



Food and Drug Administration  
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HEALGEN SCIENTIFIC LLC  
C/O JOE SHIA  
LSI INTERNATIONAL INC.  
504 EAST DIAMOND AVE.  
SUITE I  
GAITHERSBURG MD 20877

August 2, 2017

Re: k163704

Trade/Device Name: Healgen Multi-Drug Urine Test Cup  
Healgen Multi-Drug Urine Test Dip Card

Regulation Number: 21 CFR 862.3170

Regulation Name: Benzodiazepine test system

Regulatory Class: II

Product Code: JXM, DJG, DIO, LDJ, LCM, LAF, DKZ, DIS, DJR, JXN, LFG

Dated: June 26, 2017

Received: July 03, 2017

Dear Joe Shia:

We have reviewed your Section 510(k) premarket notification of intent to market the device referenced above and have determined the device is substantially equivalent (for the indications for use stated in the enclosure) to legally marketed predicate devices marketed in interstate commerce prior to May 28, 1976, the enactment date of the Medical Device Amendments, or to devices that have been reclassified in accordance with the provisions of the Federal Food, Drug, and Cosmetic Act (Act) that do not require approval of a premarket approval application (PMA). You may, therefore, market the device, subject to the general controls provisions of the Act. The general controls provisions of the Act include requirements for annual registration, listing of devices, good manufacturing practice, labeling, and prohibitions against misbranding and adulteration. Please note: CDRH does not evaluate information related to contract liability warranties. We remind you, however, that device labeling must be truthful and not misleading.

If your device is classified (see above) into either class II (Special Controls) or class III (PMA), it may be subject to additional controls. Existing major regulations affecting your device can be found in the Code of Federal Regulations, Title 21, Parts 800 to 898. In addition, FDA may publish further announcements concerning your device in the Federal Register.

Please be advised that FDA's issuance of a substantial equivalence determination does not mean that FDA has made a determination that your device complies with other requirements of the Act or any Federal statutes and regulations administered by other Federal agencies. You must comply with all the Act's requirements, including, but not limited to: registration and listing (21 CFR Part 807); labeling (21 CFR Parts 801 and 809); medical device reporting (reporting of medical device-related adverse events) (21 CFR 803); good manufacturing practice requirements as set forth in the quality systems (QS) regulation (21 CFR Part 820); and if applicable, the

electronic product radiation control provisions (Sections 531-542 of the Act); 21 CFR 1000-1050.

If you desire specific advice for your device on our labeling regulations (21 CFR Parts 801 and 809), please contact the Division of Industry and Consumer Education at its toll-free number (800) 638 2041 or (301) 796-7100 or at its Internet address <http://www.fda.gov/MedicalDevices/ResourcesforYou/Industry/default.htm>. Also, please note the regulation entitled, “Misbranding by reference to premarket notification” (21 CFR Part 807.97). For questions regarding the reporting of adverse events under the MDR regulation (21 CFR Part 803), please go to <http://www.fda.gov/MedicalDevices/Safety/ReportaProblem/default.htm> for the CDRH’s Office of Surveillance and Biometrics/Division of Postmarket Surveillance.

You may obtain other general information on your responsibilities under the Act from the Division of Industry and Consumer Education at its toll-free number (800) 638-2041 or (301) 796-7100 or at its Internet address <http://www.fda.gov/MedicalDevices/ResourcesforYou/Industry/default.htm>.

Sincerely yours,

**Donald J. St Pierre -S**

Donald J. St. Pierre  
Acting Director  
Office of In Vitro Diagnostics  
and Radiological Health  
Center for Devices and Radiological Health

Enclosure

## Indications for Use

510(k) Number (if known)

Device Name

Healgen Multi-Drug Urine Test Cup  
Healgen Multi-Drug Urine Test Dip Card

Indications for Use (Describe)

Healgen Multi-Drug Urine Test Cup and Healgen Multi-Drug Urine Test Dip Card are competitive binding, lateral flow immunochromatographic assays for qualitative and simultaneous detection of Amphetamine, Oxazepam, Cocaine, Cannabinoids, Methamphetamine, Morphine, Oxycodone, Secobarbital, Buprenorphine, Methylenedioxy-methamphetamine, Phencyclidine, EDDP, Nortriptyline and Methadone in human urine at the cutoff concentrations of:

| Drug(Identifier)               | Cut-off level           |
|--------------------------------|-------------------------|
| Amphetamine                    | 500 ng/mL               |
| Oxazepam                       | 300 ng/mL               |
| Cocaine                        | 150 ng/mL               |
| Cannabinoids                   | 50 ng/mL                |
| Methamphetamine                | 500 ng/mL               |
| Morphine                       | 300 ng/mL or 2000 ng/mL |
| Oxycodone                      | 100 ng/mL               |
| Secobarbital                   | 300 ng/mL               |
| Buprenorphine                  | 10 ng/mL                |
| Methylenedioxy-methamphetamine | 500 ng/mL               |
| Phencyclidine                  | 25 ng/mL                |
| Methadone                      | 300 ng/mL               |
| Propoxyphene                   | 300 ng/mL               |
| Nortriptyline                  | 1000 ng/mL              |

Configuration of the Healgen Multi-Drug Urine Test Cup and Healgen Multi-Drug Urine Test Dip Card can consist of any combination of the above listed drug analytes.

The test may yield positive results for the prescription drugs Buprenorphine, Oxazepam, Secobarbital, Nortriptyline, Propoxyphene and Oxycodone when taken at or above prescribed doses. It is not intended to distinguish between prescription use or abuse of these drugs. Clinical consideration and professional judgment should be exercised with any drug of abuse test result, particularly when the preliminary result is positive. The test provides only preliminary test results. A more specific alternative chemical method must be used in order to obtain a confirmed analytical result. GC/MS or LC/MS is the preferred confirmatory method.

