**HLA-B*1502 typing kit by one step PCR**

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**Background and Objective**: Human Leukocyte Antigens (HLA) is a group of antigens expressed on most nucleated cells. Their functions are involved in immune responses. There are several groups reported the associations between the HLA genes with the hypersensitivity to some drugs, such as carbamazepine (CBZ), particularly HLA-B*1502 with the Stevens-Johnson syndrome (SJS) or cutaneous form of toxic epidermal necrosis (TEN). Therefore, screening for the presence of HLA-B*1502 in patients before CBZ and phenytoin (PHT) treatment is an alternative to prevent such adverse events. To detect HLA-B*1502 by commercial typing kit is very expensive and requires special equipments. In this study, a high resolution PCR-sequence specific primers (PCR-SSP) technique has been developed and evaluated to define HLA-B*1502.

**Method**: The HLA-B*1502 typing kit was developed upon the principle of PCR- SSP and multiplex- PCR. Twelve PCR reactions were amplified in one step PCR. The kit has been tested with 64 known standard DNA samples carrying HLA-B*1502 by sequence based typing and 156 samples with known HLA-B*15 by a low resolution PCR-SSP and another 100 blind samples.

**Result**: The sensitivity, specificity and accuracy of this kit is 100%. Furthermore, this kit can define HLA-B*1502 with other HLA-B*15 subtypes or HLA-B*1502 with HLA-B*46 or HLA-B*1502 with other HLA-B* alleles. The turnaround time for the typing is 2.5 hours after DNA extraction.

**Conclusion**: This study established a simple typing kit for HLA-B*1502 detection with high efficiency and low cost. It can be used for screening in the patients with a risk of developing acute CBZ-induced SJS/TEN in general hospital laboratories.

**Key words**: HLA-B*1502, PCR-SSP, HLA and hypersensitivity