**Small Grant Award**

Validation of a method for the detection of Mephedrone

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**Background:**

Mephedrone has recently exploded onto the club scene. It has been termed the 'ecstasy alternative' and 'UK's favourite new drug' and has been the focus of much media attention. It is a legal stimulant that has been compared to ecstasy and amphetamine-cocaine. It can be easily obtained online for around £15-30 for 1 gram. The international popularity of this drug is rapidly increasing notably in countries such as Sweden and Australia. It is controlled in Germany, Sweden, Norway, Denmark, Finland and Israel. It is predicted that mephedrone use will increase in the UK. The Advisory Council on the Misuse of Drugs (ACMD) is currently considering its status in the UK. According to a drug survey, 41.7% of respondents had tried the drug and 33.6% had tried the drug in the last month (MixMag Issue February 2010). There is also a lack of information regarding long-term side effects and toxicity. In the UK, there have been three deaths, including a 14 year old and an 18 year old, in which mephedrone has been implicated. In Scotland, a high profile mephedrone death occurred in January and over the last few months the media has reported widespread use especially in Tayside.

SPSA Forensic Services (Edinburgh) currently receive all Scottish road traffic and criminal toxicology cases as well as morbid toxicology cases from the Lothian & Borders area. This potentially provides a wide sample base to conduct research. At present the laboratory does not have a validated method for the detection of mephedrone. Successful preliminary development work has been carried out at the laboratory and further research will enable a robust method to be developed.

**Aims:**

The overall aim of this project is to gain knowledge regarding the prevalence and effects of mephedrone in cases submitted to SPSA Forensic Services (Edinburgh) and to validate methods of detection. The project would involve the following points:

* To identify suitable methods to detect mephedrone and any metabolites if applicable. Ideally at least two methods would be validated so that confirmation of the drug could be carried out using a second technique. Currently an LC/MS method has been partially developed and requires validation. It is proposed that a second technique be developed such as GC/MS or LC/MS/MS.
* To identify suitable cases to analyse from those submitted to the laboratory. Procurator Fiscal (PF) permission will be sought to use case samples.
* To gather information from Police Forces in Scotland regarding mephedrone use/deaths. It may be possible to gather information from hospitals including information regarding symptoms.