**Abstract**

Allergic reactions to commonly prescribed drugs remain a serious healthcare problem as some patients develop fatal reactions such as SJS/TEN. Genetics risk factors, in particular HLA, have been linked to adverse drug reactions to carbamazepine (CBZ), allopurinol, abacavir etc. With carbamazepine, the risk HLA allele is HLA-B*15:02; however, a sizeable number of HLA-B*15:02 individuals given CBZ are in fact tolerant. There is currently no reliable explanation for why particular HLA-B*15:02 individuals are reactive to, or tolerant to CBZ. To shed light on this question, we selected HLA-B*15:02 positive healthy blood donors and used an in vitro priming cell culture system to stimulate drug-naïve PBMCs with CBZ. Our findings showed that HLA-B*15:02 PBMCs stimulated with CBZ generated IFNγ producing CD8+ cells. Interestingly there were 2 distinct groups of IFNγ producers, a high (responder) and low (non-responder) group. Our data provides a model system with which to study the immune response to drugs and identify cellular pathways that may be avenues for therapeutic intervention.

**Biography**

Associate Professor Ren is a Senior Principal Investigator at Singapore Immunology Network and has a joint appointment with the Department of Microbiology & Immunology, YLLSOM NUS. Prior to joining SlgN, he was instrumental in setting up the Genome Institute of Singapore and was its Deputy Director from 2001 to 2007. He also established the Biopolis Shared Facility and managed its operations as Director from 2004-2007.