Type of Use (Select one or both, as applicable)

☒ Prescription Use (Part 21 CFR 801 Subpart D)

☒ Over-The-Counter Use (21 CFR 801 Subpart C)

**CONTINUE ON A SEPARATE PAGE IF NEEDED.**

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## 510(k) SUMMARY

1. Date: December 18, 2016
  
2. Submitter: HEALGEN SCIENTIFIC LLC  
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4. Device Name: Healgen Multi-Drug Urine Test Cup  
Healgen Multi-Drug Urine Test Dip Card

Classification: Class II

| Product Code                          | Regulation Section                                             | Panel      |
|---------------------------------------|----------------------------------------------------------------|------------|
| DKZ<br>Amphetamine                    | 21 CFR § 862.3100, Amphetamine Test System                     | Toxicology |
| LDJ<br>Cannabinoids                   | 21 CFR § 862.3870, Cannabinoids Test System                    | Toxicology |
| DIO<br>Cocaine                        | 21 CFR § 862.3250, Cocaine and Cocaine Metabolites Test System | Toxicology |
| LAF<br>Methamphetamine                | 21 CFR § 862.3610, Methamphetamine Test System                 | Toxicology |
| DJG<br>Morphine                       | 21 CFR § 862.3650, Opiate Test System                          | Toxicology |
| JXM<br>Oxazepam                       | 21 CFR § 862.3170, Benzodiazepine Test System                  | Toxicology |
| DJG<br>Oxycodone                      | 21 CFR § 862.3650, Opiate Test System                          | Toxicology |
| DIS<br>Secobarbital                   | 21 CFR § 862.3150, Barbiturate Test System                     | Toxicology |
| DJG<br>Buprenorphine                  | 21 CFR § 862.3650, Opiate Test System                          | Toxicology |
| LAF<br>Methylenedioxy-methamphetamine | 21 CFR § 862.3610, Methamphetamine Test System                 | Toxicology |

|                      |                                                                         |            |
|----------------------|-------------------------------------------------------------------------|------------|
| LCM<br>Phencyclidine | Enzyme Immunoassay Phencyclidine                                        | Toxicology |
| DJR<br>Methadone     | 21 CFR § 862.3620, Methadone Test System                                | Toxicology |
| JXN<br>Propoxyphene  | 21 CFR § 862.3700, Propoxyphene Test System                             | Toxicology |
| LFG<br>Nortriptyline | 21 CFR, 862.3910 Tricyclic antidepressant drugs test system Test System | Toxicology |

5. Description of the device:

Healgen Multi-Drug Urine Test Cup and Healgen Multi-Drug Urine Test DipCard are competitive binding, lateral flow immunochromatographic assays for qualitative and simultaneous detection of Amphetamine, Oxazepam, Cocaine, Cannabinoids, Methamphetamine, Morphine, Oxycodone, Secobarbital, Buprenorphine, Methylenedioxy-methamphetamine, Phencyclidine, Propoxyphene, Nortriptyline and Methadone in human urine samples. Healgen Multi-Drug devices detect each of analytes on different strips.

A positive urine sample will not generate a colored-line for the specific drug tested in the designated region. A negative urine specimen or a urine sample containing Amphetamine, Oxazepam, Cocaine, Cannabinoids, Methamphetamine, Morphine, Oxycodone, Secobarbital, Buprenorphine, Methylenedioxy-methamphetamine, Phencyclidine, Propoxyphene, Nortriptyline and Methadone at the concentration below the designated cutoff levels will generate a colored line in the designated test region for the drug. To serve as a test control, a color line will always appear at the control region.

6. Predicate Devices:

K142280; Healgen Oxazepam and Morphine Tests (Dip Card, Cup)

K143187; Healgen Amphetamine and Oxycodone Tests (Dip Card, Cup)

K141647; Healgen Cocaine and Morphine Tests (Dip Card, Cup)

K140546; Healgen Marijuana and Methamphetamine Tests (Dip Card, Cup)

K150791; Healgen Secobarbital, Buprenorphine and Methadone Tests (Cup, Dip Card)

K150096; Healgen Methylenedioxy-methamphetamine and Phencyclidine Tests (Dip Card, Cup)

K151348; Healgen Nortriptyline and Propoxyphene Tests (DipCard, Cup)

K152269; Healgen Amphetamine, Cocaine and Methamphetamine Tests (Dip Card, Cup)

7. Intended Use / Indications for Use

Healgen Multi-Drug Urine Test Cup and Healgen Multi-Drug Urine Test Dip Card are competitive binding, lateral flow immunochromatographic assays for qualitative and simultaneous detection of Amphetamine, Oxazepam, Cocaine, Cannabinoids, Methamphetamine, Morphine, Oxycodone, Secobarbital, Buprenorphine, Methylenedioxy-methamphetamine, Phencyclidine, Propoxyphene, Nortriptyline and Methadone in human urine at the cutoff concentrations of:

| Drug(Identifier) | Cut-off level |
|------------------|---------------|
| Amphetamine(AMP) | 500 ng/mL     |

|                                       |                        |
|---------------------------------------|------------------------|
| Oxazepam (OXA)                        | 300 ng/mL              |
| Cocaine (COC)                         | 150 ng/mL              |
| Cannabinoids (THC)                    | 50 ng/mL               |
| Methamphetamine (MET)                 | 500 ng/mL              |
| Morphine (MOR)                        | 300ng/mL or 2000 ng/mL |
| Oxycodone (OXY)                       | 100 ng/mL              |
| Secobarbital (BAR)                    | 300 ng/mL              |
| Buprenorphine (BUP)                   | 10 ng/mL               |
| Methylenedioxy-methamphetamine (MDMA) | 500 ng/mL              |
| Phencyclidine (PCP)                   | 25 ng/mL               |
| Methadone (MTD)                       | 300 ng/mL              |
| Propoxyphene                          | 300 ng/mL              |
| Nortriptyline (TCA)                   | 1000 ng/mL             |

Configuration of the Healgen Multi-Drug Urine Test Cup and Healgen Multi-Drug Urine Test Dip Card can consist of any combination of the above listed drug analytes.

The test may yield positive results for the prescription drugs Buprenorphine, Oxazepam, Secobarbital, Nortriptyline and Oxycodone when taken at or above prescribed doses. It is not intended to distinguish between prescription use or abuse of these drugs. Clinical consideration and professional judgment should be exercised with any drug of abuse test result, particularly when the preliminary result is positive. The test provides only preliminary test results. A more specific alternative chemical method must be used in order to obtain a confirmed analytical result. GC/MS or LC/MS is the preferred confirmatory method.

