



**UNODC**

United Nations Office on Drugs and Crime

**INTERNATIONAL QUALITY  
ASSURANCE PROGRAMME (IQAP)**

**INTERNATIONAL COLLABORATIVE  
EXERCISES (ICE)**

**Summary Report**

**BIOLOGICAL SPECIMEN**

**2017/2**

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## Test Samples Information

| Samples  | Comments on samples   |
|----------|---|
| Sample 1 | To prepare BS-1, urine was spiked with an aqueous solution of mephedrone hydrochloride (1150ng base/ml). The spiked urine was dispensed in 50ml aliquots and lyophilised.   |
| Sample 2 | To prepare BS-2 urine was spiked with an aqueous solution of morphine sulphate (860ng base/ml). The spiked urine was dispensed in 50ml aliquots and lyophilised.  |
| Sample 3 | BS-3 was a blank urine test sample containing no substances from the ICE menu   |
| Sample 4 | To prepare BS-4, urine was spiked with an aqueous solution of ketamine hydrochloride (1150ng base/ml) and a methanol solution of norketamine (1380ng base/ml). The spiked urine was dispensed in 50ml aliquots and lyophilised. |

| Samples  | Substances       | Concentrations | Comments on substances |
|----------|------------------|----------------|------------------------|
| Sample 1 | Mephedrone       | 1150 ng/ml     |                        |
| Sample 2 | Morphine (Total) | 860 ng/ml      |                        |
| Sample 3 | [blank sample]   |                |                        |
| Sample 4 | Ketamine         | 1150 ng/ml     |                        |
|          | Norketamine      | 1380 ng/ml     |                        |

This report contains the data received from laboratories participating in the current exercise. The results compiled in this report are not intended to be an overview of the quality of work and cannot be interpreted as such. These comments do not reflect the general state of the art within the profession.

Participant results are reported using a randomly assigned "WebCode". This code maintains participant's anonymity, provides linking of the various report sections, and will change with every report.

## Introduction

An important element of the UNODC International Quality Assurance Programme (IQAP) is the implementation of the International Collaborative Exercises (ICE). The exercises allow laboratories, from both developing and developed countries, to continuously monitor their performance in drug testing on a truly global scale. This report provides information on analytical results of laboratories participating in the Biological Specimens (BS) group. In order to maintain confidentiality, the participating laboratories have been assigned random “Web Codes”, which change every round. The analytical results returned by laboratories participating in ICE are evaluated by UNODC and a confidential report is provided to each laboratory on its own performance. The overall analytical results are reviewed by the UNODC’s International Panel of Forensic Experts which oversees the implementation of these exercises, and offers guidance and support in addressing relevant quality issues. The exercises provide an overview of the performance and capacity of participating laboratories and enable UNODC to tailor technical support in the laboratory sector for greatest impact.

## Comments from the International Panel of Forensic Experts

### *Participation of Laboratories*

In the 2017/2 round of the ICE programme, results were submitted within both the Seized Materials (SM) and Biological Specimens (BS) test groups by 241 laboratories in 74 countries. Within the SM test group, there were 200 participating laboratories from 68 countries and within the BS test group, results were submitted by 95 laboratories from 43 countries.

### *Qualitative Analysis*

The analytical technique most commonly used for screening of test samples in the BS test group were enzyme immunoassays (51% of participants), while GC-MS (80%) was the most commonly used technique for identification/confirmation of the components in the test samples. The results for the qualitative identification of the sample components in the BS test group, the number of false positive/negative results and the analyses not performed are shown in table 1.

*Table 1. Qualitative performance of participants in the 2017/2 round of ICE.*

| Test sample                            | BS-1<br>(Mephedrone) | BS-2<br>(Morphine) | BS-3<br>(Blank) | BS-4<br>(Ketamine) | BS-4<br>(Norketamine) |
|--|----------------------|--------------------|-----------------|--------------------|-----------------------|
| Correct identification                 | 60%                  | 88%                | 96%             | 89%                | 88%                   |
| Number of false positives              | 8                    | 10                 | 5               | 3                  |                       |
| Number of false negatives              | 16                   | 5                  | 4               | 4                  |                       |
| Number of analyses not performed (ANP) | 19                   | 6                  | -               | 6                  |                       |

Laboratories reporting false positive or false negative results should investigate the reasons for this and corrective actions should be taken in order to continuously improve performance. ICE participants are reminded that test samples can contain any of the substances in the ICE menu and as such if methods are available, all substances should be considered.

### *Quantitative Analysis*

The test samples in the BS group for the 2017/2 round of ICE contained a total of four components and 43 (46%) of participating laboratories performed quantification. Of these laboratories, it is encouraging to note that 81% of laboratories quantified at least two components and 70% performed quantification of each of the three test samples containing components present. GC-MS was used by 61% of participants for quantification, followed by LC/MS(/MS), which was used by 47% of participants. z-scores obtained by participants in quantification are shown in the table below (percentage + no. of labs indicated).

Table 2. Quantitative performance of participants in the 2017/2 round of ICE.

| z-score                               | Test sample          |                    |                    |                       |
|---------------------------------------|----------------------|--------------------|--------------------|-----------------------|
|                                       | BS-1<br>(Mephedrone) | BS-2<br>(Morphine) | BS-4<br>(Ketamine) | BS-4<br>(Norketamine) |
| $ z  < 2$ ,<br>satisfactory           | 96% (25)             | 81% (34)           | 83% (29)           | 82% (23)              |
| $2 \leq  z  \leq 3$ ,<br>questionable | 4% (1)-              | 5% (2)             | 9% (3)             | 4% (1)                |
| $ z  > 3$ ,<br>unsatisfactory         | -                    | 14% (6)            | 9% (3)             | 14% (4)               |

According to the recommendations in ISO 13528:2005, an unsatisfactory z-score is considered to give an action signal and a questionable z-score is considered to give a warning signal. A single action signal or warning signals in two successive rounds shall be taken that an anomaly has occurred that requires investigation. Participants with z-scores outside acceptable limits should review their quantification procedures.

In the 2017/1 round of ICE, nine laboratories obtained questionable z-scores with  $2 \leq |z| < 3$ . Seven of these laboratories participated and performed quantification in the 2017/2 round with all seven laboratories improving their performance in quantitation for at least one substance. One of these laboratories also obtained questionable z-scores and three of these laboratories also obtained unsatisfactory z-scores in their quantitative performance in 2017/2.

Eleven laboratories obtained unsatisfactory z-scores in ICE 2017/1 with  $|z| \geq 3$ . Of these laboratories, nine participated in ICE 2017/2 and performed quantification, with 7 (78%) improving their performance to obtain satisfactory z-scores in at least one substance. Two of these laboratories also obtained questionable z-scores and four of these laboratories also obtained unsatisfactory z-scores in their quantitative performance in 2017/1.

The following laboratories obtained a single action signal or warning signal in the two successive rounds of 2017/1 and 2017/2 and shall take this as anomaly, which requires further investigation: 6QN3UZ, ABFSNT, ASSINS, Q88I8V, QFXQJQ, SI1NTS and SR7RVR. Of the laboratories that obtained a single action or warning signal in ICE rounds 2016/2 and 2017/1, the following also obtained an action or warning signal in 2017/2 6QN3UZ, Q88I8V, SR7RVR, ASSINS and ABFSNT.

Laboratories that need to perform quantitation routinely are encouraged to participate regularly in external proficiency testing or collaborative exercises such as the ICE programme. This will enable laboratories to assess the quality of their quantitative methods through the z-score values obtained. Laboratories reporting false positive or false negative results should investigate the root causes and corrective actions taken promptly in order to continuously improve performance. Participation in the ICE programme also helps in monitoring the effect of corrective actions. UNODC would like to acknowledge the valuable contribution of the Chemical Metrology Laboratory of the Health Sciences Authority, Singapore, for the provision of specific software used for the quantitative statistical calculations in the ICE programme.

### New Psychoactive Substances (NPS) reported by laboratories participating in the 2017/2 round of the ICE programme

During the 2017/2 round of ICE, participating laboratories from both the seized materials and biological specimens test groups provided information on NPS that had been identified in their laboratories. In total there were 185 reports of 113 substances. The most commonly reported substances were from the groups of synthetic cathinones (30%) followed by synthetic cannabinoids (29%) as shown in figure 1.

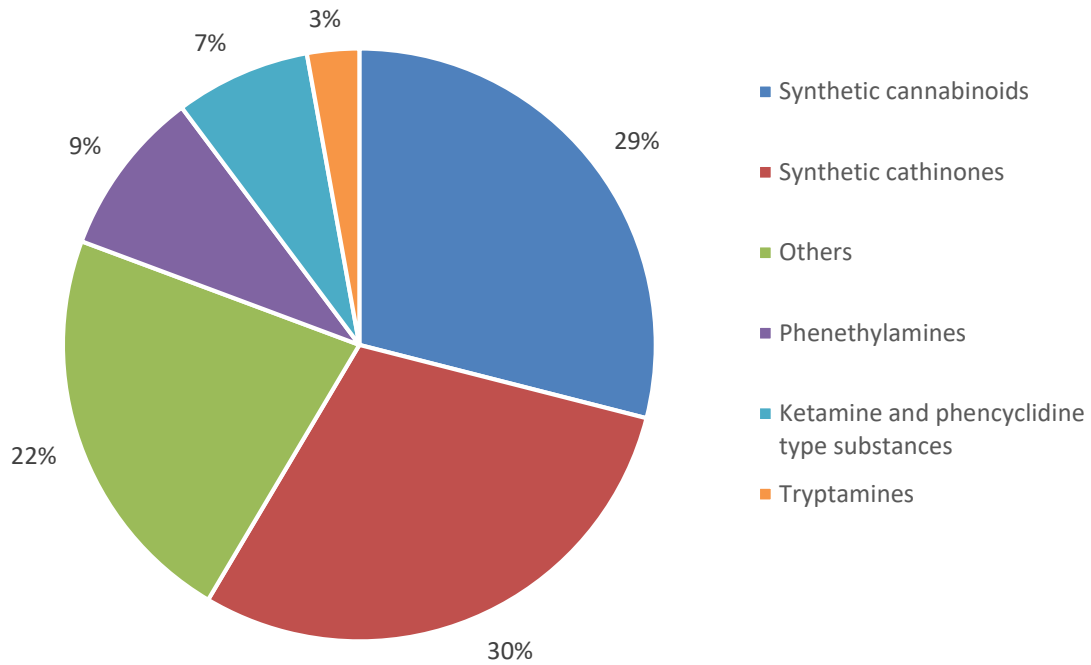


Figure 1. NPS reported by ICE laboratories during the 2017/2 round of ICE

In terms of the mode of action of the NPS reported by ICE participants, the predominant substances reported were stimulants (38%), while 29% were synthetic cannabinoid receptor agonists (SCRA's) and 13% were synthetic opioids (which included seven fentanyl derivatives) as shown in figure 2.

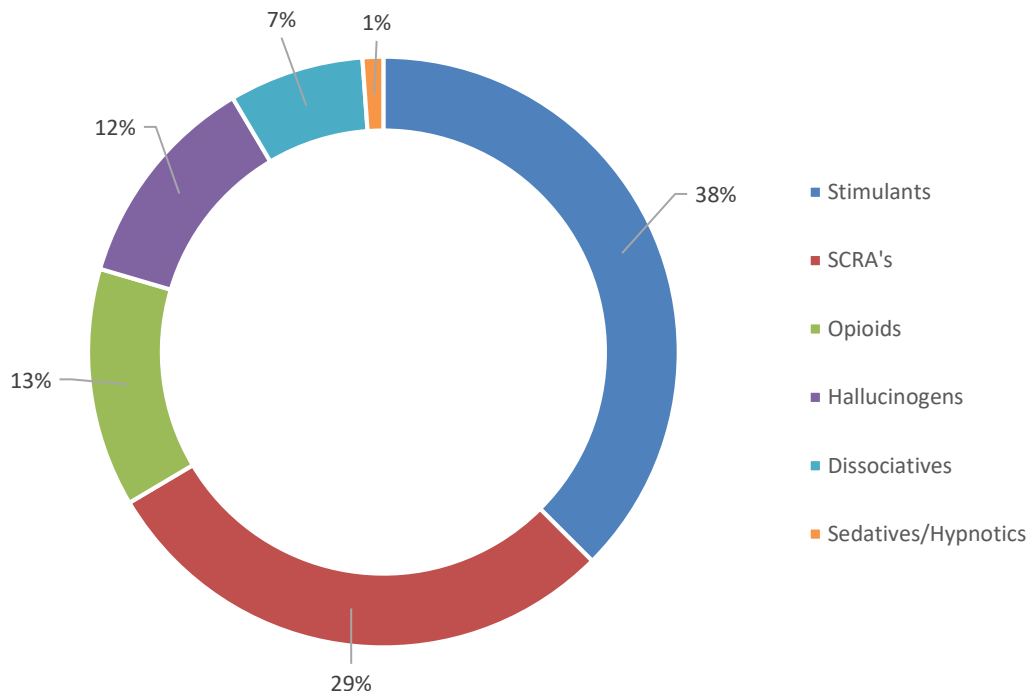


Figure 2. Mode of action of NPS reported by ICE participants in the 2017/2 round of ICE

### NPS most commonly reported by laboratories participating in ICE 2017/2

The substance most often reported by ICE participants was the synthetic cathinone 4-chloro-*alpha*-pyrrolidinovalerophenone (4-Cl-*alpha*-PVP) followed by the synthetic cannabinoid receptor agonist 5F-MDMB-PINACA (methyl 2-(1-(5-fluoropentyl)-1*H*-indazole-3-carboxamido)-3,3-dimethylbutanoate), and the synthetic opioid U-47700 (3,4-dichloro-N-((1*S*,2*S*)-2-(dimethylamino)cyclohexyl)-N-methylbenzamide). For further details on these substances and others reported to the UNODC Early Warning Advisory, ICE participants can log on to the UNODC ICE portal and select the icon for the Early Warning Advisory on New Psychoactive substances as shown below.

**UNODC New Psychoactive Substances Portal and International Collaborative Exercise Portal**

Welcome to the online portals of the UNODC Laboratory and Scientific Section. From this page you can access both portals. Please click on the icons below to be redirected to the portal of your choice.



**ICE Portal**

**International Quality Assurance Programme (IQAP) International Collaborative Exercises (ICE)**  
An important part of the UNODC International Quality Assurance Programme is the International Collaborative Exercises (ICE), which aims to assist drug testing laboratories worldwide in assessing their own performance and taking corrective actions, when appropriate. In each of the two rounds per year of the ICE programme, participating laboratories receive test samples designed to mimic their daily work, that contain controlled drugs from actual seizures and/or test samples that contain drugs and their metabolites in biological specimens (specifically urine).



**NPS Portal**

**UNODC Early Warning Advisory (EWA) on New Psychoactive Substances (NPS)**  
The UNODC EWA portal provides access to basic information on new psychoactive substances (NPS). Registered users can access additionally specific information on NPS, including trend data on emergence and persistence, chemical details on individual substances, supporting documentation on laboratory analysis and legislative responses.

## Codes and Abbreviations

(+) “positive”: Indicates that the analyte is identified; for presumptive tests (e.g. colour reactions), indicates that a positive reaction was obtained.

(-) “negative”: Indicates that the analyte is not identified.

(ANP): Analysis not performed.

| Tech Code | Name  |
|-----------|---|
| 100       | Agglutination Techniques  |
| 110       | Enzyme Immunoassay Techniques                                     |
| 120       | Fluorescence Polarization Immunoassay                             |
| 130       | Radioimmunoassay  |
| 140       | Colorimetric reactions  |
| 141       | Marquis reagent (sulphuric acid, formaldehyde)                    |
| 142       | Cobalt thiocyanate  |
| 150       | Thin Layer Chromatography   |
| 160       | High/Ultra High Performance Liquid Chromatography                 |
| 161       | High Performance Liquid Chromatography with diode array detection |
| 170       | Gas Chromatography NPD  |
| 171       | Gas Chromatography FID  |
| 172       | Gas Chromatography ECD  |
| 180       | Gas Chromatography/Mass Spectrometry                              |
| 190       | Fourier Transform Infrared Spectrometry                           |
| 200       | Spectrophotometry (visible, UV)                                   |
| 210       | Others (specify)  |
| 211       | NMR   |
| 220       | Microcrystal test   |
| 230       | Liquid chromatography/mass spectrometry                           |
| 231       | Liquid chromatography/tandem mass spectrometry                    |

## Sample 1 Analysis

### Identified substances for Test Sample 1

| Code   | Identified Substances                 |
|--------|---------------------------------------|
| 0RWBZT | MEPHEDRONE                            |
| 0U9I7W | Mephedrone                            |
| 1ZVY1V | Mephedrone                            |
| 2HHN2K | mephedrone                            |
| 2SLHZZ | Mephedrone                            |
| 4Q733L | NO DETECTED                           |
| 4X24EX | Mephedrone                            |
| 5VR6P5 | None                                  |
| 6EGBSR | MEPHEDRONE                            |
| 6QN3UZ | Mephedrone and Methcatinone           |
| 87FOG8 | Mephedrone                            |
| 8AXU8U | Mephedrone                            |
| 8TMPMM | Mephedrone                            |
| 99LC9E | Mephedrone                            |
| 99S3IV | mephedrone                            |
| ASSINS | MEPHEDRONE                            |
| CDTVXT | Mephedrone                            |
| DDDFQ8 | no                                    |
| DFBF99 | mephedrone                            |
| DKDX3I | Mephedrone                            |
| DLGK3S | mephedrone                            |
| DPIDDC | mephedrone                            |
| ESJUUL | no drugs found                        |
| FJAJZW | mephedrone                            |
| FSQLDZ | 3,4-methylenedixymetamfetamine (MDMA) |
| GAPRQN | mephedrone                            |
| GRMJ5J | MEPHEDRONE                            |
| HDDDQ7 | negative                              |
| HFYH9H | none                                  |
| HI1IWC | mephedrone                            |
| HZIBM9 | Mephedrone                            |
| IBZOZI | Not detected                          |
| JZ6FPI | mephedrone (4-MMC)                    |
| K3NEVF | mepedrone,normephedronee              |
| KDK3O2 | Mephedrone                            |
| KQLQQU | Mephedrone                            |
| LLLJLL | Mephedrone                            |
| MBMFTD | Mephedrone                            |
| NPHYFU | mephedrone                            |
| OH9O5O | mephedrone                            |





| Code   | Identified Substances              |
|--------|------------------------------------|
| OPGOYJ | Mephedrone-Metamphetamine          |
| OPOU6J | Mephedrone                         |
| OVZUQL | Mephedrone                         |
| PDZQ2X | mephedrone                         |
| PWZSS3 | mephedrone                         |
| Q7YNHH | Mephedrone                         |
| QFXQJQ | Paracetamol and caffeine           |
| QQ9VQW | ANP                                |
| QQQHQQ | mephedrona                         |
| RZC03Q | methedron, paracetamol, erespal    |
| S2PSS9 | Mephedrone                         |
| SDHWUN | Mephedrone                         |
| SI1NTS | mephedrone                         |
| SPNU7I | Mephedrone                         |
| SR7RVR | mephedrone                         |
| TAXV1  | Mephedrone                         |
| TV5NIY | Mephedrone                         |
| TZXA9  | Mephedrone                         |
| UKWRKO | MEPHEDRONE                         |
| UUAVAA | Mephedrone                         |
| UZLYUO | Buprenorphine and Norbuprenorphine |
| VZ4SC  | 4-MMC                              |
| WE3FAF | Mephedrone                         |
| WN9NYZ | Mephedrone                         |
| WSZX4Q | Mephedrone, paracetamol, quinine   |
| XN7JCJ | Mephedrone                         |
| XPOAPR | -                                  |
| Z3OOJL | Metamfetamine                      |



