Preliminary Identification of Suspected Heroin Samples by NarcoPouch Field Test Panel

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Abstract

Currently, the Las Vegas Metropolitan Police Department (LVMPD) police officers are using test kits called NarcoPouches manufactured by ODV, Inc. to preliminarily field test evidence believed to be cocaine, marijuana or methamphetamine. Due to the increasing abundance of evidence submissions believed to be diacetylmorphine, also known as heroin, a study to presumptively field test suspected heroin seizure samples was performed using Marquis, Mecke, and Froehde reagents. Samples with similar appearance to heroin were tested utilizing these reagents in commercially prepared field test kits known as the NarcoPouch manufactured by ODV, Inc. and equivalent reagents prepared by the LVMPD Forensic Laboratory. Based on the data obtained, the LVMPD Forensic Laboratory has determined that all three reagents contained in the ODV preliminary field test kits should be used for the testing of suspected black/brown heroin to ensure accuracy and specificity. It is not recommended that suspected white heroin is tested using this method since some white and off-white non-heroin substances tested gave similar color test results as heroin.

Purpose

The instances in which heroin was identified by the LVMPD Forensic Laboratory have been trending upward since 2005 (Figure 1). In 2005 there were 75 cases in which heroin was reported by the LVMPD Forensic Laboratory and in 2013 there were a total of 431 cases in which heroin was reported by the LVMPD Forensic Laboratory.

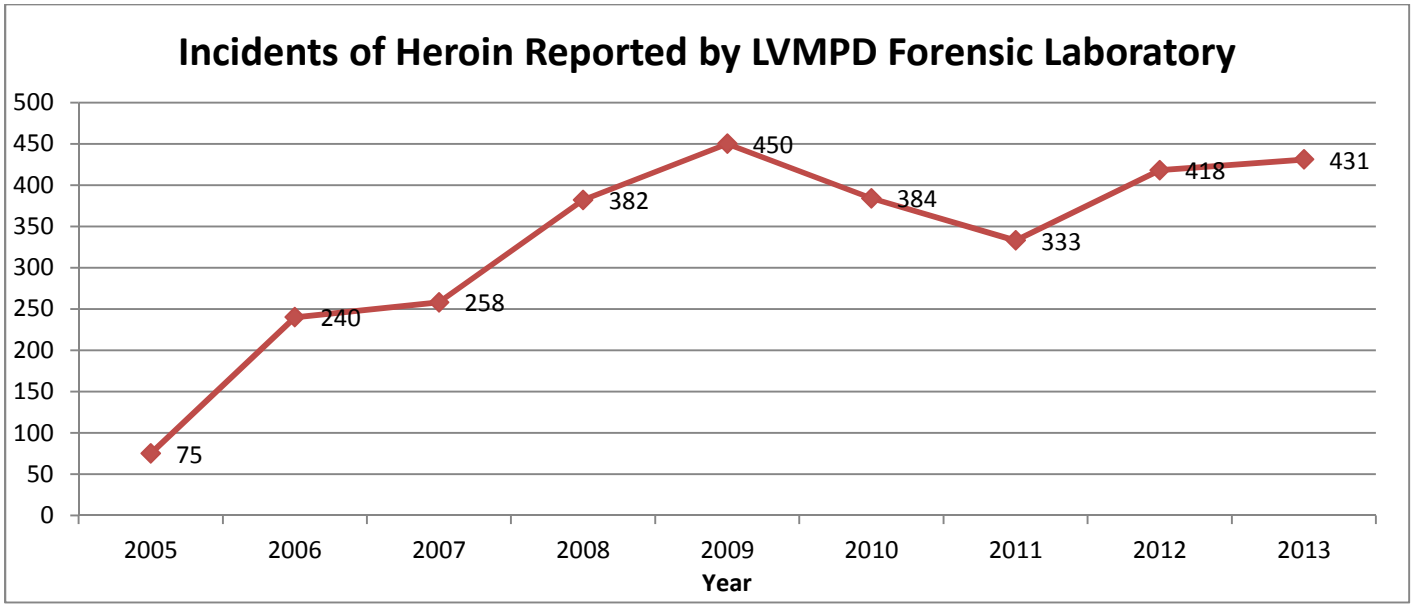

Figure 1: *Upward trend in the number of cases reported as heroin by the LVMPD Forensic Laboratory*

According to the DEA Office of Diversion Control's 2013 annual report (published in August 2014) heroin is listed as the fourth most common drug encountered in the United States, only behind cannabis/THC, cocaine and methamphetamine. In the same report, heroin is listed as the third most

common drug encountered in the western region of the United States, with methamphetamine and cannabis/THC being the only drugs more prominent. The National Forensic Laboratory Information System (NFLIS), a program which monitors and tracks drugs of abuse and trafficking nationwide, has shown a general increase of heroin from 2005 through 2013. The total analyzed drug items reported as heroin increased nationally from 2005 to 2013 from 5.00% to 9.85% (Figure 2). During the same time period, the total analyzed drug items reported as heroin in the western region of the United States increased from 3.52% to 9.31% (Figure 2) [1-9].