#### 8. Substantial Equivalence Information

Healgen Multi-Drug Urine Test Cup and Healgen Multi-Drug Urine Test Dip Card are a modified product format derived from the previously FDA-cleared Healgen single DOA Tests. A summary comparison of features of the Healgen Multi-Drug Urine Test Cup and Healgen Multi-Drug Urine Test Dip Card and the predicate devices is provided in the following Table

| Item | New Devices | Predicate devices (K142280, K143187, K141647, K140546, K150791, K150096, K151348, K152269) |
|------|-------------|--------------------------------------------------------------------------------------------|
|------|-------------|--------------------------------------------------------------------------------------------|

|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                  |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Indication(s) for use | <p>For the qualitative determination of Amphetamine, Oxazepam, Cocaine, Cannabinoids, Methamphetamine, Morphine, Oxycodone, Secobarbital, Buprenorphine, Methylenedioxy-methamphetamine, Phencyclidine, Propoxyphene, Nortriptyline and Methadone in human urine.</p> <p>The configurations of the New Devices are available in any combination of the above tests.</p>                                                                                                                                                                     | <p>For the qualitative determination of Amphetamine, Oxazepam, Cocaine, Cannabinoids, Methamphetamine, Morphine, Oxycodone, Secobarbital, Buprenorphine, Methylenedioxy-methamphetamine, Phencyclidine, Propoxyphene, Nortriptyline and Methadone in human urine.</p> <p>The configurations of the Predicate devices are only available in single drug test.</p> |
| Methodology           | Competitive binding, lateral flow immunochromatographic assays based on the principle of antigen antibody immunochemistry.                                                                                                                                                                                                                                                                                                                                                                                                                  | Same                                                                                                                                                                                                                                                                                                                                                             |
| Type Of Test          | Immunoassay principles that rely on antigen- antibody interactions to indicate positive or negative result                                                                                                                                                                                                                                                                                                                                                                                                                                  | Same                                                                                                                                                                                                                                                                                                                                                             |
| Results               | Qualitative                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Same                                                                                                                                                                                                                                                                                                                                                             |
| Specimen Type         | Human urine                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Same                                                                                                                                                                                                                                                                                                                                                             |
| Cut Off Values        | <p>Amphetamine (AMP): 500 ng/ml</p> <p>Oxazepam (OXA):300 ng/ml</p> <p>Cocaine(COC): 150 ng/ml</p> <p>Cannabinoids (THC):50 ng/ml</p> <p>Methamphetamine (MET): 500 ng/ml</p> <p>Morphine (MOR): 300ng/mL or 2000 ng/ml</p> <p>Oxycodone(OXY) : 100 ng/ml</p> <p>Secobarbital (BAR): 300 ng/ml</p> <p>Buprenorphine (BUP): 10 ng/ml</p> <p>Methylenedioxy-methamphetamine(MDMA): 500 ng/ml</p> <p>Phencyclidine (PCP): 25 ng/ml</p> <p>Methadone (MTD): 300 ng/ml</p> <p>Propoxyphene: 300 ng/ml</p> <p>Nortriptyline (TCA): 1000 ng/ml</p> | Same                                                                                                                                                                                                                                                                                                                                                             |
| Configurations        | Cup, Dip Card                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Same                                                                                                                                                                                                                                                                                                                                                             |
| Intended Use          | OTC Use & Prescription Use                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Same                                                                                                                                                                                                                                                                                                                                                             |

Healgen Multi-Drug Urine Test Cup is a multi-drug test that offers any combination from 2 to 14 drugs of abuse tests while the predicate devices are single-drug test. And the Healgen Multi-Drug Urine Test Dip Card is the same as the test dip card format of the predicate devices except that the Healgen Multi-Drug Urine Test Dip Card is a multi-drug test that offers any combination from 2 to 14 drugs of abuse tests while the predicate devices are single-drug test.

## 9. Performance

Performance data of precision, cut-off, interference, specificity and method comparison of the devices were reported in K142280, K143187, K141647, K140546, K15079, K150096, K151348 and K152269.

## 10. Lay User Verification

A lay user study was performed at three intended user sites with 300 lay persons for each format of the device. The lay users had diverse educational and professional backgrounds and ranged in age from 20 to > 50 years. Urine samples were prepared at the following concentrations; negative, +/-75%, +/-50%, +/-25% of the cutoff by spiking drugs into drug free-pooled urine specimens. The concentrations of the samples were confirmed by GC/MS. Each sample was aliquoted into individual containers and blind-labeled. Each participant was provided with the package insert, blind labeled samples and test devices.

### Comparison between GC/MS and Lay Person Results for Dip Card with MOP 300

| Drugs           | % of Cutoff  | Number of samples | Lay person results |                 | The percentage agreement (%) |
|-----------------|--------------|-------------------|--------------------|-----------------|------------------------------|
|                 |              |                   | No. of Positive    | No. of Negative |                              |
| Methamphetamine | -100% Cutoff | 20                | 0                  | 20              | 100%                         |
|                 | -75% Cutoff  | 20                | 0                  | 20              | 100%                         |
|                 | -50% Cutoff  | 160               | 0                  | 160             | 100%                         |
|                 | -25% Cutoff  | 20                | 1                  | 19              | 95%                          |
|                 | +25% Cutoff  | 20                | 19                 | 1               | 95%                          |
|                 | +50% Cutoff  | 40                | 40                 | 0               | 100%                         |
|                 | +75% Cutoff  | 20                | 20                 | 0               | 100%                         |
| Cocaine         | -100% Cutoff | 20                | 0                  | 20              | 100%                         |
|                 | -75% Cutoff  | 20                | 0                  | 20              | 100%                         |
|                 | -50% Cutoff  | 160               | 0                  | 160             | 100%                         |
|                 | -25% Cutoff  | 20                | 1                  | 19              | 95%                          |
|                 | +25% Cutoff  | 20                | 18                 | 2               | 90%                          |
|                 | +50% Cutoff  | 40                | 40                 | 0               | 100%                         |
|                 | +75% Cutoff  | 20                | 20                 | 0               | 100%                         |
| Cannabinoids    | -100% Cutoff | 20                | 0                  | 20              | 100%                         |
|                 | -75% Cutoff  | 20                | 0                  | 20              | 100%                         |
|                 | -50% Cutoff  | 160               | 0                  | 160             | 100%                         |