Statement of findings for Test Sample 1

| Code   | Mephedrone |  |
|--------|------------|--|
| 0RWBZT | +          |  |
| 0U9I7W | +          | It indicates the intake of mephedrone  |
| 1ZVY1V | +          | This person consumed mephedrone.   |
| 25NT0J | <b>ANP</b> |  |
| 2HHN2K | +          |  |
| 2SLHZZ | +          | Mephedrone is a synthetic stimulant drug of the amphetamine and cathinone classes                        |
| 3FYFZF | <b>ANP</b> |  |
| 4Q733L | -          |  |
| 4X24EX | +          | Mephedrone was found in 2017/2/BS-1  |
| 5FVKJS | <b>ANP</b> | No common drugs were detected in sample 2017/2/BS/1.   |
| 5VR6P5 | -          | No controlled drugs detected in this sample  |
| 6EGBSR | +          |  |
| 6QN3UZ | +          | In the sample BS-1 2017/2 was detected mephedrone at the concentration of 122.37 ng/mL and methcatinone. |
| 7PVYUM | <b>ANP</b> |  |
| 87FOG8 | +          | Detected mephedrone in urine   |
| 8AXU8U | +          | Sample 2017/2/BS-1 found to contain Mephedrone   |
| 8TMPMM | +          | Findings confirm the prior ingestion of mephedrone by the individual                                     |
| 99LC9E | +          | In sample BS-1 the drug Mephedrone was found   |
| 99S3IV | +          | Positive to mephedrone.  |
| ABFSNT | -          |  |
| ASSINS | +          | THE SAMPLE BS-1 CONTAINS MEPHEDRONE  |
| BKKBB1 | <b>ANP</b> |  |
| C8QSDC | <b>ANP</b> | No targeted drug was detected in the urine screen.   |



| Code   | Mephedrone  |  |
|--------|---|--|
| CDTVXT | +   |  |
|        | Mephedrone  |  |
| DDDFQ8 | <b>ANP</b>  |  |
| DFBF99 | +   |  |
|        | complete coincidence of retention time and basic ions with library data   |  |
| DKDX3I | +   |  |
| DLGK3S | +   |  |
|        | other identified compounds: caffeine (GCMS);<br>quinine and paracetamol (LCMSMS)  |  |
| DPIDDC | +   |  |
|        | in the sample detected mephedrone in the amount of 400 ng/ml  |  |
| E3PK1R | <b>ANP</b>  |  |
| ESUUIL | <b>ANP</b>  |  |
|        | Founded paracetamol and caffeine  |  |
| FJAJZW | <b>ANP</b>  |  |
| FNNKWN | <b>ANP</b>  |  |
|        | Test sample, 2017/2/BS-1 was not found to contain controlled drugs therefore Negative for both<br>Screening and Confirmatory tests.   |  |
| FSQLDZ | <b>ANP</b>  |  |
|        | BY LC-MS/MS 0.0355ng/ml of MDMA was detected  |  |
| G7TTMY | -   |  |
| GAPRQN | +   |  |
|        | mephedrone was found in the sample BS-1 at the detection limit.   |  |
| GCWMHX | <b>ANP</b>  |  |
|        | The not coincidence between the relative retention time and mass-fragmentograms from a<br>reference standard analysed at the same conditions that the biological sample indicates the not<br>detection of studied analytes. |  |
| GJTUT1 | +   |  |
| GRMJ5J | +   |  |
|        | In sample BS 1 was found and confirmed the presence of MEPHEDRONE   |  |
| HDDDQ7 | -   |  |
|        | control   |  |
| HFYH9H | -   |  |
|        | We did not find any drugs. We found only caffeine.  |  |
| HI1IWC | +   |  |
| HZIBM9 | +   |  |
|        | Consistent with use of mephedrone   |  |
| IBZOZI | -   |  |
|        | Drugs not detected according the results of gas chromatography/mass spectrometry analysis.  |  |
| IEN8WG | <b>ANP</b>  |  |



| Code   | Mephedrone |   |
|--------|------------|---|
| JCL3AU | ANP        |   |
| JEKY5F | -          |   |
| JZ6FPI | +          | positive  |
| K3NEVF | +          | Discovered: synthetic cathinone mephedrone, normephedrone   |
| KDK3O2 | +          |   |
| KQLQQU | +          | -   |
| L5HODY | ANP        | Common drugs not detected.  |
| L9E9G9 | ANP        |   |
| LLLJLL | +          | Sample is positive for Mephedrone   |
| MBMFTD | +          |   |
| NPHYFU | +          | drugs detected  |
| OC7RZC | +          |   |
| OH9O5O | +          | Mephedrone or 4-methylmethcathinone detected  |
| OPGOYJ | +          | after genral extraction liq-liq , screening and specific extraction and chromatographic method adapter. |
| OPOU6J | +          |   |
| OVZUQL | +          |   |
| PDZQ2X | +          | use of mephedrone   |
| PWZSS3 | +          | Sample 1 contain mephedrone.  |
| Q7YNHH | +          |   |
| Q88I8V | -          |   |
| QFXQJQ | -          |   |
| QQ9VQW | ANP        | Screening test: Not present<br>GC/M: Not to be present.   |
| QQQHQQ | +          | In Urine sample n° 1, mephedrona was identified   |



| Code   | Mephedrone |  |
|--------|------------|--|
| RZC03Q | +          | indicated in the direction as the purpose of the study of the substance - mephedrone found at the detection limit of the methods used.   |
| S2PSS9 | +          | Toxicological analysis revealed the presence of mephedrone   |
| SDHWUN | +          | Mephedrone detected in BS-1 sample   |
| SI1NTS | +          | a solid phase extraction was carried out identified by GC/MS and confirming by LC/MS/MS  |
| SOSKS6 | ANP        |  |
| SPNU7I | +          |  |
| SR7RVR | +          | Presence of mephedrone   |
| TAXVV1 | +          | The sample contains mephedrone.  |
| TSSGSG | -          |  |
| TV5NIY | +          | caffeine was also present  |
| TZXXA9 | +          | Mephedrone was found in BS-1   |
| UH2KUD | ANP        |  |
| UKWRKO | +          | BS-1 is positive for Mephedrone  |
| UUAVAA | +          | Mephedrone is a synthetic stimulant in the amphetamine and cathinone class. Mephedrone is a Schedule I substance in the United States.   |
| UZLYUO | -          | Extraction of sample using two solvent systems for TLC analysis.   |
| VVZ4SC | +          |  |
| WE3FAF | +          |  |
| WN9NYZ | +          | Mephedrone use.  |
| WSZX4Q | +          | Mephedrone Detected,<br>Paracetamol Detected,<br>Quinine Detected  |
| WWEE78 | -          |  |
| XN7JCJ | +          | Mephedrone(4-methylmethcathinone) is a synthetic stimulant drug of the amphetamine and cathinone classes.Its reported effects are euphoria, stimulation, empathy but also teeth grinding, hallucinations and erratic behaviour |
| XOMAKO | -          |  |



| Code   | Mephedrone  |  |
|--------|---|--|
| XPOAPR | ANP   |  |
|        | N/A   |  |
| XXFUX7 | ANP   |  |
|        | Analysed drugs are not detected   |  |
| Z30OJL | -   |  |
|        | The sample 2017/2/BS-1 was found to contain the controlled drug metamfetamine.          |  |
| ZQZJK  | -   |  |
|        | The substances that were tested for weren't found to be present in the sample analysed. |  |



**Identification methods for Test Sample 1**

**Legend:** S ... used for Screening I ... used for Identification SI ... used for both

| Code   | 100 | 110 | 120 | 141 | 150 | 160 | 161 | 170 | 171 | 180 | 230 | 231 | 210                                      |
|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| 0RWBZT |     |     |     |     |     |     |     |     |     |     | SI  | I   |  |
| 0U9I7W |     | S   |     |     |     |     |     | I   |     | SI  |     |     |  |
| 1ZVY1V |     | S   |     |     |     |     |     |     |     | I   |     | I   |  |
| 25NT0J |     |     | SI  |     |     |     |     |     |     | I   | I   |     |  |
| 2HHN2K |     | S   |     |     |     |     | I   |     |     | I   |     |     |  |
| 2SLHZZ |     |     |     |     |     |     |     |     |     | I   |     | SI  |  |
| 3FYFZF |     | S   |     |     |     |     |     |     |     | I   |     |     |  |
| 4Q733L |     | S   |     |     |     |     |     |     |     | I   |     |     |  |
| 4X24EX |     |     |     |     |     |     |     |     |     | S   |     | I   |  |
| 5FVKJS |     |     |     |     |     |     |     |     |     | SI  |     |     |  |
| 5VR6P5 |     | S   |     |     | I   |     |     |     |     | I   |     |     |  |
| 6EGBSR |     |     |     |     |     |     |     |     |     |     |     | I   | S IMMUNOCHROMATOGRAPHIC TEST             |
| 6QN3UZ |     | S   |     |     |     |     |     |     |     | I   |     | SI  |  |
| 7PVYUM |     |     |     |     |     |     |     |     |     | I   |     | I   |  |
| 87FOG8 |     |     |     |     |     |     |     |     |     | SI  |     |     |  |
| 8AXU8U |     |     |     |     |     |     |     |     |     | SI  |     |     |  |
| 8TMPMM |     | I   |     |     |     |     |     |     |     |     |     | SI  |  |
| 99LC9E |     |     |     |     |     |     |     |     |     | SI  |     | SI  |  |
| 99S3IV |     | S   |     |     |     |     |     |     |     | I   |     | SI  |  |
| ABFSNT |     | S   |     |     |     |     |     |     |     | I   |     |     |  |
| ASSINS |     | S   |     |     |     |     |     |     |     | I   |     |     |  |
| BKKBB1 |     | S   |     |     |     |     |     |     |     | I   |     |     |  |
| C8QSDC |     |     |     |     |     |     |     |     |     |     |     | SI  |  |
| CDTVXT |     |     |     |     |     |     |     |     |     | I   |     | I   | I Kinetic Interactions of Microparticles |
| DDDFQ8 |     | S   |     |     |     |     |     |     |     |     |     |     |  |
| DFBF99 |     | S   |     |     |     |     |     |     |     | I   |     |     |  |
| DKDX3I |     | S   |     |     |     |     | I   |     |     | SI  |     |     |  |
| DLGK3S |     |     |     |     |     |     | I   |     |     | I   |     | SI  |  |
| DPIDDC |     | S   |     |     |     |     |     |     |     | I   |     |     |  |
| E3PK1R |     | S   |     |     |     |     |     |     |     | I   |     |     |  |
| ESUUIL |     | S   |     |     |     |     |     |     |     | I   |     | I   |  |
| FNNKWN |     |     |     |     |     |     |     |     |     | I   |     |     | S DT KIT                                 |
| FSQLDZ |     | S   |     |     |     |     |     |     |     |     |     | I   |  |



| Code   | 100 | 110 | 120 | 141 | 150 | 160 | 161 | 170 | 171 | 180 | 230 | 231 | 210  |
|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| G7TTMY |     |     |     |     |     |     |     |     |     | SI  |     | SI  |  |
| GAPRQN |     | S   |     |     |     |     |     |     |     | SI  |     |     |  |
| GCWMHX |     |     |     |     |     |     |     |     |     | I   |     |     |  |
| GJTUT1 |     | S   |     |     |     | I   | I   |     |     | I   |     |     |  |
| GRMJ5J |     |     |     |     |     |     |     |     |     |     | SI  | I   |  |
| HDDDQ7 |     |     |     |     |     |     |     |     |     | SI  |     |     |  |
| HFYH9H |     |     |     |     | I   |     |     |     |     |     |     |     | SI Dipro Drug lab screen                   |
| HI1IWC |     |     |     |     | I   |     |     |     |     | I   |     |     |  |
| HZIBM9 |     | S   |     |     |     |     |     |     |     | I   |     | SI  |  |
| IBZOZI |     |     |     |     |     |     |     |     |     | I   |     |     |  |
| IEN8WG |     |     |     |     |     |     |     |     |     | I   |     |     | S Lateral Flow Immunoassay                 |
| JCL3AU |     |     |     |     |     |     |     |     |     | I   | S   |     | S lateral flow immunochromatographic assay |
| JEKY5F |     |     |     |     |     |     | I   |     |     | I   |     |     | S chromatographic immunoassay              |
| JZ6FPI |     |     | S   |     |     |     | SI  |     |     |     |     |     | I SFC-MS/MS                                |
| K3NEVF |     |     |     |     |     |     |     |     |     | SI  |     |     |  |
| KDK3O2 |     | S   |     |     |     |     |     |     |     | I   |     |     |  |
| KQLQQU |     |     |     |     |     |     |     |     |     | SI  |     |     |  |
| L5HODY |     | S   |     |     |     |     |     |     |     | I   |     |     |  |
| L9E9G9 |     | S   |     |     |     |     |     |     |     | I   |     |     |  |
| LLLJLL |     | S   |     |     |     |     |     |     |     | I   |     | I   | S LC-TOF                                   |
| MBMFTD |     | S   |     |     |     |     |     |     |     | I   |     | I   |  |
| NPHYFU |     |     |     |     |     |     |     |     |     | SI  |     |     |  |
| OC7RZC |     | S   |     |     |     |     |     |     |     | I   |     | I   |  |
| OH9O5O |     |     |     |     |     |     |     |     |     | I   |     |     |  |
| OPGOYJ |     | S   |     |     |     |     | I   |     |     | I   |     |     |  |
| OPOU6J |     | S   |     |     |     |     |     |     |     | I   | I   |     |  |
| OVZUQL | S   |     |     |     |     |     |     |     |     | I   |     |     |  |
| PDZQ2X |     |     |     |     |     |     |     |     |     | I   |     |     |  |
| PWZSS3 |     | S   |     |     | I   |     |     |     |     |     |     |     | I biočip                                   |
| Q7YNHH |     | S   |     |     |     |     |     |     |     | I   |     | I   |  |
| Q88I8V |     |     |     |     |     |     |     |     |     | I   |     |     | S TRIAGE 8-ALERE Sure Step                 |
| QFXQJQ |     | S   |     |     |     |     | I   |     |     | I   |     |     |  |
| QQ9VQW |     | S   |     |     |     |     |     |     |     | I   |     |     |  |
| QQQHQQ |     | S   |     |     |     |     |     |     |     |     |     | I   |  |
| RZC03Q |     | S   |     |     |     |     |     |     |     | I   |     |     |  |
| S2PSS9 |     | S   |     |     |     |     |     |     |     | SI  |     | I   |  |
| SDHWUN |     |     |     |     |     |     |     |     |     | I   |     |     |  |





| Code   | 100 | 110 | 120 | 141 | 150 | 160 | 161 | 170 | 171 | 180 | 230 | 231 | 210                                    |
|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| SI1NTS |     | S   |     |     |     |     |     |     |     | I   |     | I   |  |
| SOSKS6 |     | S   |     |     |     |     |     |     |     | I   |     | I   |  |
| SPNU7I |     | S   |     |     |     |     |     |     |     |     |     |     | I LC/QTOF                              |
| SR7RVR |     | S   |     |     |     |     |     |     |     | S   |     | SI  |  |
| TAXVV1 |     |     |     |     |     |     |     |     |     | SI  |     | I   | S Multi-Drug Screen Test Panel         |
| TSSGSG |     |     |     |     |     |     |     |     |     | I   |     |     |  |
| TV5NIY |     |     |     |     |     |     |     |     |     | I   |     |     | S one step immunochromatographic assay |
| TZXXA9 |     |     |     |     |     |     |     |     |     | S   |     | I   |  |
| UH2KUD |     |     |     |     |     |     |     |     |     | I   |     |     |  |
| UKWRKO |     | S   |     |     | I   |     |     |     |     | I   |     | I   |  |
| UUAVAA |     |     |     |     |     |     |     |     |     |     |     |     | I LC-QTOF                              |
| UZLYUO |     |     |     |     | SI  | I   |     |     | I   |     |     |     | S TEST STRIPS                          |
| VVZ4SC |     | S   |     |     |     |     |     |     |     | I   |     | I   |  |
| WE3FAF |     | S   |     |     |     |     |     |     |     |     | I   | I   |  |
| WN9NYZ |     |     |     |     |     |     |     |     |     | I   | I   | S   |  |
| WSZX4Q |     | S   |     |     |     |     |     |     |     | I   |     | I   |  |
| WWEE78 | S   |     |     |     |     |     |     |     |     | I   |     | I   |  |
| XN7JCJ |     | S   |     |     |     |     |     |     |     | I   |     | I   |  |
| XOMAKO |     | S   |     |     |     |     |     |     |     | SI  |     |     |  |
| XPOAPR |     |     |     | S   | SI  |     |     |     |     | I   |     |     |  |
| XXFUX7 |     | SI  |     |     |     |     |     |     |     | SI  |     |     |  |
| Z3OOJL |     |     |     |     |     |     |     |     |     | SI  |     |     |  |
| ZQZJZK |     | S   |     |     |     |     |     |     |     | I   |     |     |  |

**RESPONSE SUMMARY FOR TEST SAMPLE 1**
**Participants: 94**

The response summary of all 94 participating laboratories for the identification of BS-1, frequency of use of screening and identification techniques and false positives and negatives:

**Identification of Test Sample-1:**

| Substance Name | Number of laboratories correctly identifying: |
|----------------|---|
| Mephedrone     | 56  |