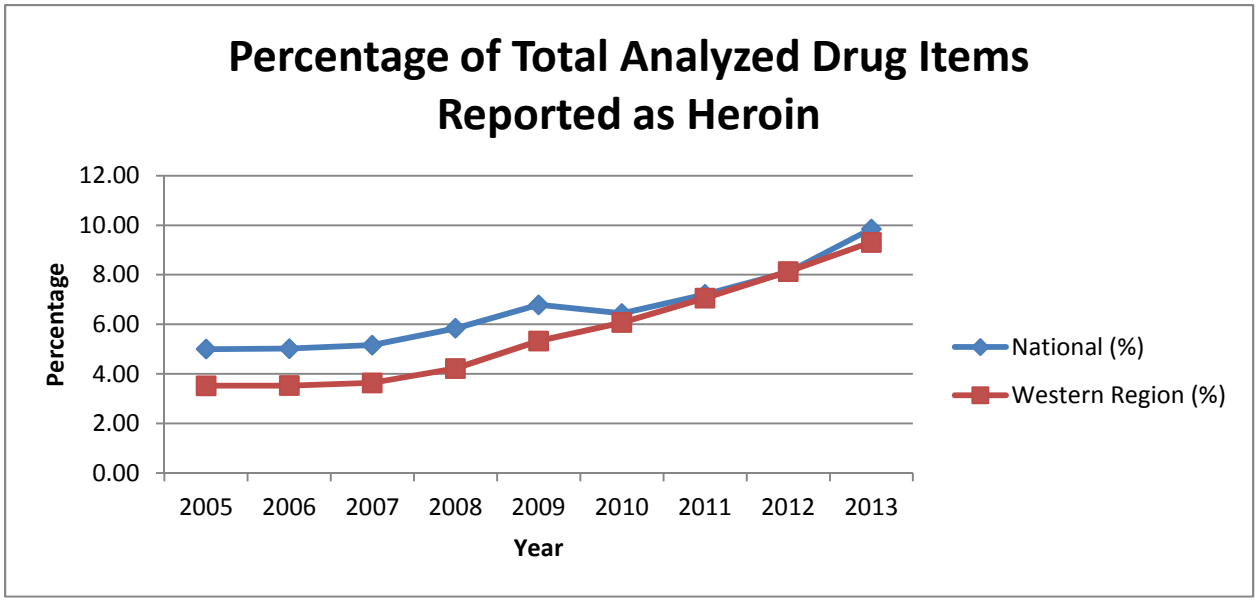

Figure 2: *Percentage of total analyzed drug items reported as heroin to NFLIS, by year*

On April 6, 2014 the Washington Post stated some potential reasons heroin is on the rise in the United States is due to stricter controls on prescription pain killers and the decreased profit margin from the sale of marijuana. As a result, Mexican cartels are reportedly increasing their opium production by converting marijuana fields to poppy fields to better meet the increasing demand for heroin and make up for the marijuana profit loss [10]. Due to the increasing incidents of reported heroin here in southern Nevada, combined with an increase in backlogged cases, a method was developed for the preliminary field testing of suspected heroin samples. The implementation of a heroin field test procedure:

- Will allow for real time preliminary results of suspected black/brown heroin samples in the field by officers
- Will allow the District Attorney's office to file charges in a timely manner
- Will reduce the number of samples submitted to the LVMPD Forensic Laboratory for analysis
- May reduce the number of heroin cases proceeding to trial due to negotiations based on the result of the field test

Materials and Methods

Data for this study was gathered by testing a variety of substances which resemble the visual appearance of white and black/brown heroin. Samples were obtained from various sources including commercial stores and chemical supply companies such as Alfa Aesar, Fluka, Grace, Lipomed, Mallinckrodt, Merck, MP Biomedicals, Parke Davis, Sigma-Aldrich, Steraloids, and United States Pharmacopeia (USP) as well as suspected heroin casework samples submitted by LVMPD officers and confirmed as heroin by the LVMPD Forensic Laboratory. Data was collected by testing samples using laboratory prepared color test reagents in clean spot plates, which contain multiple indentations called wells. Samples were also tested using NarcoPouch, a self-contained field testing kit manufactured by ODV, Inc. (Figure 3). The NarcoPouches examined for this study were kit #902 (Marquis reagent, contains 1 ampoule), kit #924 (Mecke reagent, contains 2 ampoules), and kit #926 (Froehde reagent, labeled Talwin/Pentazocine Test, contains 1 ampoule).

Figure 3: *#902 Marquis NarcoPouch, #924 Mecke NarcoPouch, and #926 Froehde NarcoPouch*

These three color test reagents have been used for the preliminary identification of heroin for decades. The United Nations Office on Drugs and Crime published a paper in 1953 titled, "The Analysis of Heroin", in which several color tests, including Marquis, Mecke, and Froehde reagents were collectively used to test suspected heroin samples [11]. These three color tests are still used by forensic laboratories across the United States for the preliminary identification of heroin, as indicated by a publication by the National Institute of Justice [12]. As a result, these three reagents (Marquis, Mecke, and Froehde reagent) were examined for the preliminary analysis of heroin.

Two forms of heroin were analyzed in this study, white heroin and black tar heroin. White heroin is a more pure form; it is off-white in color and has a crystalline or powder appearance. Black tar heroin is a crude extract that is often black to brown in color and has the consistency of sticky tar or hard rocks. Although white heroin has been seen in casework samples, black tar heroin is overwhelmingly the most common form of heroin seized in southern Nevada.

White heroin (reference material obtained from Sigma lot# 091M4628VA and one analyzed casework sample[1]) and black tar heroin (obtained from 50 analyzed casework samples[2]) were used during the course of this study. Prior to use, each sample of heroin used for this study was conclusively identified using an Agilent Technologies gas chromatograph/mass spectrometer (GCMS), model numbers 7890A and 5975C.