|              |              |     |    |     |      |
|--------------|--------------|-----|----|-----|------|
|              | -25% Cutoff  | 20  | 2  | 18  | 90%  |
|              | +25% Cutoff  | 20  | 18 | 2   | 90%  |
|              | +50% Cutoff  | 40  | 40 | 0   | 100% |
|              | +75% Cutoff  | 20  | 20 | 0   | 100% |
| Morphine     | -100% Cutoff | 20  | 0  | 20  | 100% |
|              | -75% Cutoff  | 20  | 0  | 20  | 100% |
|              | -50% Cutoff  | 160 | 0  | 160 | 100% |
|              | -25% Cutoff  | 20  | 3  | 17  | 85%  |
|              | +25% Cutoff  | 20  | 19 | 1   | 95%  |
|              | +50% Cutoff  | 40  | 40 | 0   | 100% |
|              | +75% Cutoff  | 20  | 20 | 0   | 100% |
| Oxazepam     | -100% Cutoff | 20  | 0  | 20  | 100% |
|              | -75% Cutoff  | 20  | 0  | 20  | 100% |
|              | -50% Cutoff  | 160 | 0  | 160 | 100% |
|              | -25% Cutoff  | 20  | 1  | 19  | 95%  |
|              | +25% Cutoff  | 20  | 17 | 3   | 85%  |
|              | +50% Cutoff  | 40  | 40 | 0   | 100% |
|              | +75% Cutoff  | 20  | 20 | 0   | 100% |
| Amphetamine  | -100% Cutoff | 20  | 0  | 20  | 100% |
|              | -75% Cutoff  | 20  | 0  | 20  | 100% |
|              | -50% Cutoff  | 160 | 0  | 160 | 100% |
|              | -25% Cutoff  | 20  | 2  | 18  | 90%  |
|              | +25% Cutoff  | 20  | 18 | 2   | 90%  |
|              | +50% Cutoff  | 40  | 40 | 0   | 100% |
|              | +75% Cutoff  | 20  | 20 | 0   | 100% |
| Oxycodone    | -100% Cutoff | 20  | 0  | 20  | 100% |
|              | -75% Cutoff  | 20  | 0  | 20  | 100% |
|              | -50% Cutoff  | 160 | 0  | 160 | 100% |
|              | -25% Cutoff  | 20  | 2  | 18  | 90%  |
|              | +25% Cutoff  | 20  | 19 | 1   | 95%  |
|              | +50% Cutoff  | 40  | 40 | 0   | 100% |
|              | +75% Cutoff  | 20  | 20 | 0   | 100% |
| Methadone    | -100% Cutoff | 20  | 0  | 20  | 100% |
|              | -75% Cutoff  | 20  | 0  | 20  | 100% |
|              | -50% Cutoff  | 160 | 0  | 160 | 100% |
|              | -25% Cutoff  | 20  | 3  | 17  | 85%  |
|              | +25% Cutoff  | 20  | 19 | 1   | 95%  |
|              | +50% Cutoff  | 40  | 40 | 0   | 100% |
|              | +75% Cutoff  | 20  | 20 | 0   | 100% |
| Secobarbital | -100% Cutoff | 20  | 0  | 20  | 100% |

|                           |              |     |    |     |      |
|---------------------------|--------------|-----|----|-----|------|
|                           | -75% Cutoff  | 20  | 0  | 20  | 100% |
|                           | -50% Cutoff  | 160 | 0  | 160 | 100% |
|                           | -25% Cutoff  | 20  | 1  | 19  | 95%  |
|                           | +25% Cutoff  | 20  | 19 | 1   | 95%  |
|                           | +50% Cutoff  | 40  | 40 | 0   | 100% |
|                           | +75% Cutoff  | 20  | 20 | 0   | 100% |
| Buprenorphine             | -100% Cutoff | 20  | 0  | 20  | 100% |
|                           | -75% Cutoff  | 20  | 0  | 20  | 100% |
|                           | -50% Cutoff  | 160 | 0  | 160 | 100% |
|                           | -25% Cutoff  | 20  | 1  | 19  | 95%  |
|                           | +25% Cutoff  | 20  | 19 | 1   | 95%  |
|                           | +50% Cutoff  | 40  | 40 | 0   | 100% |
|                           | +75% Cutoff  | 20  | 20 | 0   | 100% |
| Phencyclidine             | -100% Cutoff | 20  | 0  | 20  | 100% |
|                           | -75% Cutoff  | 20  | 0  | 20  | 100% |
|                           | -50% Cutoff  | 160 | 0  | 160 | 100% |
|                           | -25% Cutoff  | 20  | 2  | 18  | 90%  |
|                           | +25% Cutoff  | 20  | 18 | 2   | 90%  |
|                           | +50% Cutoff  | 40  | 40 | 0   | 100% |
|                           | +75% Cutoff  | 20  | 20 | 0   | 100% |
| MDMA                      | -100% Cutoff | 20  | 0  | 20  | 100% |
|                           | -75% Cutoff  | 20  | 0  | 20  | 100% |
|                           | -50% Cutoff  | 160 | 0  | 160 | 100% |
|                           | -25% Cutoff  | 20  | 1  | 19  | 95%  |
|                           | +25% Cutoff  | 20  | 18 | 2   | 90%  |
|                           | +50% Cutoff  | 40  | 40 | 0   | 100% |
|                           | +75% Cutoff  | 20  | 20 | 0   | 100% |
| Propoxyphene              | -100% Cutoff | 20  | 0  | 20  | 100% |
|                           | -75% Cutoff  | 20  | 0  | 20  | 100% |
|                           | -50% Cutoff  | 160 | 0  | 160 | 100% |
|                           | -25% Cutoff  | 20  | 2  | 18  | 90%  |
|                           | +25% Cutoff  | 20  | 18 | 2   | 90%  |
|                           | +50% Cutoff  | 40  | 40 | 0   | 100% |
|                           | +75% Cutoff  | 20  | 20 | 0   | 100% |
| Tricyclic Antidepressants | -100% Cutoff | 20  | 0  | 20  | 100% |
|                           | -75% Cutoff  | 20  | 0  | 20  | 100% |
|                           | -50% Cutoff  | 160 | 0  | 160 | 100% |
|                           | -25% Cutoff  | 20  | 1  | 19  | 95%  |
|                           | +25% Cutoff  | 20  | 19 | 1   | 95%  |
|                           | +50% Cutoff  | 40  | 40 | 0   | 100% |

|  |             |    |    |   |      |
|--|-------------|----|----|---|------|
|  | +75% Cutoff | 20 | 20 | 0 | 100% |
|--|-------------|----|----|---|------|