**False positives for Test Sample-1:**

| Round Code: | Substance reported:                | Tech Code: |
|-------------|------------------------------------|------------|
| FSQLDZ      | MDMA                               | 231        |
| K3NEVF      | Normephedrone                      | 180        |
| OPGOYJ      | Metamfetamine                      | 161        |
| UZLYUO      | Buprenorphine,<br>norbuprenorphine | 150/171    |
| Z3OOJL      | Metamfetamine                      | 180        |
| Q88I8V      | GHB                                | 180        |
| WWEE78      | Morphine                           | 231        |

**False negatives for Test Sample-1**

| Round Code: | Answer Code: | Tech Code: | Round Code: | Answer Code: | Tech Code: |
|-------------|--------------|------------|-------------|--------------|------------|
| 5VR6P5      | -            | 180        | QFXQJQ      | -            | 180/161    |
| ABFSNT      | -            | 180        | TSSGSG      | -            | 180        |
| G7TTMY      | -            | 180/231    | UZLYUO      | -            | 150/171    |
| HDDDQ7      | -            | 180        | WWEE78      | -            | 231        |
| HFYH9H      | -            | 150        | XOMAKO      | -            | 180        |
| IBZOZI      | -            | 180        | Z3OOJL      | -            | 180        |
| JEKY5F      | -            | 161/180    | ZQZJZK      | -            | 180        |
| Q88I8V      | -            | 180        | 4Q733L      | -            | 180        |

The following nineteen laboratories did not carry out analysis for mephedrone in test sample 1  
 25NT0J, 3FYFZF, 5FVKJS, 7PVYUM, BKKBB1, C8QSDC, DDDFQ8, E3PK1R, ESUUIL, FJAJZW, FNNKWN, FSQLDZ, GCWMHX, IEN8WG, JCL3AU, L5HODYQQ9VQW, L9E9G9, SOSKS6, UH2KUD, XPOAPR, XXFUX7

**Frequency of use of screening, identification and quantification techniques:**

| <b>Response Summary</b> |     |      |     |     |     |     |     |     |     |      |      |     |      |
|-------------------------|-----|------|-----|-----|-----|-----|-----|-----|-----|------|------|-----|------|
| <b>Participants 94</b>  |     |      |     |     |     |     |     |     |     |      |      |     |      |
| Technique               | 100 | 110  | 120 | 141 | 150 | 160 | 161 | 170 | 171 | 180  | 210  | 230 | 231  |
| Screening (No.)         | 2   | 48   | 2   | 1   | 2   | 0   | 1   | 0   | 0   | 20   | 11   | 3   | 11   |
| (%)                     | 2.1 | 51.1 | 2.1 | 1.1 | 2.1 | 0.0 | 1.1 | 0.0 | 0.0 | 21.3 | 11.7 | 3.2 | 11.7 |
| Identification (No.)    | 0   | 2    | 1   | 0   | 7   | 2   | 8   | 1   | 1   | 75   | 6    | 6   | 35   |
| (%)                     | 0.0 | 2.1  | 1.1 | 0.0 | 7.4 | 2.1 | 8.5 | 1.1 | 1.1 | 79.8 | 6.4  | 6.4 | 37.2 |
| Quantification (No.)    | 0   | 1    | 0   | 0   | 0   | 0   | 1   | 0   | 0   | 26   | 2    | 1   | 20   |
| (%)                     | 0.0 | 2.3  | 0.0 | 0.0 | 0.0 | 0.0 | 2.3 | 0.0 | 0.0 | 60.5 | 4.7  | 2.3 | 46.5 |

**Z-Scores for Test Sample 1**

| Code   | Mephedrone               |                                  |         |
|--------|--------------------------|----------------------------------|---------|
|        | Concentration<br>(ng/ml) | Deviation from<br>robust average | z-score |
| 6QN3UZ | 122                      | -554                             | -1.7    |
| OVZUQL | 270                      | -406                             | -1.2    |
| WN9NYZ | 283                      | -393                             | -1.2    |
| 87FOG8 | 320                      | -356                             | -1.1    |
| KQLQQU | 330                      | -346                             | -1.0    |
| DPIDDC | 400                      | -276                             | -0.8    |
| ASSINS | 430                      | -246                             | -0.7    |
| LLLJLL | 474                      | -202                             | -0.6    |
| 1ZVY1V | 480                      | -196                             | -0.6    |
| KDK3O2 | 570                      | -106                             | -0.3    |
| SR7RVR | 615                      | -61                              | -0.2    |
| 2HHN2K | 631                      | -45                              | -0.1    |
| SPNU7I | 635                      | -41                              | -0.1    |
| XN7JCJ | 699                      | 23                               | 0.1     |
| TV5NIY | 712                      | 36                               | 0.1     |
| VVZ4SC | 720                      | 44                               | 0.1     |
| UKWRKO | 740                      | 64                               | 0.2     |
| TZXXA9 | 854                      | 178                              | 0.5     |
| 6EGBSR | 855                      | 179                              | 0.5     |
| Q7YNHH | 942                      | 266                              | 0.8     |
| TAXVV1 | 966                      | 290                              | 0.9     |
| 4X24EX | 970                      | 294                              | 0.9     |
| DKDX3I | 1090                     | 414                              | 1.2     |
| NPHYFU | 1120                     | 444                              | 1.3     |
| FJAJZW | 1121                     | 445                              | 1.3     |
| JZ6FPI | 1560                     | 884                              | 2.6     |

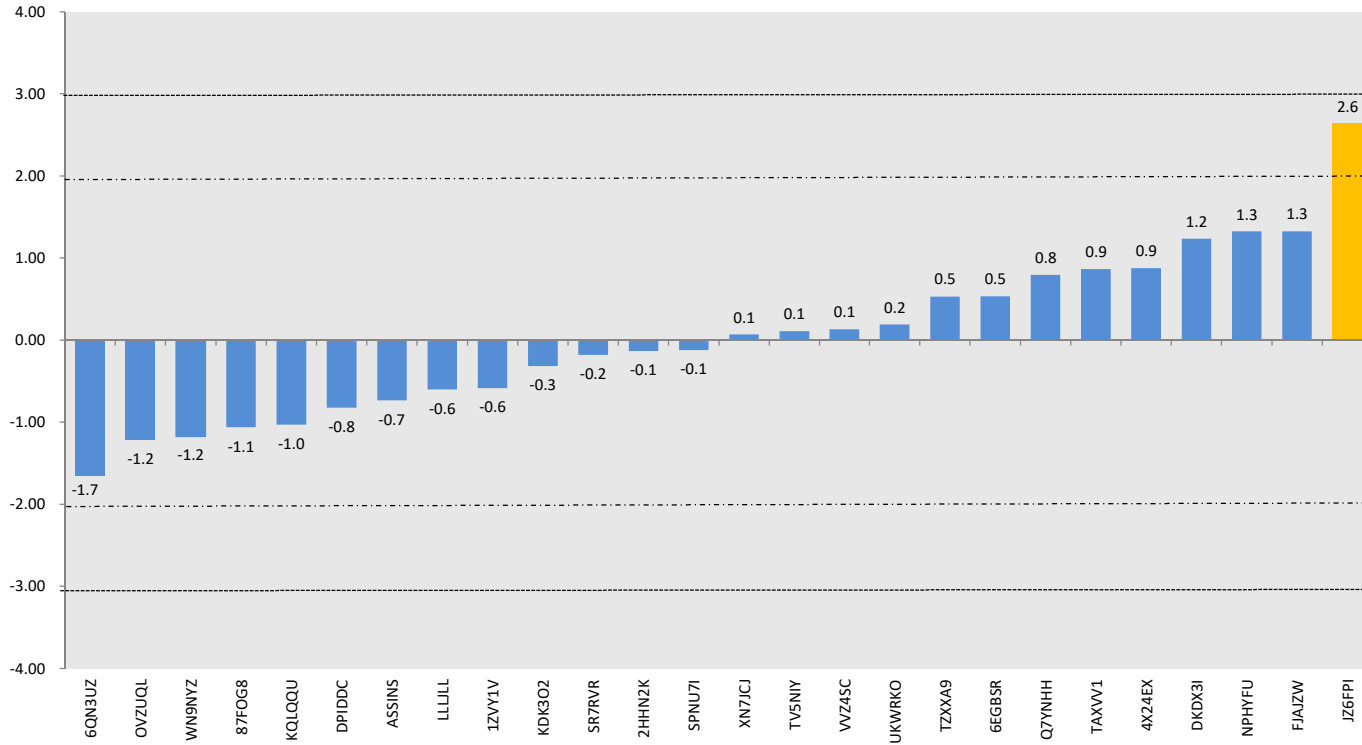
**Z-Score Report per Sample per Substance**

**Round: 2017/2**

**Substance: BS-1; Mephedrone**

Robust average = 676 ng/ml

UNODC value = 1150 ng/ml



z-scores can be interpreted by participants in line with ISO 13528:2005, section 7.4.2 and ISO/IEC guide43-1:1997(E) as follows:

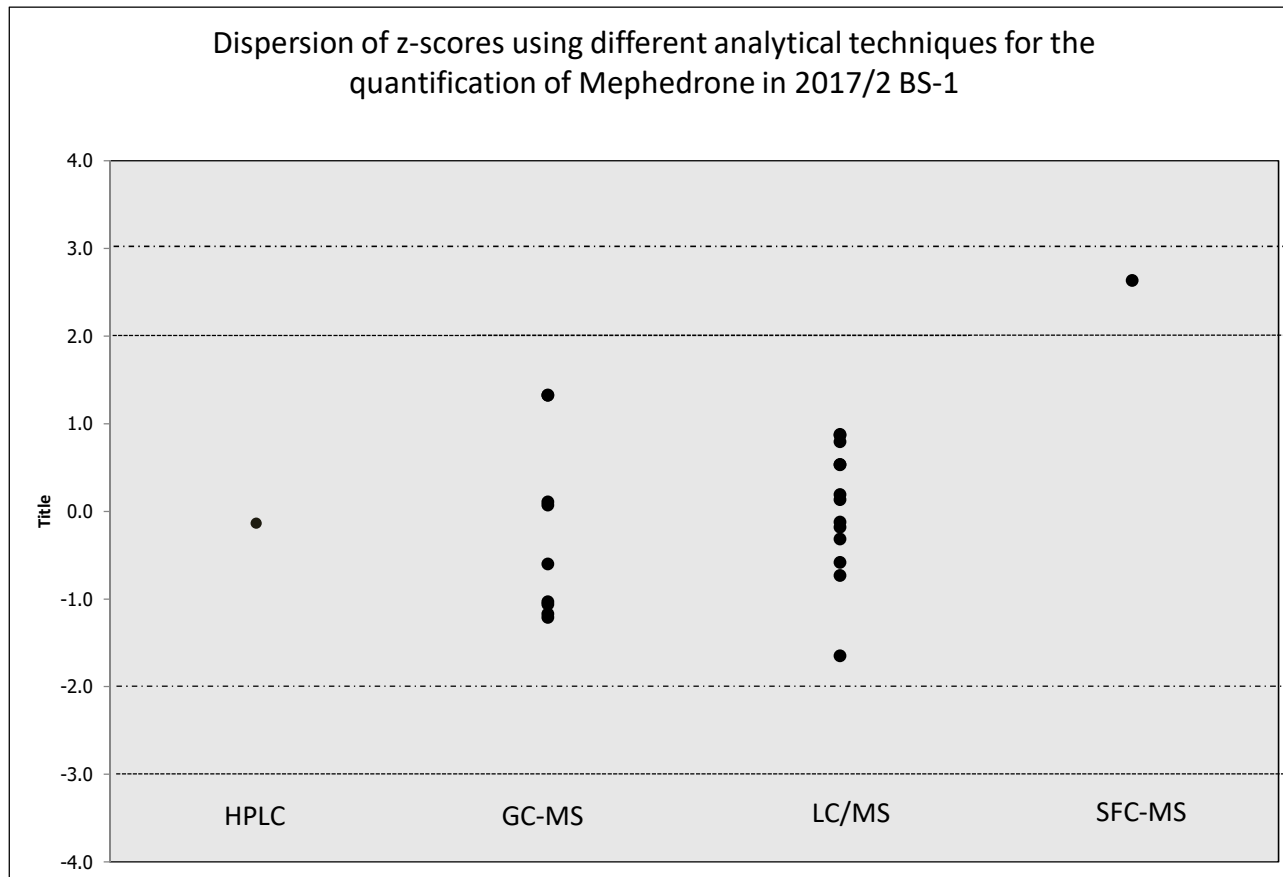
- |z| < 2 = satisfactory
- 2 ≤ |z| ≤ 3 = questionable
- |z| > 3 = unsatisfactory

According to the recommendations in ISO 13528:2005, an unsatisfactory z-score is considered to give an action signal and a questionable z-score is considered to give a warning signal. A single action signal or warning signal in two successive rounds shall be taken that an anomaly has occurred that requires investigation.

### Z-Score Report per Sample per Substance

**Round: 2017/2**

Substance: BS-1; Mephedrone





## Sample 2 Analysis

### Identified substances for Test Sample 2

| Code   | Identified Substances        |
|--------|------------------------------|
| 0RWBZT | MORPHINE                     |
| 1ZVY1V | Morphine                     |
| 25NT0J | morphine                     |
| 2HHN2K | morphine                     |
| 3FYFZF | morphine                     |
| 4Q733L | MORPHINE                     |
| 4X24EX | Morphine                     |
| 5VR6P5 | Morphine                     |
| 6EGBSR | MORPHINE                     |
| 6QN3UZ | Morphine                     |
| 7PVYUM | Morphine                     |
| 87FOG8 | Morphine                     |
| 8AXU8U | None                         |
| 8TMPMM | Morphine                     |
| 99LC9E | Morphine                     |
| 99S3IV | morphine                     |
| ABFSNT | morphine                     |
| ASSINS | MORPHINE AND BENZOILECGONINE |
| BKKBB1 | morphine                     |
| C8QSDC | Morphine                     |
| CDTVXT | Morphine                     |
| DDDFQ8 | Morphine                     |
| DFBF99 | morphine                     |
| DKDX3I | Morphine                     |
| DLGK3S | morphine                     |
| DPIDDC | morphine                     |
| E3PK1R | Morphine                     |
| ESUUIL | morphine                     |
| FJAJZW | morphine                     |
| FSQLDZ | Morphine and hydromorphone   |
| G7TTMY | morphine                     |
| GAPRQN | morphine                     |
| GCWMHX | Morphine                     |
| GRMJ5J | MORPHINE                     |
| HDDDQ7 | MOR                          |
| HFYH9H | Opiates                      |
| HI1IWC | morphine                     |
| HZIBM9 | Morphine                     |
| IBZOZI | Not detected                 |
| IEN8WG | Morphine                     |



| Code   | Identified Substances                                     |
|--------|---|
| JCL3AU | Morphine  |
| JEKY5F | morphine,codeine  |
| JZ6FPI | morphine  |
| K3NEVF | morphine  |
| KDK3O2 | Morphine  |
| KQLQQU | Morphine  |
| L5HODY | Morphine  |
| L9E9G9 | Morphine  |
| LLLJLL | Morphine  |
| MBMFTD | Morphine  |
| NPHYFU | morphine  |
| OH9O5O | Morphine  |
| OPGOYJ | oxazepam  |
| OPOU6J | Morphine  |
| OVZUQL | Morphine  |
| PDZQ2X | morphine  |
| PWZSS3 | morphine  |
| Q7YNHH | Morphine  |
| Q88I8V | MORPHINE  |
| QFXQJQ | Buprenorphine, morphine, tetrahydrocannabinol and cafeine |
| QQ9VQW | Morphine  |
| QQQHQQ | morphine  |
| RZC03Q | morfin, norhydrocodon, nicotine, teobromin                |
| S2PSS9 | Morphine  |
| SDHWUN | Morphine  |
| SI1NTS | MORPHINE  |
| SOSKS6 | Morphine  |
| SPNU7I | Morphine  |
| SR7RVR | morphine  |
| TAXVV1 | Morphine  |
| TSSGSG | Morphine  |
| TV5NIY | Morphine  |
| TZXXA9 | Morphine  |
| UKWRKO | MORPHINE  |
| UUAVAA | Morphine  |
| UZLYUO | 6-monoacetylmorphine, morphine and codeine                |
| VVZ4SC | morphine  |
| WE3FAF | Morphine  |
| WN9NYZ | Morphine  |
| WSZX4Q | Morphine (Total)  |
| XN7JCJ | Morphine  |
| XOMAKO | Morphine  |
| XPOAPR | Morphine  |
| XXFUX7 | Morphine  |



| Code  | Identified Substances |
|-------|-----------------------|
| ZQZJK | Morphine              |