Color tests were performed on the white heroin using laboratory prepared color test reagents. A small amount of white heroin was placed in three separate wells of a new, clean spot plate. Two to three drops of Marquis reagent were added to the sample in the first well, two to three drops of Mecke reagent were added to the sample in the second well and two to three drops of Froehde reagent were added to the sample in the third well. As seen in Figure 4, the colors observed after the addition of the Marquis, Mecke, and Froehde reagent to white heroin were purple, bluish/green, and purple, respectively. The resulting colors were recorded for each reagent (Appendix 1).

Figure 4: *Color results of white heroin: Marquis – purple, Mecke – bluish/green, and Froehde – purple using laboratory prepared chemicals*

Testing was then performed on white heroin using NarcoPouches. A small amount of known white heroin (about the size of a match head) was added to the NarcoPouch and then the pouch was properly closed. The glass ampoule(s) inside the NarcoPouch were broken in sequential order according to the manufacturer's instructions, releasing pre-measured reagent(s)[13]. The NarcoPouch was agitated to promote mixing of the reagent and sample. The colors observed after testing the white heroin with the Marquis, Mecke, and Froehde NarcoPouch were purple, bluish/green, and purple,

[1] from event number ending in 1776

[2] from event numbers ending in 1984, 2127, 1692, 2338, 2086, 2681, 2902, 1443, 2811, 2426, 2518, 2521, 2745, 2916, 3192, 2498, 1144, 3338, 2487, 3110, 2612, 3185, 3049, 0315, 1956, 2025, 2427, 3229, 3410, 2847, 2684, 1728, 2320, 2846, 5102, 0227, 4316, 2987, 3007, 4026, 3740, 1665, 1261, 0868, 2387, 1086, 2956, 1125, 1515 and one composite sample from event numbers ending in 2598, 3474 and 2365

respectively (Figure 5). These results, recorded in Appendix 1, are identical to those seen with the laboratory prepared reagents, as described above.

Figure 5: *Color results of white heroin: Marquis – purple, Mecke – bluish/green, and Froehde – purple using NarcoPouches*

The same process was repeated for the analysis of conclusively identified black tar heroin using both the laboratory prepared color test reagents and NarcoPouches. The colors observed after the addition of laboratory prepared Marquis, Mecke, and Froehde reagent to black tar heroin were purple, bluish/green, and purple, respectively (Figure 6). The colors observed after testing the black tar heroin with the Marquis, Mecke, and Froehde NarcoPouch were purple, green, and purple, respectively (Figure 7). The results observed after testing the conclusively identified black tar heroin using laboratory prepared reagents and NarcoPouches were recorded in Appendix 2.

Figure 6: *Color results of black tar heroin: Marquis – purple, Mecke – bluish/green and Froehde – purple using laboratory prepared chemicals*

Figure 7: *Color results of black tar heroin: Marquis – purple, Mecke – green and Froehde – purple using NarcoPouch*

To test the specificity of the field test reagents used for heroin, other substances similar in physical appearance to heroin were tested with the laboratory prepared color test reagents and NarcoPouches (Marquis, Mecke, and Froehde). The known white heroin and black tar heroin were used as positive controls to compare color results. Substances that yielded similar results to heroin when tested with laboratory prepared Marquis reagent were subjected to further testing. No further testing was performed on substances that did not produce similar results to heroin when tested with laboratory prepared Marquis reagent.

The recipes used by the LVMPD Forensic Laboratory for Marquis, Mecke, and Froehde reagents are similar recipes outlined by Clarke's Analysis of Drugs and Poisons [14] and/or the recipes defined by the National Institute of Justice [12]. The recipes used by ODV, Inc. for the NarcoPouches are proprietary in nature and thus the exact components are not available. However, by using the Material Safety Data Sheet for the specific NarcoPouch, the major constituents can be deduced [15, 16, 17]. The Marquis, Mecke, and Froehde recipes are similar among the LVMPD Forensic Laboratory, Clarke's Analysis of Drugs and Poisons, National Institute of Justice, and the ODV, Inc. NarcoPouches (Table 1). Because the recipes of Marquis, Mecke, and Froehde are similar, they are widely accepted within the forensic community for the presumptive analysis of suspected heroin and a correlation of results can be made between the LVMPD prepared reagents and the ODV, Inc. NarcoPouches.

Results and Conclusions

A total of 388 different substances (288 off-white and 100 not off-white) from a combination of reference materials and commonly encountered items were tested for this study using laboratory prepared color test reagents (Appendix 1-2). Based on the results from the materials tested using

laboratory prepared color tests reagents, 64 of the 388 substances were also tested with the NarcoPouch kits.