**Comparison between GC/MS and Lay Person Results for Dip Card with MOP 2000**

| Drugs           | % of Cutoff  | Number of samples | Lay person results |                 | The percentage agreement (%) |
|-----------------|--------------|-------------------|--------------------|-----------------|------------------------------|
|                 |              |                   | No. of Positive    | No. of Negative |                              |
| Methamphetamine | -100% Cutoff | 20                | 0                  | 20              | 100%                         |
|                 | -75% Cutoff  | 20                | 0                  | 20              | 100%                         |
|                 | -50% Cutoff  | 160               | 0                  | 160             | 100%                         |
|                 | -25% Cutoff  | 20                | 2                  | 18              | 90%                          |
|                 | +25% Cutoff  | 20                | 19                 | 1               | 95%                          |
|                 | +50% Cutoff  | 40                | 40                 | 0               | 100%                         |
|                 | +75% Cutoff  | 20                | 20                 | 0               | 100%                         |
| Cocaine         | -100% Cutoff | 20                | 0                  | 20              | 100%                         |
|                 | -75% Cutoff  | 20                | 0                  | 20              | 100%                         |
|                 | -50% Cutoff  | 160               | 0                  | 160             | 100%                         |
|                 | -25% Cutoff  | 20                | 1                  | 19              | 95%                          |
|                 | +25% Cutoff  | 20                | 18                 | 2               | 90%                          |
|                 | +50% Cutoff  | 40                | 40                 | 0               | 100%                         |
|                 | +75% Cutoff  | 20                | 20                 | 0               | 100%                         |
| Cannabinoids    | -100% Cutoff | 20                | 0                  | 20              | 100%                         |
|                 | -75% Cutoff  | 20                | 0                  | 20              | 100%                         |
|                 | -50% Cutoff  | 160               | 0                  | 160             | 100%                         |
|                 | -25% Cutoff  | 20                | 2                  | 18              | 90%                          |
|                 | +25% Cutoff  | 20                | 19                 | 1               | 95%                          |
|                 | +50% Cutoff  | 40                | 40                 | 0               | 100%                         |
|                 | +75% Cutoff  | 20                | 20                 | 0               | 100%                         |
| Morphine        | -100% Cutoff | 20                | 0                  | 20              | 100%                         |
|                 | -75% Cutoff  | 20                | 0                  | 20              | 100%                         |
|                 | -50% Cutoff  | 160               | 0                  | 160             | 100%                         |
|                 | -25% Cutoff  | 20                | 1                  | 19              | 95%                          |
|                 | +25% Cutoff  | 20                | 18                 | 2               | 90%                          |
|                 | +50% Cutoff  | 40                | 40                 | 0               | 100%                         |
|                 | +75% Cutoff  | 20                | 20                 | 0               | 100%                         |
| Oxazepam        | -100% Cutoff | 20                | 0                  | 20              | 100%                         |
|                 | -75% Cutoff  | 20                | 0                  | 20              | 100%                         |
|                 | -50% Cutoff  | 160               | 0                  | 160             | 100%                         |
|                 | -25% Cutoff  | 20                | 1                  | 19              | 95%                          |
|                 | +25% Cutoff  | 20                | 18                 | 2               | 90%                          |
|                 | +50% Cutoff  | 40                | 40                 | 0               | 100%                         |
|                 | +75% Cutoff  | 20                | 20                 | 0               | 100%                         |

|               |              |     |    |     |      |
|---------------|--------------|-----|----|-----|------|
| Amphetamine   | -100% Cutoff | 20  | 0  | 20  | 100% |
|               | -75% Cutoff  | 20  | 0  | 20  | 100% |
|               | -50% Cutoff  | 160 | 0  | 160 | 100% |
|               | -25% Cutoff  | 20  | 3  | 17  | 85%  |
|               | +25% Cutoff  | 20  | 19 | 1   | 95%  |
|               | +50% Cutoff  | 40  | 40 | 0   | 100% |
|               | +75% Cutoff  | 20  | 20 | 0   | 100% |
| Oxycodone     | -100% Cutoff | 20  | 0  | 20  | 100% |
|               | -75% Cutoff  | 20  | 0  | 20  | 100% |
|               | -50% Cutoff  | 160 | 0  | 160 | 100% |
|               | -25% Cutoff  | 20  | 3  | 17  | 85%  |
|               | +25% Cutoff  | 20  | 19 | 1   | 95%  |
|               | +50% Cutoff  | 40  | 40 | 0   | 100% |
|               | +75% Cutoff  | 20  | 20 | 0   | 100% |
| Methadone     | -100% Cutoff | 20  | 0  | 20  | 100% |
|               | -75% Cutoff  | 20  | 0  | 20  | 100% |
|               | -50% Cutoff  | 160 | 0  | 160 | 100% |
|               | -25% Cutoff  | 20  | 1  | 19  | 95%  |
|               | +25% Cutoff  | 20  | 19 | 1   | 95%  |
|               | +50% Cutoff  | 40  | 40 | 0   | 100% |
|               | +75% Cutoff  | 20  | 20 | 0   | 100% |
| Secobarbital  | -100% Cutoff | 20  | 0  | 20  | 100% |
|               | -75% Cutoff  | 20  | 0  | 20  | 100% |
|               | -50% Cutoff  | 160 | 0  | 160 | 100% |
|               | -25% Cutoff  | 20  | 0  | 20  | 100% |
|               | +25% Cutoff  | 20  | 18 | 2   | 90%  |
|               | +50% Cutoff  | 40  | 40 | 0   | 100% |
|               | +75% Cutoff  | 20  | 20 | 0   | 100% |
| Buprenorphine | -100% Cutoff | 20  | 0  | 20  | 100% |
|               | -75% Cutoff  | 20  | 0  | 20  | 100% |
|               | -50% Cutoff  | 160 | 0  | 160 | 100% |
|               | -25% Cutoff  | 20  | 1  | 19  | 95%  |
|               | +25% Cutoff  | 20  | 18 | 2   | 90%  |
|               | +50% Cutoff  | 40  | 40 | 0   | 100% |
|               | +75% Cutoff  | 20  | 20 | 0   | 100% |
| Phencyclidine | -100% Cutoff | 20  | 0  | 20  | 100% |
|               | -75% Cutoff  | 20  | 0  | 20  | 100% |
|               | -50% Cutoff  | 160 | 0  | 160 | 100% |
|               | -25% Cutoff  | 20  | 2  | 18  | 90%  |
|               | +25% Cutoff  | 20  | 19 | 1   | 95%  |