Statement of findings for Test Sample 2

| Code   | Morphine (Total) |  |
|--------|------------------|--|
| 0RWBZT | +                |  |
| 0U9I7W | -                |  |
| 1ZVY1V | +                | This person consumed morphine.   |
| 25NT0J | +                | morphine   |
| 2HHN2K | +                |  |
| 2SLHZZ | -                |  |
| 3FYFZF | +                |  |
| 4Q733L | +                | MORPHINE DETECTED  |
| 4X24EX | +                | Morphine was found in 2017/2/BS-2  |
| 5FVKJS | ANP              | No common drugs were detected in sample 2017/2/BS/2.                                 |
| 5VR6P5 | +                | We found Morphine in BS-2 as a controlled substance                                  |
| 6EGBSR | +                |  |
| 6QN3UZ | +                | In the sample BS-2 2017/2 was detected morphine at the concentration of 772.8 ng/mL. |
| 7PVYUM | +                |  |
| 87FOG8 | +                | Detected opium alkaloid group (morphine) in urine                                    |
| 8AXU8U | ANP              | Analysis not performed   |
| 8TMPMM | +                | Findings confirm the prior ingestion of heroin/morphine by the individual            |
| 99LC9E | +                | In sample BS-2 the drug Morphine was found   |
| 99S3IV | +                | Positive to morphine (total morphine: 748 ng/mL).                                    |
| ABFSNT | +                | After chemical analysis performed the sample contents:<br>morphine                   |
| ASSINS | +                | THE SAMPLE BS-2 CONTAINS MORPHINE AND BENZOYLECGONINE                                |
| BKKBB1 | +                |  |
| C8QSDC | +                | The urine sample screened positive for the presence of morphine.                     |



| Code   | Morphine (Total) |  |
|--------|------------------|--|
| CDTVXT | +                | Morphine   |
| DDDFQ8 | ANP              | Screening by Immunoassay Method. It gives Morphine   |
| DFBF99 | +                | complete coincidence of retention time and basic ions with library data  |
| DKDX3I | +                |  |
| DLGK3S | +                | other identified compound: caffeine (GCMS)   |
| DPIDDC | +                | in the sample of discovered morphine in the amount of 800 ng/ml  |
| E3PK1R | +                | The urine was analysed and found to contain morphine.  |
| ESUUIL | +                | founded caffeine too   |
| FJAJZW | ANP              | Free morphine was measured   |
| FNNKWN | ANP              | Test sample, 2017/2/BS-2 was not found to contain controlled drugs therefore Negative for both Screening and Confirmatory tests.   |
| FSQLDZ | +                | BY LC-MS/MS 86.5483ng/ml of Morphine was detected in 2017/2 BS-2   |
| G7TTY  | +                | Analytical Adverse Finding for morphine with a concentration of 0,9 µg/ml (however, lower then the Decision Limit that should be applied to determine whether the result indicates an AAF).          |
| GAPRQN | +                | morphine was found in the sample BS-2 at the detection limit.  |
| GCWMHX | +                | The coincidence between the relative retention time and mass-fragmentograms from a reference standard analysed at the same conditions that the biological sample indicates the detection of Morphine |
| GJTUT1 | +                |  |
| GRMJ5J | +                | In sample BS 2 was found and confirmed the presence of MORPHINE  |
| HDDDQ7 | +                | morphine intake  |
| HFYH9H | -                | We found Codeine.  |
| HI1IWC | +                |  |
| HZIBM9 | +                | Consistent with use of morphine or heroin  |
| IBZOZI | ANP              | Drugs not detected according the results of gas chromatography/mass spectrometry analysis.   |
| IEN8WG | +                | In the sample was detected Morphine, this finding indicates that Morphine was consumed.  |



| Code   | Morphine (Total) |  |
|--------|------------------|--|
| JCL3AU | +                | The presence of morphine in urine indicates consumption of morphine itself or consumption of a parent drug such as heroin or codeine.  |
| JEKY5F | +                | two opiates  |
| JZ6FPI | +                | positive   |
| K3NEVF | +                | Discovered: morphine   |
| KDK3O2 | +                |  |
| KQLQQU | +                | -  |
| L5HODY | +                | Morphine detected.   |
| L9E9G9 | +                | Morphine was identified by GC/MS   |
| LLLJLL | +                | Sample is positive for Morphine  |
| MBMFTD | +                |  |
| NPHYFU | +                | drugs detected   |
| OC7RZC | +                |  |
| OH9O5O | +                | Morphine detected  |
| OPGOYJ | -                | after genral extraction liq-liq , screening and specific extraction and chromatographic method adapter.  |
| OPOU6J | +                |  |
| OVZUQL | +                |  |
| PDZQ2X | +                | use of morphine  |
| PWZSS3 | +                | Sample 2 contain morphine.   |
| Q7YNHH | +                |  |
| Q88I8V | +                |  |
| QFXQJQ | +                |  |
| QQ9VQW | +                | 1-Screening test (EIA). Positive for Screening test: Not present<br>GC/MS: Relation m/z, time retention (tR ) the reference material Morphine are equivalents to those sample 2017/2 /BS-2 |



| Code   | Morphine (Total) |   |
|--------|------------------|---|
| QQQHQQ | +                | In Urine sample n° 2, morphine was identified   |
| RZC03Q | +                | indicated in the direction as the purpose of the study of the substance - opiates (morphine, Nordihydrocodon) were found at the level of detection limit of the methods used.               |
| S2PSS9 | +                | Toxicological analysis revealed the presence of morphine  |
| SDHWUN | +                | Morphine detected in BS-2 sample  |
| SI1NTS | +                | THE SAMPLE WAS ANALYZED BY INMOASSAY IN architect c 400 obtaning a possitive result for opiates. A solid phase extraction was carried out identified by GC/MS                               |
| SOSKS6 | +                | Since morphine was detected- indicates use of morhpine  |
| SPNU7I | +                |   |
| SR7RVR | +                | Presence of morphine  |
| TAXVV1 | +                | The sample contains morphine.   |
| TSSGSG | +                |   |
| TV5NIY | +                | caffeine was also present   |
| TZXXA9 | +                | Morphine was found in BS-2  |
| UH2KUD | +                |   |
| UKWRKO | +                | BS-2 is positive for Morphine   |
| UUAVAA | +                | Morphine is a narcotic analgesic found in the opium poppy. It is Schedule II substance in the United States.  |
| UZLYUO | +                | Extraction of sample using two solvent systems for TLC analysis.  |
| VVZ4SC | +                |   |
| WE3FAF | +                |   |
| WN9NYZ | +                | Morphine use.   |
| WSZX4Q | +                | Morphine (Total) Detected > 0.5mg/L   |
| WWEE78 | +                |   |
| XN7JCJ | +                | Morphine is an opioid pain medication. An opioid is sometimes called a narcotic. Morphine is used to treat moderate to severe pain. Short-acting formulations are taken as needed for pain. |



| Code   | Morphine (Total) |  |
|--------|------------------|--|
| XOMAKO | +                | In the sample it as detected the present of Morphine.                |
| XPOAPR | +                | Morphine was identified in the sample.                               |
| XXFUX7 | +                | Urine sample contain 948.4 ng/ml of Morphine                         |
| Z3OOJL | -                | The sample 2017/2/BS-2 do not found to contain any controlled drugs. |
| ZQZJZK | +                | It was detected the presence of Morphine in the sample analysed.     |



**Identification methods for Test Sample 2**

**Legend:** S ... used for Screening I ... used for Identification SI ... used for both

| Code   | 100 | 110 | 120 | 141 | 150 | 160 | 161 | 170 | 171 | 180 | 230 | 231 | 210                                      |
|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| 0RWBZT |     |     |     |     |     |     |     |     |     |     | SI  | I   |  |
| 0U9I7W |     | S   |     |     |     |     |     | I   |     | SI  |     |     |  |
| 1ZVY1V |     | S   |     |     |     |     |     |     |     | I   |     | I   |  |
| 25NT0J |     |     | SI  |     |     |     |     |     |     | I   | I   |     |  |
| 2HHN2K |     | S   |     |     |     |     | I   |     |     | I   |     |     |  |
| 2SLHZZ |     |     |     |     |     |     |     |     |     | I   |     | SI  |  |
| 3FYFZF |     | S   |     |     |     |     |     |     |     | I   |     |     |  |
| 4Q733L |     | S   |     |     |     |     |     |     |     | I   |     |     |  |
| 4X24EX |     |     |     |     |     |     |     |     |     | S   |     | I   |  |
| 5FVKJS |     |     |     |     |     |     |     |     |     | SI  |     |     |  |
| 5VR6P5 |     | S   |     |     | I   |     |     |     |     | I   |     |     |  |
| 6EGBSR |     |     |     |     |     |     |     |     |     |     |     | I   | S IMMUNOCHROMATOGRAPHIC TEST             |
| 6QN3UZ |     | S   |     |     |     |     |     |     |     | I   |     | SI  |  |
| 7PVYUM |     |     |     |     |     |     |     |     |     | I   |     | I   |  |
| 87FOG8 |     |     |     |     |     |     |     |     |     | SI  |     |     |  |
| 8AXU8U |     |     |     |     |     |     |     |     |     | SI  |     |     |  |
| 8TMPMM |     | I   |     |     |     |     |     |     |     |     |     | SI  |  |
| 99LC9E |     |     |     |     |     |     |     |     |     | SI  |     | SI  |  |
| 99S3IV |     | S   |     |     |     |     |     |     |     | I   |     | SI  |  |
| ABFSNT |     | S   |     |     |     |     |     |     |     | I   |     |     |  |
| ASSINS |     | S   |     |     |     |     |     |     |     | I   |     |     |  |
| BKKBB1 |     | S   |     |     |     |     |     |     |     | I   |     |     |  |
| C8QSDC |     |     |     |     |     |     |     |     |     |     |     | SI  |  |
| CDTVXT |     |     |     |     |     |     |     |     |     | I   |     | I   | I Kinetic Interactions of Microparticles |
| DDDFQ8 |     | S   |     |     |     |     |     |     |     |     |     |     |  |
| DFBF99 |     | S   |     |     |     |     |     |     |     | I   |     |     |  |
| DKDX3I |     | S   |     |     |     |     | I   |     |     | SI  |     |     |  |
| DLGK3S |     |     |     |     |     |     | I   |     |     | I   |     | SI  |  |
| DPIDDC |     | S   |     |     |     |     |     |     |     | I   |     |     |  |
| E3PK1R |     | S   |     |     |     |     |     |     |     | I   |     |     |  |
| ESUUIL |     | S   |     |     |     |     |     |     |     | I   |     | I   |  |
| FNNKWN |     |     |     |     |     |     |     |     |     | I   |     |     | S DT KIT                                 |
| FSQLDZ |     | S   |     |     |     |     |     |     |     |     |     | I   |  |



| Code   | 100 | 110 | 120 | 141 | 150 | 160 | 161 | 170 | 171 | 180 | 230 | 231 | 210  |
|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| G7TTMY |     |     |     |     |     |     |     |     |     | SI  |     | SI  |  |
| GAPRQN |     | S   |     |     |     |     |     |     |     | SI  |     |     |  |
| GCWMHX |     |     |     |     |     |     |     |     |     | I   |     |     |  |
| GJTUT1 |     | S   |     |     |     | I   | I   |     |     | I   |     |     |  |
| GRMJ5J |     |     |     |     |     |     |     |     |     |     | SI  | I   |  |
| HDDDQ7 |     |     |     |     |     |     |     |     |     | SI  |     |     |  |
| HFYH9H |     |     |     |     | I   |     |     |     |     |     |     |     | SI Dipro Drug lab screen                   |
| HI1IWC |     |     |     |     | I   |     |     |     |     | I   |     |     |  |
| HZIBM9 |     | S   |     |     |     |     |     |     |     | I   |     | SI  |  |
| IBZOZI |     |     |     |     |     |     |     |     |     | I   |     |     |  |
| IEN8WG |     |     |     |     |     |     |     |     |     | I   |     |     | S Lateral Flow Immunoassay                 |
| JCL3AU |     |     |     |     |     |     |     |     |     | I   | S   |     | S lateral flow immunochromatographic assay |
| JEKY5F |     |     |     |     |     |     | I   |     |     | I   |     |     | S chromatographic immunoassay              |
| JZ6FPI |     |     | S   |     |     |     | SI  |     |     |     |     |     | I SFC-MS/MS                                |
| K3NEVF |     |     |     |     |     |     |     |     |     | SI  |     |     |  |
| KDK3O2 |     | S   |     |     |     |     |     |     |     | I   |     |     |  |
| KQLQQU |     |     |     |     |     |     |     |     |     | SI  |     |     |  |
| L5HODY |     | S   |     |     |     |     |     |     |     | I   |     |     |  |
| L9E9G9 |     | S   |     |     |     |     |     |     |     | I   |     |     |  |
| LLLJLL |     | S   |     |     |     |     |     |     |     | I   |     | I   | S LC-TOF                                   |
| MBMFTD |     | S   |     |     |     |     |     |     |     | I   |     | I   |  |
| NPHYFU |     |     |     |     |     |     |     |     |     | SI  |     |     |  |
| OC7RZC |     | S   |     |     |     |     |     |     |     | I   |     | I   |  |
| OH9O5O |     |     |     |     |     |     |     |     |     | I   |     |     |  |
| OPGOYJ |     | S   |     |     |     |     | I   |     |     | I   |     |     |  |
| OPOU6J |     | S   |     |     |     |     |     |     |     | I   | I   |     |  |
| OVZUQL | S   |     |     |     |     |     |     |     |     | I   |     |     |  |
| PDZQ2X |     |     |     |     |     |     |     |     |     | I   |     |     |  |
| PWZSS3 |     | S   |     |     | I   |     |     |     |     |     |     |     | I biočip                                   |
| Q7YNHH |     | S   |     |     |     |     |     |     |     | I   |     | I   |  |
| Q88I8V |     |     |     |     |     |     |     |     |     | I   |     |     | S TRIAGE 8-ALERE Sure Step                 |
| QFXQJQ |     | S   |     |     |     |     | I   |     |     | I   |     |     |  |
| QQ9VQW |     | S   |     |     |     |     |     |     |     | I   |     |     |  |
| QQQHQQ |     | S   |     |     |     |     |     |     |     |     |     | I   |  |
| RZC03Q |     | S   |     |     |     |     |     |     |     | I   |     |     |  |
| S2PSS9 |     | S   |     |     |     |     |     |     |     | SI  |     | I   |  |
| SDHWUN |     |     |     |     |     |     |     |     |     | I   |     |     |  |



| Code   | 100 | 110 | 120 | 141 | 150 | 160 | 161 | 170 | 171 | 180 | 230 | 231 | 210                                    |
|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| SI1NTS |     | S   |     |     |     |     |     |     |     | I   |     | I   |  |
| SOSKS6 |     | S   |     |     |     |     |     |     |     | I   |     | I   |  |
| SPNU7I |     | S   |     |     |     |     |     |     |     |     |     |     | I LC/QTOF                              |
| SR7RVR |     | S   |     |     |     |     |     |     |     | S   |     | SI  |  |
| TAXVV1 |     |     |     |     |     |     |     |     |     | SI  |     | I   | S Multi-Drug Screen Test Panel         |
| TSSGSG |     |     |     |     |     |     |     |     |     | I   |     |     |  |
| TV5NIY |     |     |     |     |     |     |     |     |     | I   |     |     | S one step immunochromatographic assay |
| TZXXA9 |     |     |     |     |     |     |     |     |     | S   |     | I   |  |
| UH2KUD |     |     |     |     |     |     |     |     |     | I   |     |     |  |
| UKWRKO |     | S   |     |     | I   |     |     |     |     | I   |     | I   |  |
| UUAVAA |     |     |     |     |     |     |     |     |     |     |     |     | I LC-QTOF                              |
| UZLYUO |     |     |     |     | SI  | I   |     |     | I   |     |     |     | S TEST STRIPS                          |
| VVZ4SC |     | S   |     |     |     |     |     |     |     | I   |     | I   |  |
| WE3FAF |     | S   |     |     |     |     |     |     |     |     | I   | I   |  |
| WN9NYZ |     |     |     |     |     |     |     |     |     | I   | I   | S   |  |
| WSZX4Q |     | S   |     |     |     |     |     |     |     | I   |     | I   |  |
| WWEE78 | S   |     |     |     |     |     |     |     |     | I   |     | I   |  |
| XN7JCJ |     | S   |     |     |     |     |     |     |     | I   |     | I   |  |
| XOMAKO |     | S   |     |     |     |     |     |     |     | SI  |     |     |  |
| XPOAPR |     |     |     | S   | SI  |     |     |     |     | I   |     |     |  |
| XXFUX7 |     | SI  |     |     |     |     |     |     |     | SI  |     |     |  |
| Z3OOJL |     |     |     |     |     |     |     |     |     | SI  |     |     |  |
| ZQZJZK |     | S   |     |     |     |     |     |     |     | I   |     |     |  |



## RESPONSE SUMMARY FOR TEST SAMPLE 2

**Participants: 94**

The response summary of all 94 participating laboratories for the identification of BS-2, frequency of use of screening and identification techniques and false positives and negatives:

### Identification of Test Sample-2:

| Substance Name | Number of laboratories correctly identifying: |
|----------------|---|
| Morphine       | 83  |

### False positives for Test Sample-2:

| Round Code: | Substance reported: | Tech Code: |
|-------------|---------------------|------------|
| ASSINS      | Benzoyllecgonine    | 231        |
| FSQLDZ      | Hydromorphine       | 231        |
| JEKY5F      | Codeine             | 161/180    |
| QFXQJQ      | Buprenorphine, THC  | 161/180    |
| RZC03Q      | Norhydrocodone      | 180        |
| UZLYUO      | 6-MAM, codeine      | 150/171    |
| HFYH9H      | Codeine             | 150        |
| OPGOYJ      | Oxazepam            | 161        |

### False negatives for Test Sample-2 (techniques(s) used for ANP):

| Round Code: | Answer Code: | Tech Code: |
|-------------|--------------|------------|
| 0U9I7W      | -            | 170/180    |
| 2SLHZZ      | -            | 180/231    |
| HFYH9H      | -            | 150        |
| OPGOYJ      | -            | 161        |
| Z3OOJL      | -            | 180        |

The following six laboratories did not carry out analysis for morphine in test sample 2. 5FVKJS, 6AXU8U, DDDFQ8, FJAJZW, FNNKWN, JBZOZI

### Frequency of use of screening, identification and quantification techniques:

| <b>Response Summary</b> |     |      |     |     |     |     |     |     |     |      |      |     |      |
|-------------------------|-----|------|-----|-----|-----|-----|-----|-----|-----|------|------|-----|------|
| <b>Participants 94</b>  |     |      |     |     |     |     |     |     |     |      |      |     |      |
| Technique               | 100 | 110  | 120 | 141 | 150 | 160 | 161 | 170 | 171 | 180  | 210  | 230 | 231  |
| Screening (No.)         | 2   | 48   | 2   | 1   | 2   | 0   | 1   | 0   | 0   | 20   | 11   | 3   | 11   |
| (%)                     | 2.1 | 51.1 | 2.1 | 1.1 | 2.1 | 0.0 | 1.1 | 0.0 | 0.0 | 21.3 | 11.7 | 3.2 | 11.7 |
| Identification (No.)    | 0   | 2    | 1   | 0   | 7   | 2   | 8   | 1   | 1   | 75   | 6    | 6   | 35   |
| (%)                     | 0.0 | 2.1  | 1.1 | 0.0 | 7.4 | 2.1 | 8.5 | 1.1 | 1.1 | 79.8 | 6.4  | 6.4 | 37.2 |
| Quantification (No.)    | 0   | 1    | 0   | 0   | 0   | 0   | 1   | 0   | 0   | 26   | 2    | 1   | 20   |
| (%)                     | 0.0 | 2.3  | 0.0 | 0.0 | 0.0 | 0.0 | 2.3 | 0.0 | 0.0 | 60.5 | 4.7  | 2.3 | 46.5 |

