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[\[BioMedicine\] Taiwan Genetic Screening to Prevent Severe Adverse Drug Reactions- A Milestone for Personalized Medicine](#)

[BioMedicine] Taiwan Genetic Screening to Prevent Severe Adverse Drug Reactions- A Milestone for Personalized Medicine ([Chinese Version](#))

Academia Sinica Newsletter (2011/03/28) A research team composed of researchers from the Institute of Biomedical Sciences (IBMS), Academia Sinica, and more than 100 physicians from 23 hospitals around Taiwan have demonstrated the clinical effectiveness of genetic screening in preventing two potentially fatal drug-induced syndromes: Stevens-Johnson Syndrome (SJS) and Toxic Epidermal Necrolysis (TEN). This important achievement, which hints at the possibilities of personalized medicine, was published in the leading medical journal New England Journal of Medicine on March 24, 2011.

SJS and related TEN are two serious adverse reactions to drugs that sometimes result in death. In Southeast Asian countries SJS and TEN are most commonly caused by the drug carbamazepine, a popular anticonvulsant and specific analgesic used for the treatment of trigeminal neuralgia. In 2004, the IBMS and Chang-Gung Hospital team reported in the journal Nature that carbamazepine-induced SJS/TEN is strongly associated with a specific genotype (namely HLA-B*1502) in Han Chinese. On the basis of this discovery, a large prospective study, led by Dr. Chen-Yang SHEN and Dr. Yuan-Tsong CHEN, and managed by Dr. Pei CHEN (all from the IBMS) was conducted in hospitals in Taiwan. The study involved 5,000 patients who were screened for HLA-B*1502 before being prescribed carbamazepine. When patients carrying the HLA-B*1502 allele were excluded from treatments involving carbamazepine, no SJS/TEN cases were seen. The study thus illustrates the remarkable capability of HLA-B*1502 screening to prevent SJS/TEN among carbamazepine users, and also suggests that personalized medicine and pharmacogenomics could be extremely useful in the right clinical settings.

The result can be considered a milestone in the development of personalized medicine and has made the prevention of drug toxicity with a gene test a clinical reality.

The article entitled "Carbamazepine-Induced Toxic Effects and HLA-B*1502 Screening in Taiwan" can be found at the New England Journal of Medicine website at: <http://www.nejm.org/doi/full/10.1056/NEJMoa1009717>

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