Marquis Reagent Components	
LVMPD Forensic Laboratory	1 mL formaldehyde (37%) 100 mL concentrated sulfuric acid
Clarke's Analysis of Drugs and Poisons	1 mL formaldehyde (40%) 100 mL concentrated sulfuric acid
National Institute of Justice	5 mL formaldehyde (40%) 100 mL concentrated sulfuric acid
ODV, Inc. NarcoPouch	1-5% formaldehyde (37%) > 95% concentrated sulfuric acid
Mecke Reagent Components	
LVMPD Forensic Laboratory	1.0 g selenous acid 100 mL concentrated sulfuric acid
Clarke's Analysis of Drugs and Poisons	1.0 g selenious acid 100 mL concentrated sulfuric acid
National Institute of Justice	1.0 g selenious acid 100 mL concentrated sulfuric acid
ODV, Inc. NarcoPouch	Left Ampoule: > 95% sulfuric acid Right Ampoule: < 1% selenious acid Right Ampoule: > 95% sulfuric acid
Froehde Reagent Components	
LVMPD Forensic Laboratory	0.5 g molybdic acid 100 mL concentrated sulfuric acid
Clarke's Analysis of Drugs and Poisons	1.0 g molybdic acid or sodium molybdate 100 mL concentrated sulfuric acid
National Institute of Justice	0.5 g molybdic acid or sodium molybdate 100 mL concentrated sulfuric acid
ODV, Inc. NarcoPouch	< 5% ammonium molybdate > 95% sulfuric acid

Table 1: *Recipes of Marquis, Mecke, and Froehde reagents as defined by LVMPD Forensic Laboratory, ODV, Inc. NarcoPouch, Clarke's Analysis of Drugs and Poisons, and National Institute of Justice. (Note: Selenous acid is a synonym for selenious acid)*

Four non-heroin substances, which visually resembled black tar heroin, gave a Marquis NarcoPouch colør result similar to heroin. A concentrated amount (two to four times greater than directed by the manufacturer) of these four non-heroin substances were further tested using Mecke and Froehde NarcoPouch. The four substances (apømorphine, ergonovine, Fast Blue B salt, and lysergic acid) did not produce similar color results as heroin with the additional two NarcoPouches (Appendix 2).

Common materials used to dilute heroin street samples were tested and all gave negative (-) results using laboratory prepared Marquis reagent. According to the Drug Identification Bible 2012 edition, coffee, chocolate milk powder, cocoa mix, brown sugar, and molasses are common diluents added to black tar heroin at the street level [18].

Heroin is produced by converting morphine to heroin. The incomplete conversion of morphine to heroin produces a byproduct called 3-monoacetylmorphine (3-MAM) and is rarely detected in high amounts. Over a period of time, heroin may chemically breakdown to 6-monoacetylmorphine (6-MAM) from factors like temperature or storage conditions. The DEA Special Testing and Research Laboratory located in Dulles, Virginia was contacted for this study. They indicated that they do not recall identifying 3-MAM or 6-MAM without the presence of heroin in an illicit sample. Every sample of heroin will have some level of 3-MAM and 6-MAM, according to the DEA Special Testing and Research Laboratory. A reference material of solid 3-MAM (Cayman Chemical lot# 0458998-5), off-white in color, was obtained for this study, but it was found to contain heroin thus was not utilized. A reference material of solid 6-MAM (Lipomed lot# 43.1B7.1), off-white in color, was tested using laboratory prepared reagents and NarcoPouch reagents (Marquis, Mecke, and Froehde) with positive (+) results recorded (Appendix 1). Since both 3-MAM reference material and 6-MAM reference material are off-white in color and the DEA Special Testing and Research Laboratory doesn't recall identifying either compound alone in illicit suspected heroin sample submissions, it is unlikely to see either compound without also seeing heroin in an illicit sample that is black to brown in color.

In the case of this heroin field test study, a false positive is a test result that incorrectly indicates a sample presumptively contains heroin, when it does not contain heroin. Seven off-white substances evaluated in this study yielded similar color results as heroin using Marquis, Mecke and Froehde NarcoPouches: buprenørphine HCl, dihydromorphine, 6-monoacetylmorphine, morphine sulfate, nalbuphine, nalorphine HCl, and normorphine HCl. The preceding compounds all have chemical base structures very similar to heroin, which is the likely reason for the similarities in color test results compared to the heroin controls. Based on this study it is <u>not</u> recommended to use the NarcoPouch series to test for suspected heroin samples that are white to off-white in appearance due to incidents of false positive results in those substances tested above that are most commonly encountered in a white to off-white form. If a white to off-white substance is encountered in the field and heroin is suspected, the sample(s) should be sent to the LVMPD Forensic Laboratory for analysis. In addition, no liquid samples should be tested using the NarcoPouches per the manufacturer's recommendations as the NarcoPouches are not designed to test liquid samples.

One black/brown substance that was evaluated for this study, ergonovine, produced a similar color result as heroin using Marquis and Mecke NarcoPouch, but the Froehde NarcoPouch produced a different color result than heroin. Due to the test results of this compound, it is determined that Marquis, Mecke, and Froehde NarcoPouch will be used to presumptively test samples believed to contain heroin that are black to brown in color.

All other non-heroin substances tested for this study that were similar in appearance to black/brown heroin did not give positive (+) results for heroin when tested with all three NarcoPouches.

