

Personalized medicine in warfarin therapy

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Researchers from the Ohio State University have developed a rapid, multiplexed genotyping method to identify the single nucleotide polymorphisms (SNPs) that affect warfarin dose. The related report by Yang et al, "Rapid Genotyping of SNPs Influencing Warfarin Drug Response by SELDI-TOF Mass Spectrometry," appears in the March 2010 issue of the *Journal of Molecular Diagnostics*.

Warfarin is an anti-coagulant that is commonly used to prevent blood clots and embolism. However, warfarin dosing is complicated by the fact that it interacts with many commonly used medications and even chemicals in some foods. Certain genetic variations, SNPs, also affect warfarin sensitivity and metabolism.

A group led by Dr. Haifeng M. Wu of the Ohio State University has developed a new rapid method to genotype SNPs that will help clinicians to choose appropriate doses of warfarin for individual patients. Using surface-enhanced laser desorption and ionization time-of-flight <u>mass</u> <u>spectrometry</u> (SELDI-TOF MS), which can determine the elemental composition of a sample, Yang et al could determine the genotype of three warfarin-related SNPs in under five hours with high levels of accuracy.

Yang et al suggest that "on-site application of this method in hospital laboratories will greatly help clinicians to determine appropriate doses of <u>warfarin</u> to treat patients with thromboembolic disorders." In future studies, Dr Wu and colleagues plan to apply the SELDI-TOF platform to genotype other medically important SNPs that influence the efficacy and



safety profiles of many drug therapies and ultimately to promote personalized health care at Ohio State University .

More information: Yang S, Xu L, Wu HM: Rapid Genotyping of SNPs Influencing Warfarin Drug Response by SELDI-TOF Mass Spectrometry. J Mol Diagn 2010, 162-168.

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