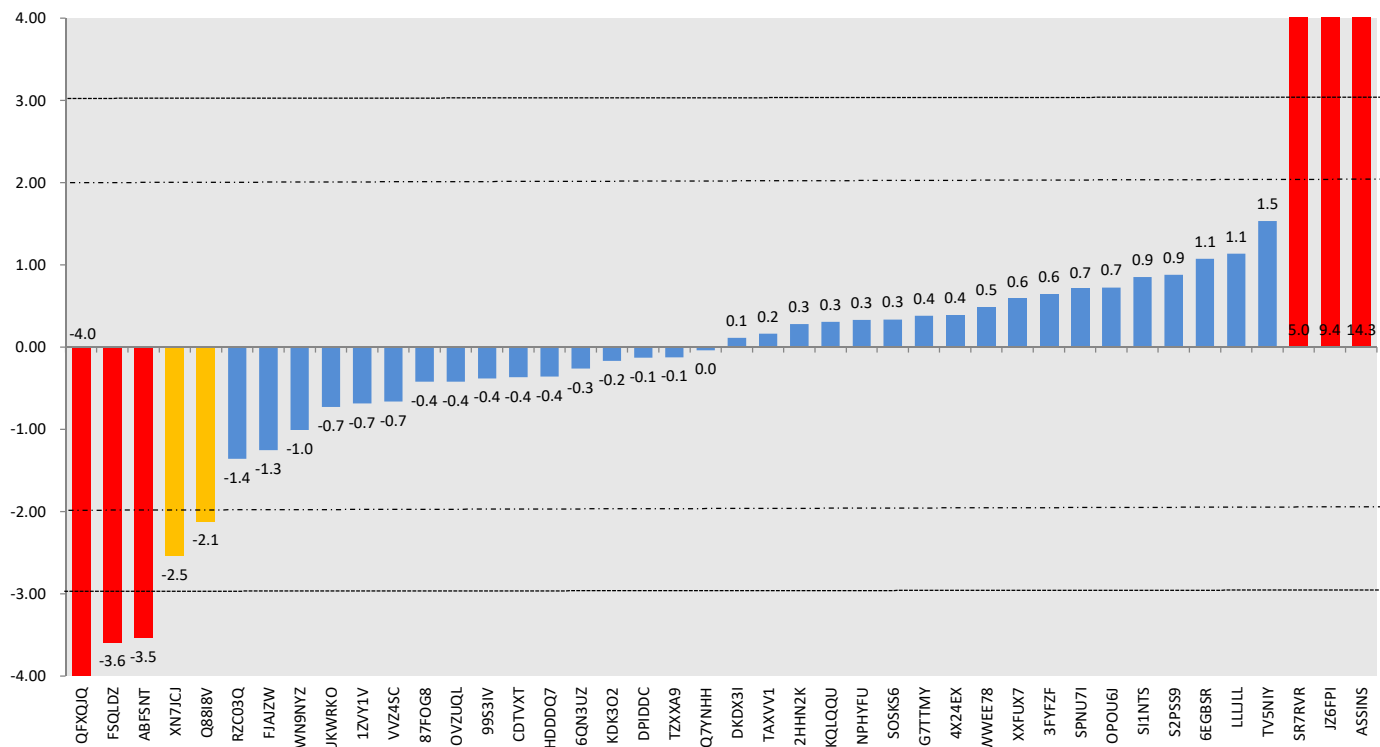
**Z-Scores for Test Sample 2**

| Code   | Morphine              |                               |         |
|--------|-----------------------|-------------------------------|---------|
|        | Concentration (ng/ml) | Deviation from robust average | z-score |
| QFXQJQ | 1.4                   | -824.6                        | -4.0    |
| FSQLDZ | 86.6                  | -739.5                        | -3.6    |
| ABFSNT | 97                    | -729                          | -3.5    |
| XN7JCJ | 302.1                 | -523.9                        | -2.5    |
| Q88I8V | 390                   | -436                          | -2.1    |
| RZC03Q | 546.3                 | -279.7                        | -1.4    |
| FJAJZW | 568                   | -258                          | -1.3    |
| WN9NYZ | 619                   | -207                          | -1.0    |
| UKWRKO | 676.5                 | -149.5                        | -0.7    |
| 1ZVY1V | 685                   | -141                          | -0.7    |
| VVZ4SC | 690                   | -136                          | -0.7    |
| 87FOG8 | 740                   | -86                           | -0.4    |
| OVZUQL | 740                   | -86                           | -0.4    |
| 99S3IV | 748                   | -78                           | -0.4    |
| CDTVXT | 751                   | -75                           | -0.4    |
| HDDDQ7 | 753                   | -73                           | -0.4    |
| 6QN3UZ | 772.8                 | -53.2                         | -0.3    |
| KDK3O2 | 792                   | -34                           | -0.2    |
| DPIDDC | 800                   | -26                           | -0.1    |
| TZXA9  | 801                   | -25                           | -0.1    |
| Q7YNHH | 819                   | -7                            | 0.0     |
| DKDX3I | 850                   | 24                            | 0.1     |
| TAXV1  | 860                   | 34                            | 0.2     |
| 2HHN2K | 885                   | 59                            | 0.3     |
| KQLQQU | 890                   | 64                            | 0.3     |
| NPHYFU | 895                   | 69                            | 0.3     |
| SOSKS6 | 896                   | 70                            | 0.3     |
| G7TTMY | 905                   | 79                            | 0.4     |
| 4X24EX | 906                   | 80                            | 0.4     |
| WWEE78 | 927                   | 101                           | 0.5     |
| XXFUX7 | 948.4                 | 122.4                         | 0.6     |
| 3FYFZF | 960                   | 134                           | 0.6     |
| SPNU7I | 975                   | 149                           | 0.7     |
| OPOU6J | 976                   | 150                           | 0.7     |
| SI1NTS | 1002.3                | 176.3                         | 0.9     |
| S2PSS9 | 1008                  | 182                           | 0.9     |
| 6EGBSR | 1048                  | 222                           | 1.1     |
| LLLJLL | 1061                  | 235                           | 1.1     |
| TV5NIY | 1143                  | 317                           | 1.5     |
| SR7RVR | 1860                  | 1034                          | 5.0     |
| JZ6FPI | 2758                  | 1932                          | 9.4     |
| ASSINS | 3772.8                | 2946.8                        | 14.3    |

### Z-Score Report per Sample per Substance

Round: **2017/2**  
Substance: BS-2; Morphine

Robust average = 826.4 ng/ml  
UNODC value = 860 ng/ml



z-scores can be interpreted by participants in line with ISO 13528:2005, section 7.4.2 and ISO/IEC guide43-1:1997(E) as follows:

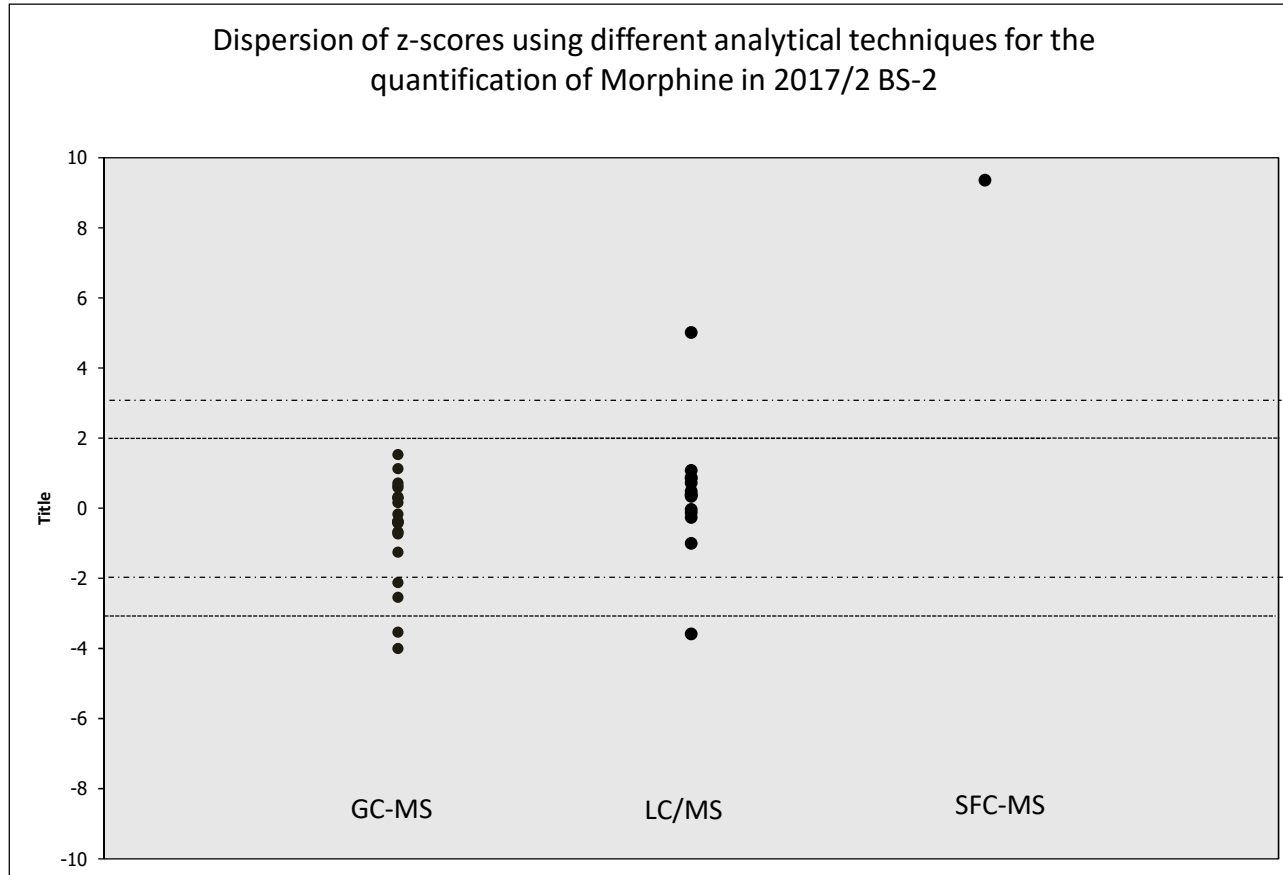
- |z| < 2 = satisfactory
- 2 ≤ |z| ≤ 3 = questionable
- |z| > 3 = unsatisfactory

According to the recommendations in ISO 13528:2005, an unsatisfactory z-score is considered to give an action signal and a questionable z-score is considered to give a warning signal. A single action signal or warning signal in two successive rounds shall be taken that an anomaly has occurred that requires investigation.

### Z-Score Report per Sample per Substance

Round: 2017/2

Substance: BS-2; Morphine





## Sample 3 Analysis

### Identified substances for Test Sample 3

| Code   | Identified Substances                     |
|--------|---|
| 4Q733L | NO DETECTED                               |
| 4X24EX | No any drugs found                        |
| 5VR6P5 | None                                      |
| 6QN3UZ | None                                      |
| 87FOG8 | not detected                              |
| 8AXU8U | None                                      |
| 99LC9E | None                                      |
| ASSINS | BLANK                                     |
| CDTVXT | (not applicable)                          |
| DDDFQ8 | no  |
| ESUUIL | no drugs found                            |
| FSQLDZ | Temazepam                                 |
| HDDDQ7 | GHB and GBL                               |
| HFYH9H | none                                      |
| HI1IWC | no  |
| IBZOZI | Not detected                              |
| JEKY5F | 11-nor- $\Delta^9$ -THC-9 carboxylic acid |
| K3NEVF | no  |
| KQLQQU | -   |
| NPHYFU | blank                                     |
| PWZSS3 | -   |
| QFXQJQ | Paracetamol and cafeine                   |
| QQ9VQW | ANP                                       |
| TZXXA9 | No any drugs found                        |
| UZLYUO | 4 Broo-2,5-dimethoxyphenethylamine        |
| VVZ4SC | sample contain only paracetamol           |
| WSZX4Q | Paracetamol, Quinine                      |
| XPOAPR | -   |



## Statement of findings for Test Sample 3

| Code   | [blank sample]  |
|--------|---|
| 0RWBZT |   |
| 0U9I7W |   |
| 1ZVY1V | This person did not consume drugs or controlled substances from the list.   |
| 25NT0J |   |
| 2HHN2K |   |
| 2SLHZZ |   |
| 3FYFZF |   |
| 4Q733L |   |
| 4X24EX | No any drugs were found in 2017/2/BS-3  |
| 5FVKJS | No common drugs were detected in sample 2017/2/BS/3.  |
| 5VR6P5 | No controlled drugs detected in this sample   |
| 6EGBSR |   |
| 6QN3UZ | In the sample BS-3 2017/2 none of the substances tested were detected.  |
| 7PVYUM |   |
| 87FOG8 | Not detected opiates, synthetic and herbal cannabinoids phenylalkylamines (amphetamine and methamphetamine), synthetic cathinone, barbiturates, benzodiazepmny, methadone, cocaine. |
| 8AXU8U | Sample 2017/2/BS-3 found not to contain any drugs   |
| 8TMPMM |   |
| 99LC9E | In sample BS-3 no drugs or metabolites were found   |
| 99S3IV |   |
| ABFSNT |   |
| ASSINS | BLANK   |
| BKKBB1 |   |
| C8QSDC | No targeted drug was detected in the urine screen.  |
| CDTVXT | No controlled drug was detected.  |
| DDDFQ8 |   |
| DFBF99 | blank   |
| DKDX3I |   |
| DLGK3S |   |
| DPIDDC | in the sample target of drugs not detected  |
| E3PK1R |   |
| ESUUIL | Founded paracetamol and caffeine  |
| FJAJZW |   |
| FNNKWN | Test sample, 2017/2/BS-3 was not found to contain controlled drugs therefore Negative for both Screening and Confirmatory tests.  |
| FSQLDZ | BY LC-MS/MS 45.7784ng/ml of Temazepam was detected  |
| G7TTMY |   |
| GAPRQN |   |



| Code   | [blank sample]  |
|--------|---|
| GCWMHX | The not coincidence between the relative retention time and mass-fragmentograms from a reference standard analysed at the same conditions that the biological sample indicates the not detection of studied analytes. |
| GJTUT1 |   |
| GRMJ5J | In sample BS 3 was no found the presence of control drugs.  |
| HDDDQ7 | GBI and maybe GHb intake  |
| HFYH9H | We did not find any drugs. We found only caffen and quinine.  |
| HI1IWC |   |
| HZIBM9 |   |
| IBZOZI | Drugs not detected according the results of gas chromatography/mass spectrometry analysis.  |
| IEN8WG |   |
| JCL3AU |   |
| JEKY5F | cannabinoids  |
| JZ6FPI | negative  |
| K3NEVF |   |
| KDK3O2 |   |
| KQLQQU | -   |
| L5HODY | Common drugs not detected.  |
| L9E9G9 |   |
| LLLJLL | Sample contains no substances from ICE menu   |
| MBMFTD |   |
| NPHYFU | not detected  |
| OC7RZC |   |
| OH9O5O | No drugs detected   |
| OPGOYJ |   |
| OPOU6J |   |
| OVZUQL |   |
| PDZQ2X |   |
| PWZSS3 | Sample 3 negative.  |
| Q7YNHH |   |
| Q88I8V |   |
| QFXQJQ |   |
| QQ9VQW | Screening test: Not present<br>GC/M: Not to be present.   |
| QQQHQQ | In Urine sample nº 3, no controled substance was identified   |
| RZC03Q | indicated in the direction as the purpose of the study of the substance are not detected at the limit of detection of the methods used.   |
| S2PSS9 | Toxicological analysis yielded negative result  |
| SDHWUN | No common drugs detected in BS-3 sample   |
| SI1NTS |   |
| SOSKS6 |   |



| Code   | [blank sample]  |
|--------|---|
| SPNU7I |   |
| SR7RVR |   |
| TAXVV1 |   |
| TSSGSG |   |
| TV5NIY | caffeine was also present   |
| TZXXA9 | No any drugs were found in BS-3   |
| UH2KUD |   |
| UKWRKO |   |
| UUAVAA |   |
| UZLYUO | Extraction of sample using two solvent systems for TLC analysis.                        |
| VVZ4SC |   |
| WE3FAF |   |
| WN9NYZ |   |
| WSZX4Q | Paracetamol Detected<br>Quinine Detected  |
| WWEE78 |   |
| XN7JCJ |   |
| XOMAKO |   |
| XPOAPR | N/A   |
| XXFUX7 | Analysed drugs are not detected   |
| Z3OOJL | The sample 2017/2/BS-3 do not found to contain any controlled drugs.                    |
| ZQZJZK | The substances that were tested for weren't found to be present in the sample analysed. |