It has been determined by the LVMPD Forensic Laboratory that using all three Marquis, Mecke, and Froehde NarcoPouches increases the specificity of the testing process and can differentiate dark colored heroin samples from other substances that are similar in appearance. It is mandatory that officers in the field use all three NarcoPouch kits (ODV, Inc. 902, 924 and 926) to test for suspected heroin samples that are black to brown in appearance. Officers will be trained to use a field checklist that will prompt them to start with Marquis NarcoPouch (ODV, Inc. 902) and progress from there depending upon their results. Based on the results from testing conclusively identified black tar heroin for this study, a sample is considered positive (+) for heroin if: Marquis NarcoPouch turns a purple color within 90 seconds after breaking the ampoule with agitation, Mecke NarcoPouch turns a green color in within 30 seconds after breaking the second ampoule with agitation, and Froehde NarcoPouch turns a purple color in within 10 seconds upon breaking the ampoule with agitation. In the case of this heroin field test study, a false negative is a test result that incorrectly indicates a sample presumptively is absent of heroin, when it does contain heroin. There were five black tar heroin casework samples tested for this study that would be presumptively negative for heroin by the parameters listed above (all five passed Marquis and Froehde NarcoPouch tests criteria, but failed the Mecke NarcoPouch test). These five are false negatives and, with the protocol that will be set up, would have been sent to the LVMPD Forensic Laboratory for conclusive analysis. Additional precautions will be used in the field to prevent misinterpretation of results including a field test checklist and training for officers with hands on competency test prior to use in the field. Each completed test will cost approximately $5.00 and include all three test kits, field test checklist and a sampling device. LVMPD officers will be trained to send all brown/black samples that produce a negative, unclear or inconclusive test result to any part of the three part test to the LVMPD Forensic Laboratory for further analysis. Additionally, all submissions will be conclusively analyzed by the LVMPD Forensic Laboratory if the case will be tried at the District Court level or higher.

Appendix 1: Substances tested that were white or off-white

Compound	Compound Manuf/Lot #	Marquis Result	Mecke Result	Froehde Result	Results
Heroin (reference material)*	Sigma #091M628VA	Purple	Bluish/Green	Purple	+
Heroin (reference material)	Sigma #091M628VA	Purple	Bluish/Green	Purple	+
Heroin (casework sample)*	Event # ending in 1776	Red to Purple (55 seconds)	Green (10 seconds)	Purple (5 seconds)	+
Heroin (casework sample)	Event # ending in 1776	Purple	Green/blue	Purple	+
6-monoacetylmorphine*	Lipomed #43.1B7.1	Purple (25 seconds)	Light Green (30 seconds)	Purple (5 seconds)	+
6-monoacetylmorphine	Lipomed #43.1B7.1	Purple	Blue/Green	Purple	+
Dihydromorphine*	Applied Science #3A	Light purple	Light blue to grey	Light purple/pink	+
Dihydromorphine	Applied Science #3A	Light Purple	Blue	Purple	+
3,4-MDEA	Sigma #072K4087	Brown/black with purple streaks	Dark green/blue	Brown/black with purple streaks	+
Alphaprodine HCl	USPC #1275-F	Red to dark red	Dark yellow to green	Faint purple/red	+
Buprenorphine HCl*	Grace #498	Purple	Light green	Purple	+
Guaifenesin	Sigma #73H0827	Red to purple	Green/blue to purple	Green to slow purple	+
Buprenorphine HCl	Grace #498	Light Purple	Green	Purple	+
Morphine sulfate	USP #J	Purple	Blue/Green	Purple	+
Morphine sulfate*	USP #J	Purple	Light blue/green	Purple	+
Morphine-3-β-D-glucuronide	Sigma #51F3831	Purple	Green/blue	Purple	+
Nalbuphine*	Sigma #90K1612	Purple	Green	Purple	+
Nalorphine HCl*	Sigma #124F-0744	Purple	Light green	Purple	+
Nalorphine HCl	Sigma #124F-0744	Purple	Green	Purple	+
Normorphine HCl	Applied Science #1	Purple	Yellow to Green	Purple	+
Normorphine HCl*	Applied Science #1	Light purple	Light green	Purple	+
Morphine HCl trihydrate	Grace #512	Purple	Dark green	Purple	+
Noscapine Alkaloid*	Alltech #1016	Light purple	Light green	Green	–
Pentazocine, base*	Applied #392	Light purple	Light green	Blue	–
6-acetylcodeine	Grace #1007B	Purple	Blue/Green	Light green	–
Codeine	Sigma #38F-0398	Purple	Blue/Green	Light green	–
Codeine*	Sigma #38F-0398	Purple	Bluish green	Light green	–
Hydrocodone bitartrate salt	Sigma #047F0128V	Light Purple	Blue/Green	Light yellow	–
Dihydrocodeine Bitartrate	Alltech #410	Purple	Blue/Green	Yellow/light green	–
Oxycodone	Sigma #111K1450	Yellow/tan with purple streaks	Tan with green streaks	Yellow	–
Guaifenesin*	Sigma #73H0827	Purple	Purple	Dark green to purple	–
Propoxyphene, d-*	Sigma #49F01421	Dark purple	Light brown	Purple/brown	–
Hydromorphone	Sigma #69H0625	Yellow/orange to red/purple	Brown	Purple	–
Levopropoxyphene napsylate	USPC #GA	Purple	Tan/Light Brown	Light Purple	–
Levopropoxyphene napsylate*	USPC #GA	Purple	Light pink/peach	Purple	–
Methocarbamol*	Fluka #021M0123V	Purple	Faint red	Green to grey to purple	–
Noscapine Alkaloid	Alltech #1016	Purple	Blue/green to grey upon standing	Blue/green with yellow streaks	–
Noscapine HCl hydrate*	Fluka #029K1465	Purple	Light green/yellow to brown/red	Greenish brown to brown	–
Noscapine HCl hydrate	Fluka #029K1465	Yellow to purple	Yellow to blue/green to brown	Yellow to green	–
Papaverine	Sigma #1130-1480A	Faint yellow to purple upon standing	Yellow/dark green/black	Green/blue	–
Papaverine*	Sigma #113C-1480A	Very slow faint pink	Dark green to grey/black	Green	–
Pentazocine, base	Applied #392	Purple	Tan	Blue	–
Propoxyphene, d-	Sigma #49F01421	Dark purple (immediate)	Brown	Tan to black with yellow streaks	–
Methocarbamol	Fluka #021M0123V	Red to purple	Flashes green to purple/red	Green to slow purple	–
6-acetylcodeine*	Grace #1007B and 1007A	Slow purple	Bluish green	Faint light green	–
Phenergan HCl (Promethazine HCl)	Wyeth Labs #F-693117	Dark pink/light purple	Dark red to black with green streaks	Dark red	–
Cyclobenzaprine*	Sigma #79F1009	Dark red/purple	Red	Red	–
Cyclobenzaprine	Sigma #79F1009	Dark red/purple	Dark red/purple	Red	–
Chlorpromazine*	Applied Scientific #3191	Faint pink/purple	Dark red to maroon to brown	Dark red	–
Dextromethorphan HBr*	Alfa Aesar #F20X001	Flash purple to brown/black	Light green/yellow	Yellow	–
D-α-N-Norpropoxyphene Maleate*	Alltech #3	Purple	Pink/light red	Pink	–
D-α-N-Norpropoxyphene Maleate	Alltech #3	Purple to black	Brown	Reddish brown	–
Dextromethorphan HBr	Alfa Aesar #F20X001	Flash purple to black	Dark yellow to brown	Yellow/green	–
Fluoxetine*	Sigma #93H04761	Light red	Peach	Light orange/peach	–