|                           |              |     |    |     |      |
|---------------------------|--------------|-----|----|-----|------|
|                           | +50% Cutoff  | 40  | 40 | 0   | 100% |
|                           | +75% Cutoff  | 20  | 20 | 0   | 100% |
| MDMA                      | -100% Cutoff | 20  | 0  | 20  | 100% |
|                           | -75% Cutoff  | 20  | 0  | 20  | 100% |
|                           | -50% Cutoff  | 160 | 0  | 160 | 100% |
|                           | -25% Cutoff  | 20  | 2  | 18  | 90%  |
|                           | +25% Cutoff  | 20  | 19 | 1   | 95%  |
|                           | +50% Cutoff  | 40  | 40 | 0   | 100% |
|                           | +75% Cutoff  | 20  | 20 | 0   | 100% |
| Propoxyphene              | -100% Cutoff | 20  | 0  | 20  | 100% |
|                           | -75% Cutoff  | 20  | 0  | 20  | 100% |
|                           | -50% Cutoff  | 160 | 0  | 160 | 100% |
|                           | -25% Cutoff  | 20  | 3  | 17  | 85%  |
|                           | +25% Cutoff  | 20  | 19 | 1   | 95%  |
|                           | +50% Cutoff  | 40  | 40 | 0   | 100% |
|                           | +75% Cutoff  | 20  | 20 | 0   | 100% |
| Tricyclic Antidepressants | -100% Cutoff | 20  | 0  | 20  | 100% |
|                           | -75% Cutoff  | 20  | 0  | 20  | 100% |
|                           | -50% Cutoff  | 160 | 0  | 160 | 100% |
|                           | -25% Cutoff  | 20  | 1  | 19  | 95%  |
|                           | +25% Cutoff  | 20  | 18 | 2   | 90%  |
|                           | +50% Cutoff  | 40  | 40 | 0   | 100% |
|                           | +75% Cutoff  | 20  | 20 | 0   | 100% |

#### Comparison between GC/MS and Lay Person Results for Cup with MOP 300

| Drugs           | % of Cutoff  | Number of samples | Lay person results |                 | The percentage agreement (%) |
|-----------------|--------------|-------------------|--------------------|-----------------|------------------------------|
|                 |              |                   | No. of Positive    | No. of Negative |                              |
| Methamphetamine | -100% Cutoff | 20                | 0                  | 20              | 100%                         |
|                 | -75% Cutoff  | 20                | 0                  | 20              | 100%                         |
|                 | -50% Cutoff  | 160               | 0                  | 160             | 100%                         |
|                 | -25% Cutoff  | 20                | 1                  | 19              | 95%                          |
|                 | +25% Cutoff  | 20                | 19                 | 1               | 95%                          |
|                 | +50% Cutoff  | 40                | 40                 | 0               | 100%                         |
|                 | +75% Cutoff  | 20                | 20                 | 0               | 100%                         |
| Cocaine         | -100% Cutoff | 20                | 0                  | 20              | 100%                         |
|                 | -75% Cutoff  | 20                | 0                  | 20              | 100%                         |
|                 | -50% Cutoff  | 160               | 0                  | 160             | 100%                         |
|                 | -25% Cutoff  | 20                | 1                  | 19              | 95%                          |
|                 | +25% Cutoff  | 20                | 18                 | 2               | 90%                          |

|              |              |     |    |     |      |
|--------------|--------------|-----|----|-----|------|
|              | +50% Cutoff  | 40  | 40 | 0   | 100% |
|              | +75% Cutoff  | 20  | 20 | 0   | 100% |
| Cannabinoids | -100% Cutoff | 20  | 0  | 20  | 100% |
|              | -75% Cutoff  | 20  | 0  | 20  | 100% |
|              | -50% Cutoff  | 160 | 0  | 160 | 100% |
|              | -25% Cutoff  | 20  | 3  | 17  | 85%  |
|              | +25% Cutoff  | 20  | 19 | 1   | 95%  |
|              | +50% Cutoff  | 40  | 40 | 0   | 100% |
|              | +75% Cutoff  | 20  | 20 | 0   | 100% |
| Morphine     | -100% Cutoff | 20  | 0  | 20  | 100% |
|              | -75% Cutoff  | 20  | 0  | 20  | 100% |
|              | -50% Cutoff  | 160 | 0  | 160 | 100% |
|              | -25% Cutoff  | 20  | 1  | 19  | 95%  |
|              | +25% Cutoff  | 20  | 19 | 1   | 95%  |
|              | +50% Cutoff  | 40  | 40 | 0   | 100% |
|              | +75% Cutoff  | 20  | 20 | 0   | 100% |
| Oxazepam     | -100% Cutoff | 20  | 0  | 20  | 100% |
|              | -75% Cutoff  | 20  | 0  | 20  | 100% |
|              | -50% Cutoff  | 160 | 0  | 160 | 100% |
|              | -25% Cutoff  | 20  | 1  | 19  | 95%  |
|              | +25% Cutoff  | 20  | 19 | 1   | 95%  |
|              | +50% Cutoff  | 40  | 40 | 0   | 100% |
|              | +75% Cutoff  | 20  | 20 | 0   | 100% |
| Amphetamine  | -100% Cutoff | 20  | 0  | 20  | 100% |
|              | -75% Cutoff  | 20  | 0  | 20  | 100% |
|              | -50% Cutoff  | 160 | 0  | 160 | 100% |
|              | -25% Cutoff  | 20  | 1  | 19  | 95%  |
|              | +25% Cutoff  | 20  | 18 | 2   | 90%  |
|              | +50% Cutoff  | 40  | 40 | 0   | 100% |
|              | +75% Cutoff  | 20  | 20 | 0   | 100% |
| Oxycodone    | -100% Cutoff | 20  | 0  | 20  | 100% |
|              | -75% Cutoff  | 20  | 0  | 20  | 100% |
|              | -50% Cutoff  | 160 | 0  | 160 | 100% |
|              | -25% Cutoff  | 20  | 1  | 19  | 95%  |
|              | +25% Cutoff  | 20  | 19 | 1   | 95%  |
|              | +50% Cutoff  | 40  | 40 | 0   | 100% |
|              | +75% Cutoff  | 20  | 20 | 0   | 100% |
| Methadone    | -100% Cutoff | 20  | 0  | 20  | 100% |
|              | -75% Cutoff  | 20  | 0  | 20  | 100% |
|              | -50% Cutoff  | 160 | 0  | 160 | 100% |