**Identification methods for Test Sample 3**

**Legend:** S ... used for Screening I ... used for Identification SI ... used for both

| Code   | 100 | 110 | 120 | 141 | 150 | 160 | 161 | 170 | 171 | 180 | 230 | 231 | 210                                      |
|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| 0RWBZT |     |     |     |     |     |     |     |     |     |     | SI  | I   |  |
| 0U9I7W |     | S   |     |     |     |     |     | I   |     | SI  |     |     |  |
| 1ZVY1V |     | S   |     |     |     |     |     |     |     | I   |     | I   |  |
| 25NT0J |     |     | SI  |     |     |     |     |     |     | I   | I   |     |  |
| 2HHN2K |     | S   |     |     |     |     | I   |     |     | I   |     |     |  |
| 2SLHZZ |     |     |     |     |     |     |     |     |     | I   |     | SI  |  |
| 3FYFZF |     | S   |     |     |     |     |     |     |     | I   |     |     |  |
| 4Q733L |     | S   |     |     |     |     |     |     |     | I   |     |     |  |
| 4X24EX |     |     |     |     |     |     |     |     |     | S   |     | I   |  |
| 5FVKJS |     |     |     |     |     |     |     |     |     | SI  |     |     |  |
| 5VR6P5 |     | S   |     |     | I   |     |     |     |     | I   |     |     |  |
| 6EGBSR |     |     |     |     |     |     |     |     |     |     |     | I   | S IMMUNOCHROMATOGRAPHIC TEST             |
| 6QN3UZ |     | S   |     |     |     |     |     |     |     | I   |     | SI  |  |
| 7PVYUM |     |     |     |     |     |     |     |     |     | I   |     | I   |  |
| 87FOG8 |     |     |     |     |     |     |     |     |     | SI  |     |     |  |
| 8AXU8U |     |     |     |     |     |     |     |     |     | SI  |     |     |  |
| 8TMPMM |     | I   |     |     |     |     |     |     |     |     |     | SI  |  |
| 99LC9E |     |     |     |     |     |     |     |     |     | SI  |     | SI  |  |
| 99S3IV |     | S   |     |     |     |     |     |     |     | I   |     | SI  |  |
| ABFSNT |     | S   |     |     |     |     |     |     |     | I   |     |     |  |
| ASSINS |     | S   |     |     |     |     |     |     |     | I   |     |     |  |
| BKKBB1 |     | S   |     |     |     |     |     |     |     | I   |     |     |  |
| C8QSDC |     |     |     |     |     |     |     |     |     |     |     | SI  |  |
| CDTVXT |     |     |     |     |     |     |     |     |     | I   |     | I   | I Kinetic Interactions of Microparticles |
| DDDFQ8 |     | S   |     |     |     |     |     |     |     |     |     |     |  |
| DFBF99 |     | S   |     |     |     |     |     |     |     | I   |     |     |  |
| DKDX3I |     | S   |     |     |     |     | I   |     |     | SI  |     |     |  |
| DLGK3S |     |     |     |     |     |     | I   |     |     | I   |     | SI  |  |
| DPIDDC |     | S   |     |     |     |     |     |     |     | I   |     |     |  |
| E3PK1R |     | S   |     |     |     |     |     |     |     | I   |     |     |  |
| ESUUIL |     | S   |     |     |     |     |     |     |     | I   |     | I   |  |
| FNNKWN |     |     |     |     |     |     |     |     |     | I   |     |     | S DT KIT                                 |
| FSQLDZ |     | S   |     |     |     |     |     |     |     |     |     | I   |  |



| Code   | 100 | 110 | 120 | 141 | 150 | 160 | 161 | 170 | 171 | 180 | 230 | 231 | 210  |
|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| G7TTMY |     |     |     |     |     |     |     |     |     | SI  |     | SI  |  |
| GAPRQN |     | S   |     |     |     |     |     |     |     | SI  |     |     |  |
| GCWMHX |     |     |     |     |     |     |     |     |     | I   |     |     |  |
| GJTUT1 |     | S   |     |     |     | I   | I   |     |     | I   |     |     |  |
| GRMJ5J |     |     |     |     |     |     |     |     |     |     | SI  | I   |  |
| HDDDQ7 |     |     |     |     |     |     |     |     |     | SI  |     |     |  |
| HFYH9H |     |     |     |     | I   |     |     |     |     |     |     |     | SI Dipro Drug lab screen                   |
| HI1IWC |     |     |     |     | I   |     |     |     |     | I   |     |     |  |
| HZIBM9 |     | S   |     |     |     |     |     |     |     | I   |     | SI  |  |
| IBZOZI |     |     |     |     |     |     |     |     |     | I   |     |     |  |
| IEN8WG |     |     |     |     |     |     |     |     |     | I   |     |     | S Lateral Flow Immunoassay                 |
| JCL3AU |     |     |     |     |     |     |     |     |     | I   | S   |     | S lateral flow immunochromatographic assay |
| JEKY5F |     |     |     |     |     |     | I   |     |     | I   |     |     | S chromatographic immunoassay              |
| JZ6FPI |     |     | S   |     |     |     | SI  |     |     |     |     |     | I SFC-MS/MS                                |
| K3NEVF |     |     |     |     |     |     |     |     |     | SI  |     |     |  |
| KDK3O2 |     | S   |     |     |     |     |     |     |     | I   |     |     |  |
| KQLQQU |     |     |     |     |     |     |     |     |     | SI  |     |     |  |
| L5HODY |     | S   |     |     |     |     |     |     |     | I   |     |     |  |
| L9E9G9 |     | S   |     |     |     |     |     |     |     | I   |     |     |  |
| LLLJLL |     | S   |     |     |     |     |     |     |     | I   |     | I   | S LC-TOF                                   |
| MBMFTD |     | S   |     |     |     |     |     |     |     | I   |     | I   |  |
| NPHYFU |     |     |     |     |     |     |     |     |     | SI  |     |     |  |
| OC7RZC |     | S   |     |     |     |     |     |     |     | I   |     | I   |  |
| OH9O5O |     |     |     |     |     |     |     |     |     | I   |     |     |  |
| OPGOYJ |     | S   |     |     |     |     | I   |     |     | I   |     |     |  |
| OPOU6J |     | S   |     |     |     |     |     |     |     | I   | I   |     |  |
| OVZUQL | S   |     |     |     |     |     |     |     |     | I   |     |     |  |
| PDZQ2X |     |     |     |     |     |     |     |     |     | I   |     |     |  |
| PWZSS3 |     | S   |     |     | I   |     |     |     |     |     |     |     | I biočip                                   |
| Q7YNHH |     | S   |     |     |     |     |     |     |     | I   |     | I   |  |
| Q88I8V |     |     |     |     |     |     |     |     |     | I   |     |     | S TRIAGE 8-ALERE Sure Step                 |
| QFXQJQ |     | S   |     |     |     |     | I   |     |     | I   |     |     |  |
| QQ9VQW |     | S   |     |     |     |     |     |     |     | I   |     |     |  |
| QQQHQQ |     | S   |     |     |     |     |     |     |     |     |     | I   |  |
| RZC03Q |     | S   |     |     |     |     |     |     |     | I   |     |     |  |
| S2PSS9 |     | S   |     |     |     |     |     |     |     | SI  |     | I   |  |
| SDHWUN |     |     |     |     |     |     |     |     |     | I   |     |     |  |



| Code   | 100 | 110 | 120 | 141 | 150 | 160 | 161 | 170 | 171 | 180 | 230 | 231 | 210                                    |
|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| SI1NTS |     | S   |     |     |     |     |     |     |     | I   |     | I   |  |
| SOSKS6 |     | S   |     |     |     |     |     |     |     | I   |     | I   |  |
| SPNU7I |     | S   |     |     |     |     |     |     |     |     |     |     | I LC/QTOF                              |
| SR7RVR |     | S   |     |     |     |     |     |     |     | S   |     | SI  |  |
| TAXVV1 |     |     |     |     |     |     |     |     |     | SI  |     | I   | S Multi-Drug Screen Test Panel         |
| TSSGSG |     |     |     |     |     |     |     |     |     | I   |     |     |  |
| TV5NIY |     |     |     |     |     |     |     |     |     | I   |     |     | S one step immunochromatographic assay |
| TZXXA9 |     |     |     |     |     |     |     |     |     | S   |     | I   |  |
| UH2KUD |     |     |     |     |     |     |     |     |     | I   |     |     |  |
| UKWRKO |     | S   |     |     | I   |     |     |     |     | I   |     | I   |  |
| UUAVAA |     |     |     |     |     |     |     |     |     |     |     |     | I LC-QTOF                              |
| UZLYUO |     |     |     |     | SI  | I   |     |     | I   |     |     |     | S TEST STRIPS                          |
| VVZ4SC |     | S   |     |     |     |     |     |     |     | I   |     | I   |  |
| WE3FAF |     | S   |     |     |     |     |     |     |     |     | I   | I   |  |
| WN9NYZ |     |     |     |     |     |     |     |     |     | I   | I   | S   |  |
| WSZX4Q |     | S   |     |     |     |     |     |     |     | I   |     | I   |  |
| WWEE78 | S   |     |     |     |     |     |     |     |     | I   |     | I   |  |
| XN7JCJ |     | S   |     |     |     |     |     |     |     | I   |     | I   |  |
| XOMAKO |     | S   |     |     |     |     |     |     |     | SI  |     |     |  |
| XPOAPR |     |     |     | S   | SI  |     |     |     |     | I   |     |     |  |
| XXFUX7 |     | SI  |     |     |     |     |     |     |     | SI  |     |     |  |
| Z3OOJL |     |     |     |     |     |     |     |     |     | SI  |     |     |  |
| ZQZJZK |     | S   |     |     |     |     |     |     |     | I   |     |     |  |

**RESPONSE SUMMARY FOR TEST SAMPLE 3**
**Participants: 94**

The response summary of all 94 participating laboratories for the identification of BS-3, frequency of use of screening and identification techniques and false positives and negatives:

**Identification of Test Sample-3:**

| Substance Name | Number of laboratories correctly identifying: |
|----------------|---|
| Blank          | 90  |

**False positives for Test Sample-3:**

| Round Code: | Substance reported:                      | Tech Code: |
|-------------|--|------------|
| FSQLDZ      | Temazepam                                | 231        |
| HDDDQ7      | GHB + GBL                                | 180        |
| JEKY5F      | 11-nor- $\Delta$ 9-THC-9-carboxylic acid | 161/180    |
| UZLYUO      | 2C-B                                     | 150/171    |

**False negatives for Test Sample-3 (techniques(s) used for ANP):**

| Round Code: | Answer code | Tech Code: |
|-------------|-------------|------------|
| FSQLDZ      | -           | 231        |
| HDDDQ7      | -           | 180        |
| JEKY5F      | -           | 161/180    |
| UZLYUO      | -           | 150/171    |

**Frequency of use of screening, identification and quantification techniques:**

| <b>Response Summary</b> |            |            |            |            |            |            |            |            |            |            |            |            |            |
|-------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| <b>Participants 94</b>  |            |            |            |            |            |            |            |            |            |            |            |            |            |
| <b>Technique</b>        | <b>100</b> | <b>110</b> | <b>120</b> | <b>141</b> | <b>150</b> | <b>160</b> | <b>161</b> | <b>170</b> | <b>171</b> | <b>180</b> | <b>210</b> | <b>230</b> | <b>231</b> |
| Screening (No.)         | 2          | 48         | 2          | 1          | 2          | 0          | 1          | 0          | 0          | 20         | 11         | 3          | 11         |
| (%)                     | 2.1        | 51.1       | 2.1        | 1.1        | 2.1        | 0.0        | 1.1        | 0.0        | 0.0        | 21.3       | 11.7       | 3.2        | 11.7       |
| Identification (No.)    | 0          | 2          | 1          | 0          | 7          | 2          | 8          | 1          | 1          | 75         | 6          | 6          | 35         |
| (%)                     | 0.0        | 2.1        | 1.1        | 0.0        | 7.4        | 2.1        | 8.5        | 1.1        | 1.1        | 79.8       | 6.4        | 6.4        | 37.2       |
| Quantification (No.)    | 0          | 1          | 0          | 0          | 0          | 0          | 1          | 0          | 0          | 26         | 2          | 1          | 20         |
| (%)                     | 0.0        | 2.3        | 0.0        | 0.0        | 0.0        | 0.0        | 2.3        | 0.0        | 0.0        | 60.5       | 4.7        | 2.3        | 46.5       |

## Sample 4 Analysis

### Identified substances for Test Sample 4

| Code   | Identified Substances    |
|--------|--------------------------|
| 0RWBZT | KETAMINE, NORKETAMINE    |
| 0U9I7W | ketamine and norketamine |
| 1ZVY1V | Ketamine, norketamine    |
| 2HHN2K | ketamine                 |
| 2SLHZZ | Ketamine and norketamine |
| 4Q733L | KETAMINE, NORKETAMINE    |
| 4X24EX | Ketamine, norketamine    |
| 5FVKJS | Ketamine and Norketamine |
| 5VR6P5 | None                     |
| 6EGBSR | KETAMINE-NORKETAMINE     |
| 6QN3UZ | Ketamine and Norketamine |
| 7PVYUM | Ketamine and Norketamine |
| 87FOG8 | Ketamine, norketamin     |
| 8AXU8U | Norketamine and ketamine |
| 8TMPMM | Ketamine                 |
| 99LC9E | Norketamine and Ketamine |
| 99S3IV | ketamine and norketamine |
| ABFSNT | ketamine                 |
| ASSINS | KETAMINE AND NORKETAMINE |
| C8QSDC | Ketamine                 |
| CDTVXT | Norketamine, Ketamine    |
| DDDFQ8 | no                       |
| DFBF99 | ketamine, norketamine    |
| DKDX3I | Ketamine, Norketamine    |
| DLGK3S | ketamine                 |
| DPIDDC | ketamine                 |
| ESUUIL | ketamine                 |
| FJAJZW | ketamine                 |
| G7TTMY | Ketamine                 |
| GAPRQN | ketamine, norketamine    |
| GCWMHX | Ketamine, Norketamine    |
| GRMJ5J | KETAMINE and NORKETAMINE |
| HDDDQ7 | Ketamine                 |
| HFYH9H | Others drugs             |
| HI1IWC | ketamine, norketamine    |
| HZIBM9 | Ketamine                 |
| IBZOZI | Ketamine and Norketamine |
| IEN8WG | Ketamine Norketamine     |
| JCL3AU | Ketamine, norketamine    |
| JZ6FPI | ketamine, norketamine    |



| Code   | Identified Substances                            |
|--------|--|
| K3NEVF | ketamine,norketamine                             |
| KDK3O2 | Ketamine and Nor-ketamine                        |
| KQLQQU | Norketamine,Ketamine                             |
| L5HODY | Ketamine and norketamine                         |
| L9E9G9 | Ketamine, Norketamine                            |
| LLLJLL | Ketamine, Norketamine                            |
| MBMFTD | Ketamine, Norketamine                            |
| NPHYFU | ketamine,norketamine                             |
| OH9O5O | Ketamine and norketamine                         |
| OPGOYJ | ketamine-Norketamine                             |
| OPOU6J | Ketamine, Norketamine                            |
| OVZUQL | Ketamine,Norketamine                             |
| PDZQ2X | ketamine, norketamine                            |
| PWZSS3 | ketamine,norketamine                             |
| Q7YNHH | Ketamine, Norketamine                            |
| Q88I8V | KETAMINE   |
| QFXQJQ | Buprenorphine, ketamine, norketamine and cafeine |
| QQ9VQW | Ketamine, Norketamine                            |
| QQQHQQ | Ketamine and norketamine                         |
| RZC03Q | ketamin, desaminonorketamin, norketamin          |
| S2PSS9 | ketamine and norketamine                         |
| SDHWUN | Ketamine and Norketamine                         |
| SI1NTS | ketamine, norketamine                            |
| SOSKS6 | Ketamine, Norketamine                            |
| SPNU7I | Ketamine, norketamine                            |
| SR7RVR | ketamine and norketamine                         |
| TAXVV1 | Ketamine and norketamine                         |
| TSSGSG | Ketamine and Norketamine                         |
| TV5NIY | ketamine, norketamine                            |
| TZXXA9 | Ketamine, norketamine                            |
| UKWRKO | KETAMINE, NORKETAMINE                            |
| UUAVAA | Ketamine and Norketamine                         |
| UZLYUO | None detected.                                   |
| VVZ4SC | ketamine   |
| WE3FAF | Ketamine and Norketamine                         |
| WN9NYZ | Ketamine, norketamine.                           |
| WSZX4Q | Ketamine, Norketamine                            |
| XN7JCJ | Ketamine and norketamine                         |
| XOMAKO | Ketamine and Norketamine                         |
| XPOAPR | Ketamine   |
| XXFUX7 | Ketamine and Norketamine                         |
| Z3OOJL | Ketamine & norketamine                           |
| ZQZJZK | Ketamine and Norketamine                         |



Statement of findings for Test Sample 4

| Code   | Ketamine | Norketamine |   |
|--------|----------|-------------|---|
| 0RWBZT | +        | +           |   |
| 0U9I7W | +        | +           | It indicates the intake of ketamine   |
| 1ZVY1V | +        | +           | Thi persin consumed ketamine.   |
| 25NT0J | ANP      | ANP         |   |
| 2HHN2K | +        | +           | ketamine metabolite, nor-ketamine, was detected but couldn't be quantified due to lack of proper analytical standard. |
| 2SLHZZ | +        | +           | Ketamine is an anaesthetic.<br>Norketamine is a metabolite of ketamine.   |
| 3FYFZF | -        | ANP         |   |
| 4Q733L | +        | +           | KETAMINE AND NORKETAMINE  |
| 4X24EX | +        | +           | Ketamine, norketamine were found in 2017/2/BS-4   |
| 5FVKJS | +        | +           | Ketamine and Norketamine were detected in sample 2017/2/BS/4.   |
| 5VR6P5 | +        | +           | No controlled drugs detected in this sample. We found Ketamine and Norketamine in BS-4                                |
| 6EGBSR | +        | +           |   |
| 6QN3UZ | +        | +           | In the sample BS-4 2017/2 was detected ketamine at the concentration of 225.8 ng/mL and norketamine.                  |
| 7PVYUM | +        | +           |   |
| 87FOG8 | +        | +           | Found ketamine and its metabolite in urine norketamin   |
| 8AXU8U | +        | +           | Sample 2017/2/BS-4 found to contains norketamine and ketamine   |
| 8TMPMM | +        | -           | Findings confirm the prior ingestion of ketamine by the individual  |
| 99LC9E | +        | +           | In sample BS-4 the drugs Norketamine and Ketamine were found  |
| 99S3IV | +        | +           | Positive to ketamine and norketamine.   |
| ABFSNT | +        | -           | After chemical analysis performed the sample contents:<br>ketamine  |
| ASSINS | +        | +           | THE SAMPLE BS-4 CONTAINS KETAMINE AND NORKETAMINE   |



| Code   | Ketamine | Norketamine |  |
|--------|----------|-------------|--|
| BKKBB1 | ANP      | ANP         |  |
| C8QSDC | +        | ANP         | The urine sample screened positive for the presence of ketamine.   |
| CDTVXT | +        | +           | Norketamine, Ketamine  |
| DDDFQ8 | ANP      | ANP         |  |
| DFBF99 | +        | +           | complete coincidence of retention time and basic ions with library data  |
| DKDX3I | +        | +           |  |
| DLGK3S | +        | +           | other identified compound: norketamine (metabolite of ketamine; GCMS), caffeine (GCMS)   |
| DPIDDC | +        | -           | In the sample of discovered ketamine 500 ng/ml, norketamine in the amount of 400 ng/ml   |
| E3PK1R | ANP      | ANP         |  |
| ESUUIL | +        | +           | Founded norketamine and caffeine   |
| FJAJZW | ANP      | ANP         |  |
| FNNKWN | ANP      | ANP         | Test sample, 2017/2/BS-4 was not found to contain controlled drugs therefore Negative for both Screening and Confirmatory tests.   |
| FSQLDZ | -        | ANP         | BY LC-MS/MS, no controlled drug was detected   |
| G7TTMY | +        | ANP         | Analytical Adverse Finding for ketamine.   |
| GAPRQN | +        | +           | ketamine, norketamine were found in the sample BS-4 at the detection limit.  |
| GCWMHX | +        | +           | The coincidence between the relative retention time and mass-fragmentograms from a reference standard analysed at the same conditions that the biological sample indicates the detection of Ketamine, Norketamine. |
| GJTUT1 | +        | +           |  |
| GRMJ5J | +        | +           | In sample BS 4 was found and confirmed the presence of KETAMINE and NORKETAMINE  |
| HDDDQ7 | +        | ANP         | Ketamine intake  |
| HFYH9H | +        | -           | Ketamine   |
| HI1IWC | +        | +           |  |
| HZIBM9 | +        | ANP         | Consistent with use of ketamine  |