*sample tested by NarcoPouch

Appendix 1: Substances tested that were white or off-white

Compound	Compound Manuf/Lot #	Marquis Result	Mecke Result	Froehde Result	Results
Amitriptyline HCl	Sigma #109F0330	Red to dark red/brown	Orange/red to dark red	Orange/red to dark red	–
(R)-(-)-phenylephrine HCl*	Sigma #116K1492	Red	Light red/brown	Light blue to grey	–
(R)-(-)-phenylephrine HCl	Sigma #116K1492	Light peach to red	Yellow to brown to purple	Blue	–
L-α-acetylmethadol HCl	Applied Science #1A	Red to dark red to brown	Light yellow with brown specks	Light brown/purple	–
Methapyrilene HCl*	Sigma #037F09291	Orange to dark red/brown	Dark purple/maroon	Brown	–
Methapyrilene HCl	Sigma #037F09291	Orange to dark red/purple to black	Purple to black	Red to black	–
Tamoxifen Citrate	USPC #G-1	Orange/yellow/dark red	Yellow to dark brown	Yellow/orange to green upon standing	–
Nalbuphine	Sigma #90K1612	Yellow to red	Yellow to brown	Purple	–
Ethylmorphine HCl	Mallinckrodt #E106057	Yellow to slow purple	Yellow to Dark Green	Yellow to Green	–
Noroxymorphone	USP #0675-F	Yellow to orange to red/purple	Yellow/brown	Purple	–
Oxymorphone	Endo #71-418-1	Yellow to orange to purple	Tan/brown	Purple	–
Phenergan HCl (Promethazine HCl)*	Wyeth Labs #F-693117	Light pink	Dark red to brown	Red to dark red to brown	–
Methandrostenolone	Sigma #67F07701	Red	Red to brown	Red	–
Methandrostenolone*	Sigma #67F07701	Red flash to brown	Brown	Dark red	–
Alphaprodine HCl*	USPC #1275-F	Red to dark red	Dark yellow	Light pink to grey	–
Thebaine	Applied #499	Dark red	Dark red with yellow streaks	Dark red with yellow streaks	–
3,4-MDEA*	Sigma #072K4087	Grey/blue	Red/maroon	Purple	–
Tamoxifen Citrate*	USPC #G-1	Yellow to orange	Yellow/orange	Yellow/orange	–
Naproxen	Sigma #081M1091V	Yellowish Red	Deep red to black with yellow streaks	Yellow/orange to black	–
Warfarin	Sigma #104K1261	Orange to deep red	Pink	No Color Change	–
Warfarin*	Sigma #104K1261	Dark Orange	Pink	No Color Change	–
Dihydrocodeine Bitartrate*	Alltech #410	Purple	No Color Change	Faint green/light yellow	–
Morphine HCl trihydrate*	Grace #512	Purple	No Color Change	Purple	–
1-(4-Methoxyphenyl)piperazine*	Aldrich #02817HJV	Faint red	No Color Change	Slow light brown	–
Morphine-3-β-D-glucuronide*	Sigma #51F3831	Light purple/pink	No Color Change	Faint dark red/faint purple	–
Ethylmorphine HCl*	Mallinckrodt #E106057	Yellow to purple	No Color Change	Light yellow	–
Ethylbenzylamine	C030308-2	Light purple	No Color Change	No Color Change	–
Pentoxyifylline	Sigma #059K1682	Slow light red	No Color Change	No Color Change	–
Hydrocodone bitartrate salt*	Sigma #047F0128V	Slow pink	No Color Change	No Color Change	–
1-Phenylcyclohexamine	Applied #9/29	Faint pink to orange	No Color Change	No Color Change	–
Fluoxetine	Sigma #93H04761	Light Red	Red/Light Brown	Not Performed	–
Chlorpromazine	Applied Scientific #3191	Dark pink/light purple	Flashes red to dark red with green streaks	Not Performed	–
Amitriptyline HCl*	Sigma #109F0330	Red to dark red/brown	Maroon	Not Performed	–
1-(4-Methoxyphenyl)piperazine	Aldrich #02817HJV	Slow faint red	Faint red	Not Performed	–
N,N-dimethyltryptamine	Sigma #14C-0540	Brown	Not Performed	Not Performed	–
L-α-acetylmethadol HCl*	Applied Science #1A	Brown	Not Performed	Not Performed	–
Turinabol	Steraloids #B0271A	Brown	Not Performed	Not Performed	–
LAMPA	Alltech #0722	Brown	Not Performed	Not Performed	–
Prednisolone	Sigma #108K1514	Brown	Not Performed	Not Performed	–
N,N-dimethyl-1-phenylcyclohexylamine HCl	Applied Science #001	Faint pink	Not Performed	Not Performed	–
Brucine Sulfate	Mallinckrodt #BDP	Faint/weak pink	Not Performed	Not Performed	–
Methenolone Acetate	Steraloids #H770A	Faint orange	Not Performed	Not Performed	–
N-(N-propyl)-1-phencyclohexylamine HCl	Applied Science #001	Very faint orange	Not Performed	Not Performed	–
Chick pea flour	N/A	Faint tan/yellow	Not Performed	Not Performed	–
Protein powder	N/A	Faint tan/yellow	Not Performed	Not Performed	–
Chlordiazepoxide	Applied Science #670B	Faint yellow	Not Performed	Not Performed	–
Hydroxytriazolam, alpha	Upjohn Labs #0048-MCM-3A	Faint yellow	Not Performed	Not Performed	–
Mesterolone	Sigma #11H0856	Faint yellow	Not Performed	Not Performed	–
Scopolamine HBr	Sigma #115B-2200	Faint yellow	Not Performed	Not Performed	–
Oxazepam	Sigma #39F4035	Faint yellow	Not Performed	Not Performed	–
Quinine HCl	Alltech #9700	Faint yellow	Not Performed	Not Performed	–
Ampicillin	USP #H	Faint yellow	Not Performed	Not Performed	–
Cephalexin monohydrate	MP Biomedicals #3370H	Faint yellow	Not Performed	Not Performed	–
Clonazepam	Alltech #015061	Faint yellow	Not Performed	Not Performed	–

