The development and validation of novel companion diagnostics to improve the safety and efficacy of the newly approved oral anticoagulants

Published date: April 5, 2016

Technology description

Within the last 3-5 years a series of novel anti-coagulants have been introduced to decrease the risk of thrombotic episodes post-surgery in patients that have undergone hip or knee replacements and to reduce the likelihood of stroke in patients with atrial fibrillation (AF). These new drugs work by targeting/inhibiting one of two serine proteases (Thrombin and Factor Xa) involved in blood clotting. Although impressive clinical outcomes have been achieved in reducing the occurrences of thromboembolisms in these patients, there have been a number of studies suggesting that there is a higher than anticipated risk of severe bleeding episodes in a proportion of patients receiving these drugs. This suggests that the inhibition of the target proteases has “gone too far” and that the levels of each required to maintain normal clotting potential have been depleted/depressed.
Within the Biomolecular Sciences Group, School of Pharmacy, QUB we have developed a range of unique inhibitor molecules, known as “Protease-Tags”, which have the capacity to rapidly and selectively bind active serine proteases. These molecules have been combined with established methods to produce an innovative, sensitive and robust assay technology for protease detection and quantitation, with excellent potential for clinical translation.
We now propose to adapt our Protease-TagTM Technology to develop sensitive, rapid and robust Companion Diagnostic tests for the routine monitoring of patients receiving these novel anti-coagulant therapies. Reducing or eliminating the risk of bleeding episodes would improve patient outcome and the safety profile of these drugs. Significant healthcare benefits would also be apparent through the reduction of the clinical and economic burdens associated with extended hospital stays necessitated by these complications.

Institution

The Queen's University of Belfast

Inventors

Brian Walker

Chief Scienific Officer

Retired Professor - Pharmacy

Robert Hamilton

Technical

Lorraine Martin

Senior Lecturer

Pharmacy

联系我们

叶先生

电 话：021-65679356

手 机：13414935137

邮 箱：yeyingsheng@zf-ym.com