

**UNIVERSITI TEKNOLOGI MARA**

**DEVELOPMENT OF A PCR TEST FOR THE  
DETECTION OF PATIENTS AT RISK OF  
ALLOPURINOL-INDUCED ADR**

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## ABSTRACT

HLA-B is known as major histocompatibility complex, class I, B, is a human gene that provides instructions for making a protein that plays a critical role in the immune system. HLA-B is part of a family of genes called the human leukocyte antigen (HLA) complex. Their genetic polymorphisms give rise to both important inter-ethnic variability in metabolism and the risk of treatment failure or dose-dependent drug toxicity. The aim of this research is to develop a PCR based method to detect genetic polymorphism of *HLA-B\*5801* and to validate the PCR method that has been developed. The primers were designed according to the gene and followed by reconstitution of primer working stock. This research has a clinical significance as *HLA-B\*5801* polymorphism has been related to the usage of allopurinol for treatment of hyperuricemia such as gout. Unfortunately, in some cases, allopurinol results in adverse hypersensitivity reaction such as SCAR. By getting the result from this research, we can detect patients at risk of SCAR and treatment can be personalised for each individual and ethnic groups.