*sample tested by NarcoPouch

Appendix 1: Substances tested that were white or off-white

Compound	Compound Manuf/Lot #	Marquis Result	Mecke Result	Froehde Result	Results
Dromostanolone Propionate	Steraloids #B0969	Faint yellow	Not Performed	Not Performed	–
Nordiazepam	Alltech #001	Faint yellow	Not Performed	Not Performed	–
Norethandrolone	Steraloids #G498	Faint yellow	Not Performed	Not Performed	–
Zolpidem	Sigma #84H0608	Faint yellow	Not Performed	Not Performed	–
Testosterone	Sigma #108F0777	Faint yellow to tan	Not Performed	Not Performed	–
Methaqualone HCl	Sigma #125F-0510	Faint yellow/orange	Not Performed	Not Performed	–
Sweetened coconut	Kroger #V12296A1-24	Light Yellow	Not Performed	Not Performed	–
Cephalexin hydrate	Sigma #105K0487	Slow faint yellow	Not Performed	Not Performed	–
Ethinamate	Applied Sciences #128	Flash orange (Violent Reaction)	Not Performed	Not Performed	–
DL-2,5-dimethoxyamphetamine HCl	Applied Science #2	Flash Yellow to Green	Not Performed	Not Performed	–
Diphenhydramine HCl	Parke Davis #563463	Flash Yellow to Orange	Not Performed	Not Performed	–
Flurazepam	Applied Science #98115	Light green to peach	Not Performed	Not Performed	–
Dromostanolone	Steraloids #B0293	Light orange/light yellow	Not Performed	Not Performed	–
(-)-Ephedrine	Sigma #27F0340	Light orange	Not Performed	Not Performed	–
17α-methyltestosterone	Sigma #49F-0806	Light orange	Not Performed	Not Performed	–
Nandrolone Decanoate	Steraloids #B0901	Light orange/tan	Not Performed	Not Performed	–
N-(isopropyl)-1-phenylcyclohexylamine HCl	Applied Science #001	Light peach to brown upon standing	Not Performed	Not Performed	–
Salicylic Acid	MP Biomedical #8819F	Slow pink	Not Performed	Not Performed	–
Cathine HCl	Sigma #028K46202A	Light pink	Not Performed	Not Performed	–
Diethyltryptamine HCl	Alltech #1	Light tan	Not Performed	Not Performed	–
Androstenedione	Steraloids #B1001	Light yellow	Not Performed	Not Performed	–
5,5-diphenylhydantoin	Sigma #053K3668	Light yellow	Not Performed	Not Performed	–
Amoxicillin	Sigma #112K0481	Light yellow	Not Performed	Not Performed	–
Dehydrocortisone	Applied Science #19559	Light yellow	Not Performed	Not Performed	–
Etonitazene HCl	Applied Sciences #1	Light yellow	Not Performed	Not Performed	–
Lorazepam	Sigma #35F0115	Light yellow	Not Performed	Not Performed	–
Baby formula	Similac #26112SHO	Light yellow/orange	Not Performed	Not Performed	–
1-(3,4-dichlorophenyl)piperazine	Alfa Aesar #C04X020	Light yellow to peach	Not Performed	Not Performed	–
3,4,5-trimethoxyamphetamine HCl	Applied #3	Orange	Not Performed	Not Performed	–
Meperidine	Applied Science #41612	Orange	Not Performed	Not Performed	–
Mescaline	Sigma #102C-1710	Orange	Not Performed	Not Performed	–
Methamphetamine HCl	Sigma #SLBD5916V	Orange	Not Performed	Not Performed	–
N-(N-butyl)-1-phenylcyclohexylamine HCl	Applied Science #001A	Orange	Not Performed	Not Performed	–
Resorcinol	Alfa Aesar #I26X010	Orange	Not Performed	Not Performed	–
Testosterone 17-phenylpropionate	Steraloids #H290	Orange	Not Performed	Not Performed	–
Phentermine	Sigma #84H0171	Orange	Not Performed	Not Performed	–
Diethylstilbesterol	Applied Science #239	Orange	Not Performed	Not Performed	–
DL-amphetamine sulfate	K&K Labs #75702	Orange	Not Performed	Not Performed	–
Epitestosterone	Sigma #050M1392V	Orange	Not Performed	Not Performed	–
Fentanyl	Sigma #087K1409	Orange	Not Performed	Not Performed	–
Glutethimide	Alltech #103	Orange	Not Performed	Not Performed	–
Nandrolone Phenpropionate	USP #H	Orange	Not Performed	Not Performed	–
Flunitrazepam	Sigma #056F0685	Slight orange	Not Performed	Not Performed	–
Diphenoxylate HCl	USPC #G	Slow orange	Not Performed	Not Performed	–
Chloral Betaine	Johnson and Co. #MMBC068	Slow light orange	Not Performed	Not Performed	–
Cholesterol	Applied Science #2038	Orange specks with yellow streaks	Not Performed	Not Performed	–
Mexiletine HCl	Sigma #66H0668	Orange to dark red	Not Performed	Not Performed	–
Benzphetamine HCl	Applied Science #238	Orange to red	Not Performed	Not Performed	–
L-amphetamine sulfate	K&K Labs #75309	Orange to red	Not Performed	Not Performed	–
Boldenone	Steraloids #H754	Orange to tan	Not Performed	Not Performed	–
Phenylacetic Acid	Aldrich #040237	Orange to brown	Not Performed	Not Performed	–
Allylcyclopentenyl Barbituric Acid	Applied Science #L136	Orange to brown	Not Performed	Not Performed	–
Fluoxymesterone	Sigma #50H59691	Orange to brown	Not Performed	Not Performed	–
Thebaine*	Applied #499	Orange/brown	Not Performed	Not Performed	–