|               |              |     |    |     |      |
|---------------|--------------|-----|----|-----|------|
|               | -25% Cutoff  | 20  | 1  | 19  | 95%  |
|               | +25% Cutoff  | 20  | 19 | 1   | 95%  |
|               | +50% Cutoff  | 40  | 40 | 0   | 100% |
|               | +75% Cutoff  | 20  | 20 | 0   | 100% |
| MDMA          | -100% Cutoff | 20  | 0  | 20  | 100% |
|               | -75% Cutoff  | 20  | 0  | 20  | 100% |
|               | -50% Cutoff  | 160 | 0  | 160 | 100% |
|               | -25% Cutoff  | 20  | 2  | 18  | 90%  |
|               | +25% Cutoff  | 20  | 19 | 1   | 95%  |
|               | +50% Cutoff  | 40  | 40 | 0   | 100% |
|               | +75% Cutoff  | 20  | 20 | 0   | 100% |
| Secobarbital  | -100% Cutoff | 20  | 0  | 20  | 100% |
|               | -75% Cutoff  | 20  | 0  | 20  | 100% |
|               | -50% Cutoff  | 160 | 0  | 160 | 100% |
|               | -25% Cutoff  | 20  | 1  | 19  | 95%  |
|               | +25% Cutoff  | 20  | 19 | 1   | 95%  |
|               | +50% Cutoff  | 40  | 40 | 0   | 100% |
|               | +75% Cutoff  | 20  | 20 | 0   | 100% |
| Buprenorphine | -100% Cutoff | 20  | 0  | 20  | 100% |
|               | -75% Cutoff  | 20  | 0  | 20  | 100% |
|               | -50% Cutoff  | 160 | 0  | 160 | 100% |
|               | -25% Cutoff  | 20  | 1  | 19  | 95%  |
|               | +25% Cutoff  | 20  | 18 | 2   | 90%  |
|               | +50% Cutoff  | 40  | 40 | 0   | 100% |
|               | +75% Cutoff  | 20  | 20 | 0   | 100% |
| Phencyclidine | -100% Cutoff | 20  | 0  | 20  | 100% |
|               | -75% Cutoff  | 20  | 0  | 20  | 100% |
|               | -50% Cutoff  | 160 | 0  | 160 | 100% |
|               | -25% Cutoff  | 20  | 2  | 18  | 90%  |
|               | +25% Cutoff  | 20  | 19 | 1   | 95%  |
|               | +50% Cutoff  | 40  | 40 | 0   | 100% |
|               | +75% Cutoff  | 20  | 20 | 0   | 100% |
| Propoxyphene  | -100% Cutoff | 20  | 0  | 20  | 100% |
|               | -75% Cutoff  | 20  | 0  | 20  | 100% |
|               | -50% Cutoff  | 160 | 0  | 160 | 100% |
|               | -25% Cutoff  | 20  | 1  | 19  | 95%  |
|               | +25% Cutoff  | 20  | 18 | 2   | 90%  |
|               | +50% Cutoff  | 40  | 40 | 0   | 100% |
|               | +75% Cutoff  | 20  | 20 | 0   | 100% |
|               | -100% Cutoff | 20  | 0  | 20  | 100% |

|                           |             |     |    |     |      |
|---------------------------|-------------|-----|----|-----|------|
| Tricyclic Antidepressants | -75% Cutoff | 20  | 0  | 20  | 100% |
|                           | -50% Cutoff | 160 | 0  | 160 | 100% |
|                           | -25% Cutoff | 20  | 2  | 18  | 90%  |
|                           | +25% Cutoff | 20  | 18 | 2   | 90%  |
|                           | +50% Cutoff | 40  | 40 | 0   | 100% |
|                           | +75% Cutoff | 20  | 20 | 0   | 100% |

**Comparison between GC/MS and Lay Person Results for Cup with MOP 2000**

| Drugs           | % of Cutoff  | Number of samples | Lay person results |                 | The percentage agreement (%) |
|-----------------|--------------|-------------------|--------------------|-----------------|------------------------------|
|                 |              |                   | No. of Positive    | No. of Negative |                              |
| Methamphetamine | -100% Cutoff | 20                | 0                  | 20              | 100%                         |
|                 | -75% Cutoff  | 20                | 0                  | 20              | 100%                         |
|                 | -50% Cutoff  | 160               | 0                  | 160             | 100%                         |
|                 | -25% Cutoff  | 20                | 1                  | 19              | 95%                          |
|                 | +25% Cutoff  | 20                | 17                 | 3               | 85%                          |
|                 | +50% Cutoff  | 40                | 40                 | 0               | 100%                         |
|                 | +75% Cutoff  | 20                | 20                 | 0               | 100%                         |
| Cocaine         | -100% Cutoff | 20                | 0                  | 20              | 100%                         |
|                 | -75% Cutoff  | 20                | 0                  | 20              | 100%                         |
|                 | -50% Cutoff  | 160               | 0                  | 160             | 100%                         |
|                 | -25% Cutoff  | 20                | 1                  | 19              | 95%                          |
|                 | +25% Cutoff  | 20                | 18                 | 2               | 90%                          |
|                 | +50% Cutoff  | 40                | 40                 | 0               | 100%                         |
|                 | +75% Cutoff  | 20                | 20                 | 0               | 100%                         |
| Cannabinoids    | -100% Cutoff | 20                | 0                  | 20              | 100%                         |
|                 | -75% Cutoff  | 20                | 0                  | 20              | 100%                         |
|                 | -50% Cutoff  | 160               | 0                  | 160             | 100%                         |
|                 | -25% Cutoff  | 20                | 2                  | 18              | 90%                          |
|                 | +25% Cutoff  | 20                | 19                 | 1               | 95%                          |
|                 | +50% Cutoff  | 40                | 40                 | 0               | 100%                         |
|                 | +75% Cutoff  | 20                | 20                 | 0               | 100%                         |
| Morphine        | -100% Cutoff | 20                | 0                  | 20              | 100%                         |
|                 | -75% Cutoff  | 20                | 0                  | 20              | 100%                         |
|                 | -50% Cutoff  | 160               | 0                  | 160             | 100%                         |
|                 | -25% Cutoff  | 20                | 1                  | 19              | 95%                          |
|                 | +25% Cutoff  | 20                | 19                 | 1               | 95%                          |
|                 | +50% Cutoff  | 40                | 40                 | 0               | 100%                         |
|                 | +75% Cutoff  | 20                | 20                 | 0               | 100%                         |
| Oxazepam        | -100% Cutoff | 20                | 0                  | 20              | 100%                         |

