

Innovation ideas

SPOTLIGHT ON A CURRENT PROJECT #034

Drug-driver testing: simultaneous drug detection

Northern Irish firm Randox is developing a new device capable of detecting when drivers have been using drugs. Evidence Multistat is capable of simultaneously testing for the presence of 13 drugs from a single oral fluid sample. Following a successful phase I feasibility study, Randox has been awarded a phase II contract as part of the SBRI initiative to build a prototype device with the aim of cutting testing time from 20 minutes to eight minutes.

Growing problem

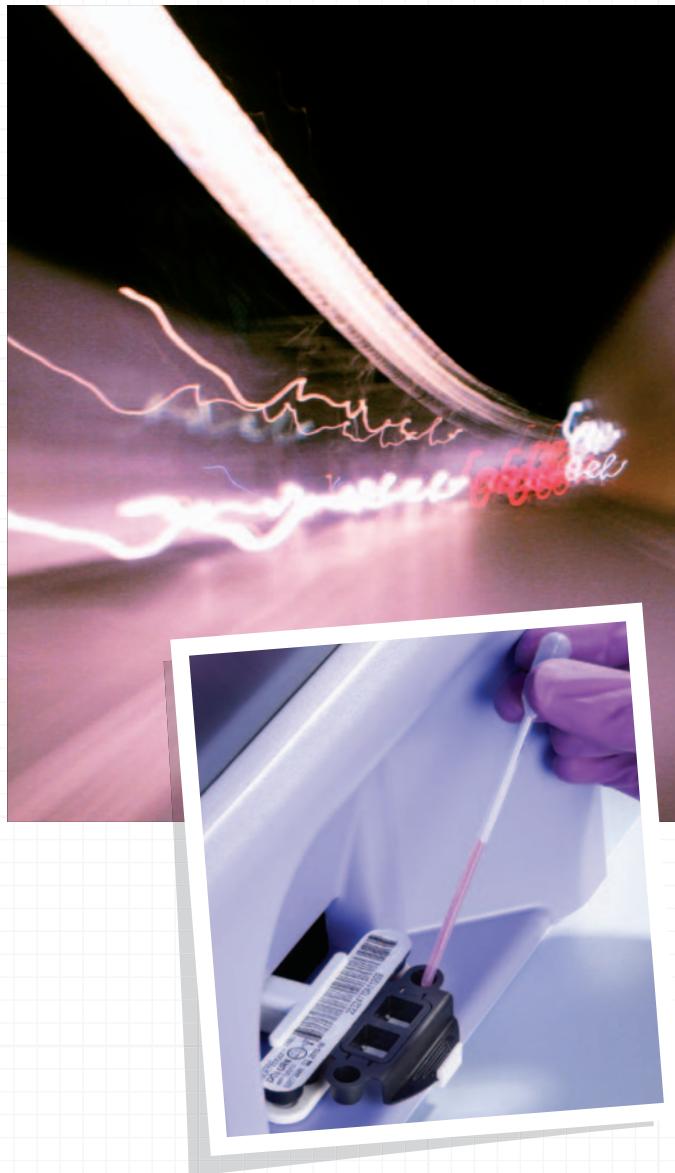
Evidence Multistat is set to tackle an increasing problem on UK roads. According to the Department for Transport there were 56 fatal accidents in 2008 in which drug impairment was judged to be a contributory factor (Contributory Factors: Casualties in reported accidents by severity, GB 2009).

Meanwhile, over 20% of UK adults admitted to using illegal drugs in 2008-09 (British Crime Survey 2009).

Enforcement of drug-driving laws currently relies upon evidence of impairment gathered through police officers' observations of the suspect drug driver, combined with a sample of blood or urine. Currently-available devices do not always test for the entire panel of drugs of abuse, or meet the analytical cut-off levels detailed in the specification.

Rapid detection

Randox Laboratories Ltd, based in County Antrim, successfully carried out a £90k six-month proof of principle project for an oral fluid screening device. The aim was to develop a product capable of detecting – quickly and accurately – a range of impairing drugs and their metabolites (substances created when the drug is metabolised by the body). The product also needs the flexibility to add additional substances to respond to changing trends in drug misuse.



Technology Strategy Board

Driving Innovation

A global market

The market for Evidence Multistat is likely to extend far beyond the UK police, for which it is initially being developed. The global market for drugs of abuse testing was US\$1.9bn in 2007 and is predicted to reach US\$2.6bn by 2014, with US\$445.9m in Europe alone (BCC Research 2008).

Randox already sells diagnostic products in 130 countries through established distributorships and is therefore in a prime position to exploit this innovation globally.

Customs, probation services, prisons, hospitals, the military and rehabilitation clinics are the principal sectors Randox is likely to target with Evidence Multistat, but the private sector, such as transport companies, would also provide relevant markets.

By-products of the SBRI competition and resulting relationship with the Home Office have included Randox gaining insights into the specific requirements of markets such as the police.

Randox has also been introduced to other notable contacts, for example generating new interest in its antibody for testing ketamine, a horse tranquilliser widely abused in the UK.

Randox will use the £250k phase 2 development contract to reduce analysis time down to eight minutes. Work will also continue on incorporating the improved tests for cocaine, benzodiazepines and also buprenorphine.

'Detecting multiple drugs in oral fluid at such low cut-off concentrations and to Home Office specifications was a significant challenge, but we overcame it with the help of SBRI funding. The market for this product is vast – and expanding rapidly.'

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(RESEARCH AND DEVELOPMENT),

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COMPETITION

In June 2010 the Home Office Scientific Development Branch (HOSDB), now the Centre for Applied Science and Technology (CAST), and the Technology Strategy Board launched an SBRI competition to fund development work on an oral fluid (saliva) screening device to aid the detection of drug drivers by the police. The competition was jointly funded by the Home Office, Technology Strategy Board and Department for Transport.

Use of a preliminary drug testing device would assist officers significantly in the enforcement of the drug driving legislation and act as a strong deterrent to potential offenders.

SBRI enables government to engage with industry and act as a lead customer.

Through this engagement it provides:

- innovative solutions to public sector challenges
- and business opportunities for technology companies.

KEY FEATURES

- Competition is demand driven by a defined challenge
- Stimulates the creation of innovative new products or services
- Operates under EU pre-commercial procurement guidelines
- Fully-funded development contract – not a grant

- Fast-track, simplified process
- Particularly suitable for small and medium-sized businesses
- Government department acts as the lead customer
- Intellectual property is retained by the company