| Code   | Ketamine | Norketamine |  |
|--------|----------|-------------|--|
| IBZOZI | +        | +           | Ketamine and Norketamine were detected according the results of gas chromatography/mass spectrometry analysis. |
| IEN8WG | +        | +           | In the sample was detected Ketamine and Norketamine, this finding indicates that Ketamine was consumed.        |
| JCL3AU | +        | +           | The presence of ketamine and norketamine in urine indicates consumption of ketamine.                           |
| JEKY5F | -        | -           |  |
| JZ6FPI | +        | +           | positive   |
| K3NEVF | +        | +           | Discovered: ketamine,norketamine   |
| KDK3O2 | +        | +           |  |
| KQLQQU | +        | +           | -  |
| L5HODY | +        | +           | Ketamine and norketamine detected.<br>Norketamine is a metabolite of ketamine.                                 |
| L9E9G9 | +        | +           | Ketamine and Norketamine was identified by GC/MS   |
| LLLJLL | +        | +           | Sample is positive for Ketamine and Norketamine  |
| MBMFTD | +        | +           |  |
| NPHYFU | +        | +           | drugs detected   |
| OC7RZC | +        | +           |  |
| OH9O5O | +        | +           | Ketamine and norketamine detected  |
| OPGOYJ | +        | +           | after genral extraction liq-liq , screening and specific extraction and chromatographic method adapter.        |
| OPOU6J | +        | +           |  |
| OVZUQL | +        | +           |  |
| PDZQ2X | +        | +           | use of ketamine  |
| PWZSS3 | +        | +           | Sample 4 contain ketamine, norketamine   |
| Q7YNHH | +        | +           |  |
| Q88I8V | +        | -           |  |
| QFXQJQ | +        | +           |  |



| Code   | Ketamine | Norketamine |  |
|--------|----------|-------------|--|
| QQ9VQW | +        | +           | GC/MS: Relation m/z, time retention (tR ) the reference material Ketamine, Norketamine are equivalents to those sample 2017/2 /BS-4  |
| QQQHQQ | +        | +           | In Urine sample n° 4, ketamine and norketamine were identified   |
| RZC03Q | +        | +           | indicated in the direction as the purpose of the study of the substance - ketamine, norketamine, deaminonorketamine were found at the detection limit of the methods used. |
| S2PSS9 | +        | +           | Toxicological analysis revealed the presence of ketamine and norketamine   |
| SDHWUN | +        | +           | Ketamine and Norketamine detected in BS-4 sample   |
| SI1NTS | +        | +           | a solid phase extraction was carried out identified by GC/MS and confirming by LC/MS/MS  |
| SOSKS6 | +        | +           | Indicates use of ketamine  |
| SPNU7I | +        | +           |  |
| SR7RVR | +        | +           | Presence of ketamine and its metabolite norketamine  |
| TAXVV1 | +        | +           | The sample contains ketamine and norketamine.  |
| TSSGSG | +        | +           |  |
| TV5NIY | +        | +           | cocaine was present in traces, caffeine was also found   |
| TZXXA9 | +        | +           | Ketamine, norketamine were found in BS-4   |
| UH2KUD | +        | +           |  |
| UKWRKO | +        | +           | BS-4 are positives for Ketamine and Norketamine  |
| UUAVAA | +        | +           | Ketamine is a dissociative anesthetic. Norketamine is a metabolite of ketamine. Ketamine is a Schedule III substance in the United States.                                 |
| UZLYUO | -        | -           | Extraction of sample using two solvent systems for TLC analysis.   |
| VVZ4SC | +        | +           | sample contain also norketamine (only qualitative result)  |
| WE3FAF | +        | +           |  |
| WN9NYZ | +        | +           | Ketamine use.  |
| WSZX4Q | +        | +           | Ketamine Detected<br>Norketamine Detected  |
| WWEE78 | +        | +           |  |



| Code   | Ketamine | Norketamine |   |
|--------|----------|-------------|---|
| XN7JCJ | +        | +           | Ketamine and the major active metabolite of ketamine, norketamine have been found. ketamine is registered as a drug. It's a powerful general anaesthetic which stops you feeling pain and it's used for operations on humans and animals. The effects don't last long, but until they wear off, ketamine can cause a loss of feeling in the body and paralysis of the muscles. It can also lead to you experiencing a distortion of reality. Ketamine, a dissociative anesthetic similar to PCP, has severe and is even sometimes used as a date rape drug. |
| XOMAKO | +        | +           | In the sample it was detected the presence of ketamine and Norketamine.   |
| XPOAPR | +        | -           | Ketamine was identified in the sample.  |
| XXFUX7 | +        | +           | Urine sample contains 987.3 ng/ml of Ketamine and 1201 ng/ml of Norketamine   |
| Z3OOJL | +        | +           | The sample 2017/2/BS-4 was found to contain the hallucinogenic drugs ketamine and norketamine.  |
| ZQZJZK | +        | +           | It was detected the presence of Ketamine and Norketamine in the sample analysed.  |

**Identification methods for Test Sample 4**

|                |                                 |                                      |                             |
|----------------|---------------------------------|--------------------------------------|-----------------------------|
| <b>Legend:</b> | <b>S</b> ... used for Screening | <b>I</b> ... used for Identification | <b>SI</b> ... used for both |
|----------------|---------------------------------|--------------------------------------|-----------------------------|

| Code   | 100 | 110 | 120 | 141 | 150 | 160 | 161 | 170 | 171 | 180 | 230 | 231 | 210                                      |
|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| 0RWBZT |     |     |     |     |     |     |     |     |     |     | SI  | I   |  |
| 0U9I7W |     | S   |     |     |     |     |     | I   |     | SI  |     |     |  |
| 1ZVY1V |     | S   |     |     |     |     |     |     |     | I   |     | I   |  |
| 25NT0J |     |     | SI  |     |     |     |     |     |     | I   | I   |     |  |
| 2HHN2K |     | S   |     |     |     |     | I   |     |     | I   |     |     |  |
| 2SLHZZ |     |     |     |     |     |     |     |     |     | I   |     | SI  |  |
| 3FYFZF |     | S   |     |     |     |     |     |     |     | I   |     |     |  |
| 4Q733L |     | S   |     |     |     |     |     |     |     | I   |     |     |  |
| 4X24EX |     |     |     |     |     |     |     |     |     | S   |     | I   |  |
| 5FVKJS |     |     |     |     |     |     |     |     |     | SI  |     |     |  |
| 5VR6P5 |     | S   |     |     | I   |     |     |     |     | I   |     |     |  |
| 6EGBSR |     |     |     |     |     |     |     |     |     |     |     | I   | S IMMUNOCHROMATOGRAPHIC TEST             |
| 6QN3UZ |     | S   |     |     |     |     |     |     |     | I   |     | SI  |  |
| 7PVYUM |     |     |     |     |     |     |     |     |     | I   |     | I   |  |
| 87FOG8 |     |     |     |     |     |     |     |     |     | SI  |     |     |  |
| 8AXU8U |     |     |     |     |     |     |     |     |     | SI  |     |     |  |
| 8TMPMM |     | I   |     |     |     |     |     |     |     |     |     | SI  |  |
| 99LC9E |     |     |     |     |     |     |     |     |     | SI  |     | SI  |  |
| 99S3IV |     | S   |     |     |     |     |     |     |     | I   |     | SI  |  |
| ABFSNT |     | S   |     |     |     |     |     |     |     | I   |     |     |  |
| ASSINS |     | S   |     |     |     |     |     |     |     | I   |     |     |  |
| BKKBB1 |     | S   |     |     |     |     |     |     |     | I   |     |     |  |
| C8QSDC |     |     |     |     |     |     |     |     |     |     |     | SI  |  |
| CDTVXT |     |     |     |     |     |     |     |     |     | I   |     | I   | I Kinetic Interactions of Microparticles |
| DDDFQ8 |     | S   |     |     |     |     |     |     |     |     |     |     |  |
| DFBF99 |     | S   |     |     |     |     |     |     |     | I   |     |     |  |
| DKDX3I |     | S   |     |     |     |     | I   |     |     | SI  |     |     |  |
| DLGK3S |     |     |     |     |     |     | I   |     |     | I   |     | SI  |  |
| DPIDDC |     | S   |     |     |     |     |     |     |     | I   |     |     |  |
| E3PK1R |     | S   |     |     |     |     |     |     |     | I   |     |     |  |
| ESUUIL |     | S   |     |     |     |     |     |     |     | I   |     | I   |  |
| FNNKWN |     |     |     |     |     |     |     |     |     | I   |     |     | S DT KIT                                 |
| FSQLDZ |     | S   |     |     |     |     |     |     |     |     |     | I   |  |



| Code   | 100 | 110 | 120 | 141 | 150 | 160 | 161 | 170 | 171 | 180 | 230 | 231 | 210  |
|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| G7TTMY |     |     |     |     |     |     |     |     |     | SI  |     | SI  |  |
| GAPRQN |     | S   |     |     |     |     |     |     |     | SI  |     |     |  |
| GCWMHX |     |     |     |     |     |     |     |     |     | I   |     |     |  |
| GJTUT1 |     | S   |     |     |     | I   | I   |     |     | I   |     |     |  |
| GRMJ5J |     |     |     |     |     |     |     |     |     |     | SI  | I   |  |
| HDDDQ7 |     |     |     |     |     |     |     |     |     | SI  |     |     |  |
| HFYH9H |     |     |     |     | I   |     |     |     |     |     |     |     | SI Dipro Drug lab screen                   |
| HI1IWC |     |     |     |     | I   |     |     |     |     | I   |     |     |  |
| HZIBM9 |     | S   |     |     |     |     |     |     |     | I   |     | SI  |  |
| IBZOZI |     |     |     |     |     |     |     |     |     | I   |     |     |  |
| IEN8WG |     |     |     |     |     |     |     |     |     | I   |     |     | S Lateral Flow Immunoassay                 |
| JCL3AU |     |     |     |     |     |     |     |     |     | I   | S   |     | S lateral flow immunochromatographic assay |
| JEKY5F |     |     |     |     |     |     | I   |     |     | I   |     |     | S chromatographic immunoassay              |
| JZ6FPI |     |     | S   |     |     |     | SI  |     |     |     |     |     | I SFC-MS/MS                                |
| K3NEVF |     |     |     |     |     |     |     |     |     | SI  |     |     |  |
| KDK3O2 |     | S   |     |     |     |     |     |     |     | I   |     |     |  |
| KQLQQU |     |     |     |     |     |     |     |     |     | SI  |     |     |  |
| L5HODY |     | S   |     |     |     |     |     |     |     | I   |     |     |  |
| L9E9G9 |     | S   |     |     |     |     |     |     |     | I   |     |     |  |
| LLLJLL |     | S   |     |     |     |     |     |     |     | I   |     | I   | S LC-TOF                                   |
| MBMFTD |     | S   |     |     |     |     |     |     |     | I   |     | I   |  |
| NPHYFU |     |     |     |     |     |     |     |     |     | SI  |     |     |  |
| OC7RZC |     | S   |     |     |     |     |     |     |     | I   |     | I   |  |
| OH9O5O |     |     |     |     |     |     |     |     |     | I   |     |     |  |
| OPGOYJ |     | S   |     |     |     |     | I   |     |     | I   |     |     |  |
| OPOU6J |     | S   |     |     |     |     |     |     |     | I   | I   |     |  |
| OVZUQL | S   |     |     |     |     |     |     |     |     | I   |     |     |  |
| PDZQ2X |     |     |     |     |     |     |     |     |     | I   |     |     |  |
| PWZSS3 |     | S   |     |     | I   |     |     |     |     |     |     |     | I biočip                                   |
| Q7YNHH |     | S   |     |     |     |     |     |     |     | I   |     | I   |  |
| Q88I8V |     |     |     |     |     |     |     |     |     | I   |     |     | S TRIAGE 8-ALERE Sure Step                 |
| QFXQJQ |     | S   |     |     |     |     | I   |     |     | I   |     |     |  |
| QQ9VQW |     | S   |     |     |     |     |     |     |     | I   |     |     |  |
| QQQHQQ |     | S   |     |     |     |     |     |     |     |     |     | I   |  |
| RZC03Q |     | S   |     |     |     |     |     |     |     | I   |     |     |  |
| S2PSS9 |     | S   |     |     |     |     |     |     |     | SI  |     | I   |  |
| SDHWUN |     |     |     |     |     |     |     |     |     | I   |     |     |  |



| Code   | 100 | 110 | 120 | 141 | 150 | 160 | 161 | 170 | 171 | 180 | 230 | 231 | 210                                    |
|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| SI1NTS |     | S   |     |     |     |     |     |     |     | I   |     | I   |  |
| SOSKS6 |     | S   |     |     |     |     |     |     |     | I   |     | I   |  |
| SPNU7I |     | S   |     |     |     |     |     |     |     |     |     |     | I LC/QTOF                              |
| SR7RVR |     | S   |     |     |     |     |     |     |     | S   |     | SI  |  |
| TAXVV1 |     |     |     |     |     |     |     |     |     | SI  |     | I   | S Multi-Drug Screen Test Panel         |
| TSSGSG |     |     |     |     |     |     |     |     |     | I   |     |     |  |
| TV5NIY |     |     |     |     |     |     |     |     |     | I   |     |     | S one step immunochromatographic assay |
| TZXXA9 |     |     |     |     |     |     |     |     |     | S   |     | I   |  |
| UH2KUD |     |     |     |     |     |     |     |     |     | I   |     |     |  |
| UKWRKO |     | S   |     |     | I   |     |     |     |     | I   |     | I   |  |
| UUAVAA |     |     |     |     |     |     |     |     |     |     |     |     | I LC-QTOF                              |
| UZLYUO |     |     |     |     | SI  | I   |     |     | I   |     |     |     | S TEST STRIPS                          |
| VVZ4SC |     | S   |     |     |     |     |     |     |     | I   |     | I   |  |
| WE3FAF |     | S   |     |     |     |     |     |     |     |     | I   | I   |  |
| WN9NYZ |     |     |     |     |     |     |     |     |     | I   | I   | S   |  |
| WSZX4Q |     | S   |     |     |     |     |     |     |     | I   |     | I   |  |
| WWEE78 | S   |     |     |     |     |     |     |     |     | I   |     | I   |  |
| XN7JCJ |     | S   |     |     |     |     |     |     |     | I   |     | I   |  |
| XOMAKO |     | S   |     |     |     |     |     |     |     | SI  |     |     |  |
| XPOAPR |     |     |     | S   | SI  |     |     |     |     | I   |     |     |  |
| XXFUX7 |     | SI  |     |     |     |     |     |     |     | SI  |     |     |  |
| Z3OOJL |     |     |     |     |     |     |     |     |     | SI  |     |     |  |
| ZQZJZK |     | S   |     |     |     |     |     |     |     | I   |     |     |  |

## RESPONSE SUMMARY FOR TEST SAMPLE 4

**Participants: 94**

The response summary of all 94 participating laboratories for the identification of BS-4, frequency of use of screening and identification techniques and false positives and negatives:

### Identification of Test Sample-4:

| Substance Name | Number of laboratories correctly identifying: |
|----------------|---|
| Ketamine       | 84  |
| Norketamine    | 74  |

### False positives for Test Sample-4:

| Round Code: | Substance Name:                              | Tech Code: |
|-------------|--|------------|
| QFXQJQ      | Buprenorphine                                | 161/180    |
| RZC03Q      | Desaminonorketamine                          | 180        |
| JZ6FPI      | 4-Chloro- $\alpha$ -pyrrolidinopropiophenone | SFC-MS     |
| TV5NIY      | Cocaine                                      | 180        |

### False negatives for Test Sample-4, where neither substance was identified or analysed

| Round Code: | Substance Name: | Tech Code: |
|-------------|-----------------|------------|
| 3FYFZF      | -               | 180        |
| FSQLDZ      | -               | 231        |
| JEKY5F      | -               | 161/180    |
| UZLYUO      | -               | 150/171    |
| 25NT0J      | -               | ANP        |
| BKKBB1      |                 | ANP        |
| DDDFQ8      |                 | ANP        |
| E3PK1R      |                 | ANP        |
| FJAJZW      |                 | ANP        |
| FNNKWN      |                 | ANP        |

### Frequency of use of screening, identification and quantification techniques:

| <b>Response Summary</b> |     |      |     |     |     |     |     |     |     |      |      |     |      |
|-------------------------|-----|------|-----|-----|-----|-----|-----|-----|-----|------|------|-----|------|
| <b>Participants 94</b>  |     |      |     |     |     |     |     |     |     |      |      |     |      |
| Technique               | 100 | 110  | 120 | 141 | 150 | 160 | 161 | 170 | 171 | 180  | 210  | 230 | 231  |
| Screening (No.)         | 2   | 48   | 2   | 1   | 2   | 0   | 1   | 0   | 0   | 20   | 11   | 3   | 11   |
| (%)                     | 2.1 | 51.1 | 2.1 | 1.1 | 2.1 | 0.0 | 1.1 | 0.0 | 0.0 | 21.3 | 11.7 | 3.2 | 11.7 |
| Identification (No.)    | 0   | 2    | 1   | 0   | 7   | 2   | 8   | 1   | 1   | 75   | 6    | 6   | 35   |
| (%)                     | 0.0 | 2.1  | 1.1 | 0.0 | 7.4 | 2.1 | 8.5 | 1.1 | 1.1 | 79.8 | 6.4  | 6.4 | 37.2 |
| Quantification (No.)    | 0   | 1    | 0   | 0   | 0   | 0   | 1   | 0   | 0   | 26   | 2    | 1   | 20   |
| (%)                     | 0.0 | 2.3  | 0.0 | 0.0 | 0.0 | 0.0 | 2.3 | 0.0 | 0.0 | 60.5 | 4.7  | 2.3 | 46.5 |