|              |              |     |    |     |      |
|--------------|--------------|-----|----|-----|------|
|              | -75% Cutoff  | 20  | 0  | 20  | 100% |
|              | -50% Cutoff  | 160 | 0  | 160 | 100% |
|              | -25% Cutoff  | 20  | 2  | 18  | 90%  |
|              | +25% Cutoff  | 20  | 19 | 1   | 95%  |
|              | +50% Cutoff  | 40  | 40 | 0   | 100% |
|              | +75% Cutoff  | 20  | 20 | 0   | 100% |
| Amphetamine  | -100% Cutoff | 20  | 0  | 20  | 100% |
|              | -75% Cutoff  | 20  | 0  | 20  | 100% |
|              | -50% Cutoff  | 160 | 0  | 160 | 100% |
|              | -25% Cutoff  | 20  | 1  | 19  | 95%  |
|              | +25% Cutoff  | 20  | 19 | 1   | 95%  |
|              | +50% Cutoff  | 40  | 40 | 0   | 100% |
| Oxycodone    | +75% Cutoff  | 20  | 20 | 0   | 100% |
|              | -100% Cutoff | 20  | 0  | 20  | 100% |
|              | -75% Cutoff  | 20  | 0  | 20  | 100% |
|              | -50% Cutoff  | 160 | 0  | 160 | 100% |
|              | -25% Cutoff  | 20  | 1  | 19  | 95%  |
|              | +25% Cutoff  | 20  | 19 | 1   | 95%  |
| Methadone    | +50% Cutoff  | 40  | 40 | 0   | 100% |
|              | +75% Cutoff  | 20  | 20 | 0   | 100% |
|              | -100% Cutoff | 20  | 0  | 20  | 100% |
|              | -75% Cutoff  | 20  | 0  | 20  | 100% |
|              | -50% Cutoff  | 160 | 0  | 160 | 100% |
|              | -25% Cutoff  | 20  | 2  | 18  | 90%  |
| MDMA         | +25% Cutoff  | 20  | 19 | 1   | 95%  |
|              | +50% Cutoff  | 40  | 40 | 0   | 100% |
|              | +75% Cutoff  | 20  | 20 | 0   | 100% |
|              | -100% Cutoff | 20  | 0  | 20  | 100% |
|              | -75% Cutoff  | 20  | 0  | 20  | 100% |
|              | -50% Cutoff  | 160 | 0  | 160 | 100% |
| Secobarbital | -25% Cutoff  | 20  | 1  | 19  | 95%  |
|              | +25% Cutoff  | 20  | 18 | 2   | 90%  |
|              | +50% Cutoff  | 40  | 40 | 0   | 100% |
|              | -100% Cutoff | 20  | 0  | 20  | 100% |
|              | -75% Cutoff  | 20  | 0  | 20  | 100% |
|              | -50% Cutoff  | 160 | 0  | 160 | 100% |

|                           |              |     |    |     |      |
|---------------------------|--------------|-----|----|-----|------|
|                           | +75% Cutoff  | 20  | 20 | 0   | 100% |
| Buprenorphine             | -100% Cutoff | 20  | 0  | 20  | 100% |
|                           | -75% Cutoff  | 20  | 0  | 20  | 100% |
|                           | -50% Cutoff  | 160 | 0  | 160 | 100% |
|                           | -25% Cutoff  | 20  | 2  | 18  | 90%  |
|                           | +25% Cutoff  | 20  | 18 | 2   | 90%  |
|                           | +50% Cutoff  | 40  | 40 | 0   | 100% |
|                           | +75% Cutoff  | 20  | 20 | 0   | 100% |
| Phencyclidine             | -100% Cutoff | 20  | 0  | 20  | 100% |
|                           | -75% Cutoff  | 20  | 0  | 20  | 100% |
|                           | -50% Cutoff  | 160 | 0  | 160 | 100% |
|                           | -25% Cutoff  | 20  | 2  | 18  | 90%  |
|                           | +25% Cutoff  | 20  | 19 | 1   | 95%  |
|                           | +50% Cutoff  | 40  | 40 | 0   | 100% |
|                           | +75% Cutoff  | 20  | 20 | 0   | 100% |
| Propoxyphene              | -100% Cutoff | 20  | 0  | 20  | 100% |
|                           | -75% Cutoff  | 20  | 0  | 20  | 100% |
|                           | -50% Cutoff  | 160 | 0  | 160 | 100% |
|                           | -25% Cutoff  | 20  | 1  | 19  | 95%  |
|                           | +25% Cutoff  | 20  | 18 | 2   | 90%  |
|                           | +50% Cutoff  | 40  | 40 | 0   | 100% |
|                           | +75% Cutoff  | 20  | 20 | 0   | 100% |
| Tricyclic Antidepressants | -100% Cutoff | 20  | 0  | 20  | 100% |
|                           | -75% Cutoff  | 20  | 0  | 20  | 100% |
|                           | -50% Cutoff  | 160 | 0  | 160 | 100% |
|                           | -25% Cutoff  | 20  | 2  | 18  | 90%  |
|                           | +25% Cutoff  | 20  | 19 | 1   | 95%  |
|                           | +50% Cutoff  | 40  | 40 | 0   | 100% |
|                           | +75% Cutoff  | 20  | 20 | 0   | 100% |

Lay-users were also given surveys on the ease of understanding the package insert instructions. All lay users indicated that the device instructions can be easily followed. A Flesch-Kincaid reading analysis was performed on each package insert and the scores revealed a reading Grade Level of 7.

## 11. Conclusion

Verification studies were conducted in support of the modification to have a multi-drug test cup and test card test, including interference studies and a lay-user study. Based on the test principle and acceptable performance characteristics, it's concluded that the Healgen Multi-Drug Urine Test Cup, and Healgen Multi-Drug Urine Test Dip Card are substantially equivalent to the predicates.