolate reductase (MTHFR) C677T is involved in folate and homocysteine metabolism. Disruption in the activity of this enzyme will alter their levels in the body. **METHODOLOGY:** This study assessed MTHFR C677T polymorphism and its relationship with serum homocysteine and B-vitamins levels in a sample of Chinese and Malays subjects in UPM, Serdang. One hundred subjects were randomly selected from among the university population. Folate, vitamin B12, B6, and homocysteine levels were determined using MBA, ECLIA, and HPLC, respectively. PCR coupled with HinfI digestion was used for detection of MTHFR C677T polymorphism. **RESULTS:** The frequency of T allele was higher in the Chinese subjects (0.40) compared to the Malay (0.14). Folate, vitamin B12 and B6 levels were highest in the wild genotype in both ethnic groups. Subjects with heterozygous and homozygous genotype showed the highest homocysteine levels. The serum folate and homocysteine were mainly affected by homozygous genotype. **CONCLUSION:** MTHFR C677T polymorphism plays an important role in influencing the folate and homocysteine metabolism.

Keyword: Chinese; Folate; Homocysteine; Malay; MTHFR C677T.