**Z-Scores for Test Sample 4**

| Code   | Ketamine              |                               |         |
|--------|-----------------------|-------------------------------|---------|
|        | Concentration (ng/ml) | Deviation from robust average | z-score |
| QFXQJQ | 2                     | -1044                         | -2.9    |
| 6QN3UZ | 226                   | -820                          | -2.3    |
| VWZ4SC | 360                   | -686                          | -1.9    |
| OVZUQL | 480                   | -566                          | -1.6    |
| DPIDDC | 500                   | -546                          | -1.5    |
| KDK3O2 | 630                   | -416                          | -1.2    |
| SR7RVR | 640                   | -406                          | -1.1    |
| TV5NIY | 700                   | -346                          | -1.0    |
| TZXXA9 | 784                   | -262                          | -0.7    |
| 87FOG8 | 800                   | -246                          | -0.7    |
| FJAJZW | 806                   | -240                          | -0.7    |
| KQLQQU | 940                   | -106                          | -0.3    |
| TAXVV1 | 949                   | -97                           | -0.3    |
| UKWRKO | 961                   | -85                           | -0.2    |
| XXFUX7 | 987                   | -59                           | -0.2    |
| ASSINS | 1050                  | 4                             | 0.0     |
| WN9NYZ | 1088                  | 42                            | 0.1     |
| NPHYFU | 1090                  | 44                            | 0.1     |
| 2HHN2K | 1091                  | 45                            | 0.1     |
| LLLJLL | 1100                  | 54                            | 0.2     |
| DKDX3I | 1100                  | 54                            | 0.2     |
| CDTVXT | 1107                  | 61                            | 0.2     |
| OPOU6J | 1116                  | 70                            | 0.2     |
| SPNU7I | 1136                  | 90                            | 0.3     |
| XN7JCJ | 1181                  | 135                           | 0.4     |
| 4X24EX | 1230                  | 184                           | 0.5     |
| WWEE78 | 1244                  | 198                           | 0.6     |
| 1ZVY1V | 1253                  | 207                           | 0.6     |
| Q7YNHH | 1307                  | 261                           | 0.7     |
| 6EGBSR | 1410                  | 364                           | 1.0     |
| Q88I8V | 1622                  | 576                           | 1.6     |
| ABFSNT | 1799                  | 753                           | 2.1     |
| HZIBM9 | 2600                  | 1554                          | 4.3     |
| SI1NTS | 3190                  | 2144                          | 6.0     |
| JZ6FPI | 12139                 | 11093                         | 31.0    |

| Code   | Norketamine           |                               |         |
|--------|-----------------------|-------------------------------|---------|
|        | Concentration (ng/ml) | Deviation from robust average | z-score |
| OVZUQL | 370                   | -851                          | -2.6    |
| 87FOG8 | 400                   | -821                          | -2.5    |
| TZXXA9 | 676                   | -545                          | -1.7    |
| TAXVV1 | 801                   | -420                          | -1.3    |
| SR7RVR | 850                   | -371                          | -1.1    |
| TV5NIY | 890                   | -331                          | -1.0    |
| CDTVXT | 1051                  | -170                          | -0.5    |
| Q7YNHH | 1061                  | -160                          | -0.5    |
| OPOU6J | 1165                  | -56                           | -0.2    |
| KQLQQU | 1200                  | -21                           | -0.1    |
| XXFUX7 | 1201                  | -20                           | -0.1    |
| NPHYFU | 1240                  | 19                            | 0.1     |
| WWEE78 | 1295                  | 74                            | 0.2     |
| ASSINS | 1309                  | 88                            | 0.3     |
| DKDX3I | 1333                  | 112                           | 0.3     |
| WN9NYZ | 1349                  | 128                           | 0.4     |
| 6EGBSR | 1375                  | 154                           | 0.5     |
| 1ZVY1V | 1403                  | 182                           | 0.6     |
| 4X24EX | 1500                  | 279                           | 0.8     |
| LLLJLL | 1600                  | 379                           | 1.2     |
| XN7JCJ | 2199                  | 978                           | 3.0     |
| UKWRKO | 2734                  | 1513                          | 4.6     |
| JZ6FPI | 2893                  | 1672                          | 5.1     |



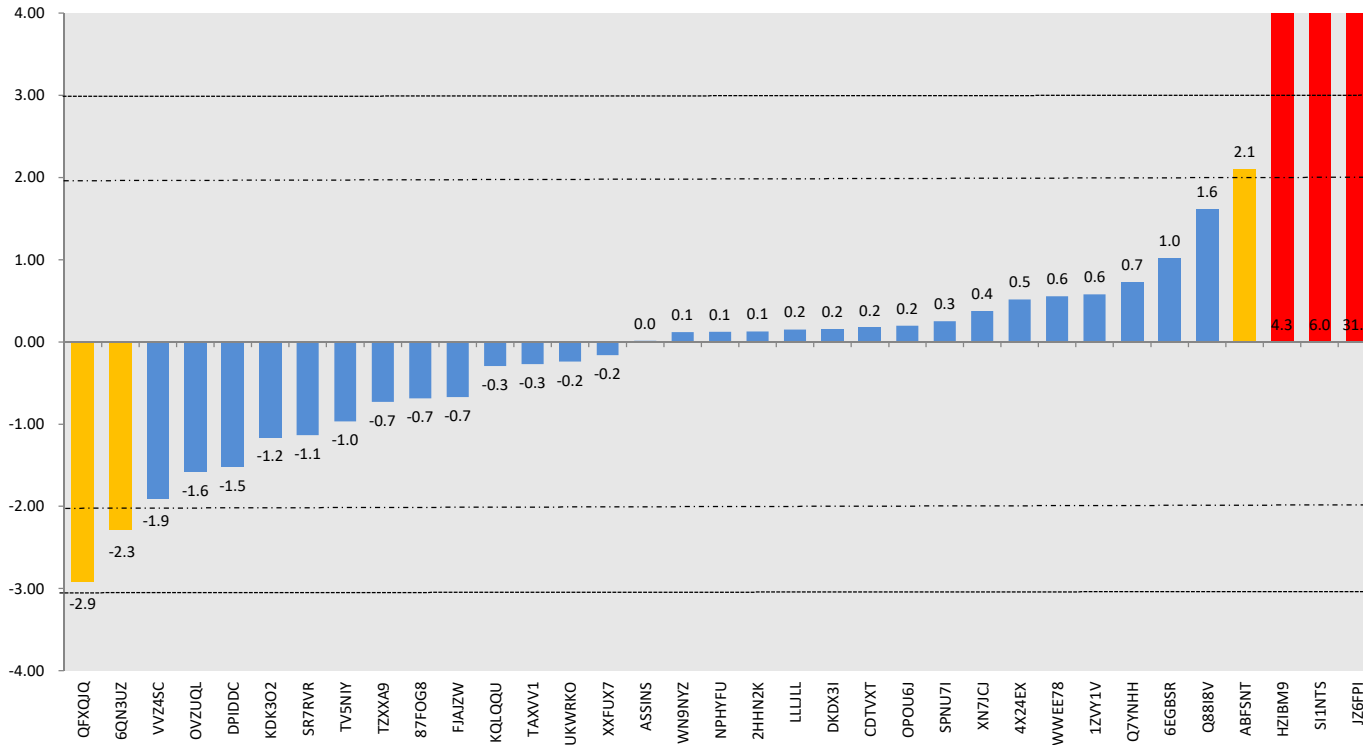
### Z-Score Report per Sample per Substance

Round: 2017/2

Substance: BS-4; Ketamine

Robust average = 1045.7 ng/ml

UNODC value = 1150 ng/ml



z-scores can be interpreted by participants in line with ISO 13528:2005, section 7.4.2 and ISO/IEC guide43-1:1997(E) as follows:

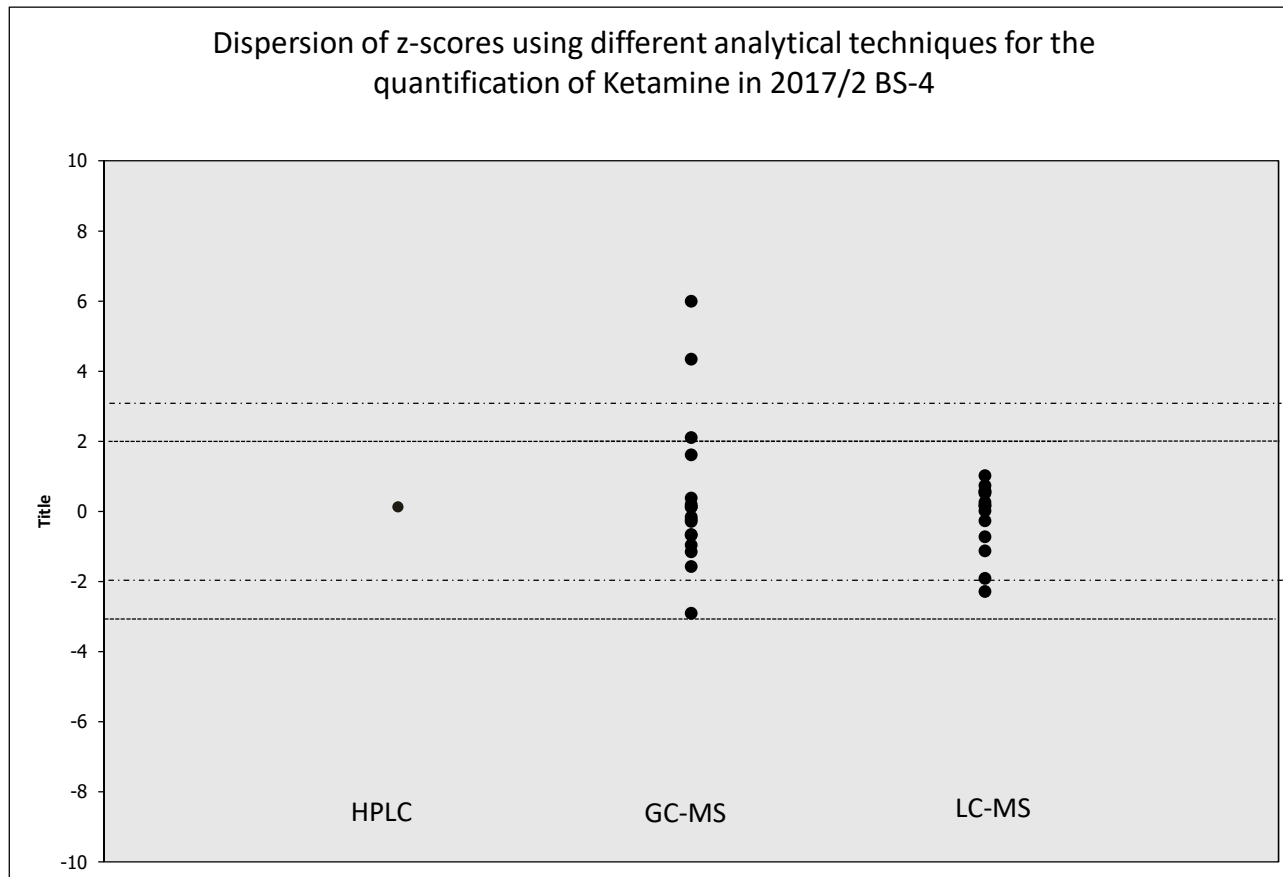
- |z| < 2 = satisfactory
- 2 ≤ |z| ≤ 3 = questionable
- |z| > 3 = unsatisfactory

According to the recommendations in ISO 13528:2005, an unsatisfactory z-score is considered to give an action signal and a questionable z-score is considered to give a warning signal. A single action signal or warning signal in two successive rounds shall be taken that an anomaly has occurred that requires investigation.

**Z-Score Report per Sample per Substance**

**Round: 2017/2**

Substance: BS-4; Ketamine



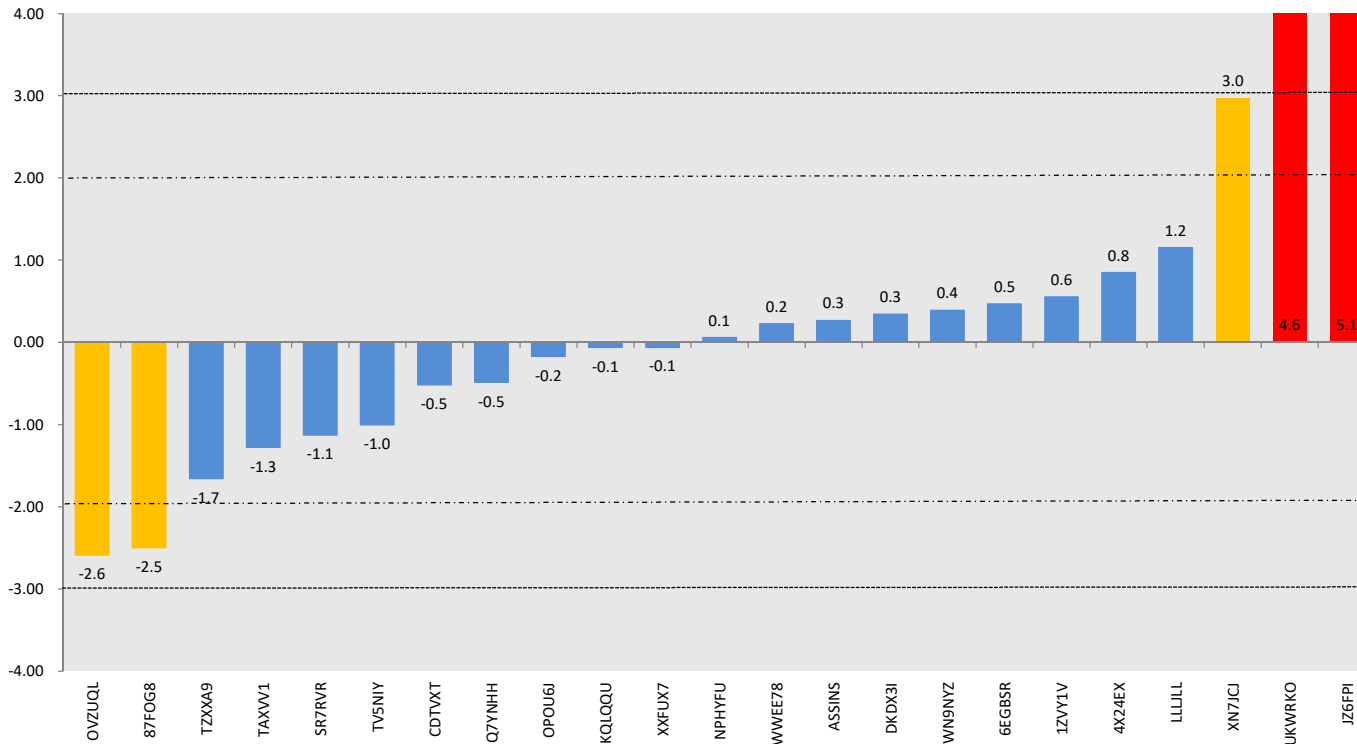
### Z-Score Report per Sample per Substance

Round: 2017/2

Substance: BS-4; Norketamine

Robust average = 1220.9 ng/ml

UNODC value = 1380 ng/ml



z-scores can be interpreted by participants in line with ISO 13528:2005, section 7.4.2 and ISO/IEC guide43-1:1997(E) as follows:

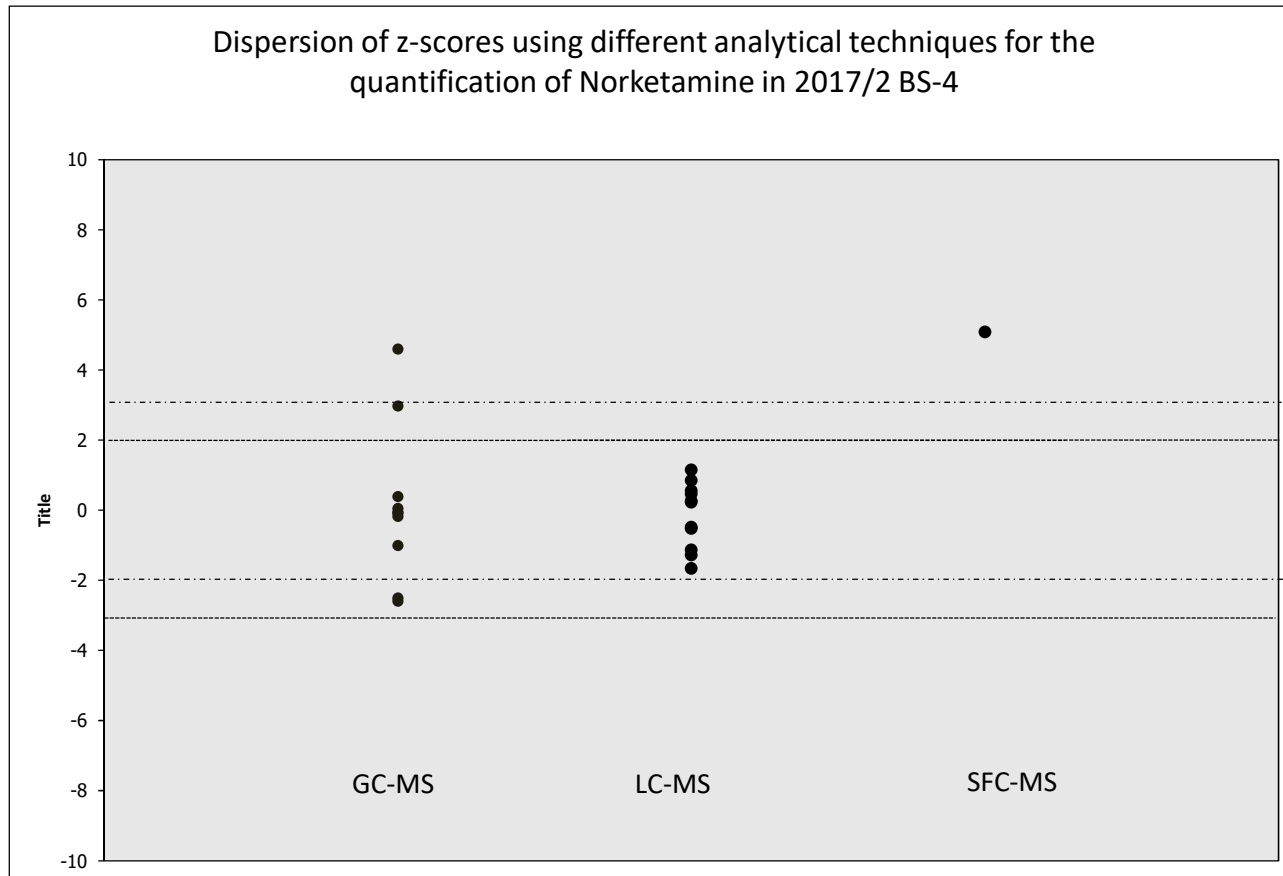
- |z| < 2 = satisfactory
- 2 ≤ |z| ≤ 3 = questionable
- |z| > 3 = unsatisfactory

According to the recommendations in ISO 13528:2005, an unsatisfactory z-score is considered to give an action signal and a questionable z-score is considered to give a warning signal. A single action signal or warning signal in two successive rounds shall be taken that an anomaly has occurred that requires investigation.

**Z-Score Report per Sample per Substance**

**Round: 2017/2**

Substance: BS-4; Norketamine





**UNODC**

United Nations Office on Drugs and Crime

INTERNATIONAL QUALITY ASSURANCE PROGRAMME (IQAP)  
INTERNATIONAL COLLABORATIVE EXERCISES (ICE)

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