*sample tested by NarcoPouch

Appendix 1: Substances tested that were white or off-white

Compound	Compound Manuf/Lot #	Marquis Result	Mecke Result	Froehde Result	Results
Phenylpropanolamine	Sigma #90C-1710	Orange/peach	Not Performed	Not Performed	–
Phenelzine Sulfate Salt	Sigma #94H7706	Orange/peach	Not Performed	Not Performed	–
Methylphenidate	USP #770	Slow orange	Not Performed	Not Performed	–
Hexobarbital	Applied Science #149	Peach	Not Performed	Not Performed	–
Phenobarbital	Sigma #76H0293	Peach	Not Performed	Not Performed	–
Promazine HCl	Wyeth Labs #F-694007	Peach	Not Performed	Not Performed	–
DL-p-chloroamphetamine	Sigma #14C-3950	Light peach	Not Performed	Not Performed	–
Isopropylbenzylamine	C030308-1	Light peach	Not Performed	Not Performed	–
Ketorolac Tromethamine	USPC #F	Light peach	Not Performed	Not Performed	–
N-methyl-1-phenylcyclohexylamine HCl	Applied Science #001	Light peach	Not Performed	Not Performed	–
Niacinamide	Sigma #37H0859	Faint peach	Not Performed	Not Performed	–
Acetylsalicylic Acid	Sigma #44G-1600	Slow peach	Not Performed	Not Performed	–
Methadone	Sigma #015K0989	Slow peach	Not Performed	Not Performed	–
(+)-Pseudoephedrine HCl	Sigma #96F05311	Slow tan	Not Performed	Not Performed	–
Verapamil HCl	Aldrich #07214AA	Tan	Not Performed	Not Performed	–
Testosterone Decanoate	Sigma #13H4003	Tan	Not Performed	Not Performed	–
TCP HCl (1-(1,2-thienyl)cyclohexylpiperidine HCl)	Applied #1	Tan/brown	Not Performed	Not Performed	–
Levorphanol	USP #F-1	Tan/brown	Not Performed	Not Performed	–
JWH 018	Sigma #BCBB7693	Dark yellow/dark green	Not Performed	Not Performed	–
Naproxen*	Sigma #081M1091V	Deep yellow	Not Performed	Not Performed	–
4-methyl-2,5-dimethoxyamphetamine	USP #1275-F	Yellow	Not Performed	Not Performed	–
DL-2,5-dimethoxy-4-methylamphetamine HCl	Alltech #3	Yellow	Not Performed	Not Performed	–
Mestanolone	Steraloids #H593	Yellow	Not Performed	Not Performed	–
Desalkylflurazepam	Alltech #3367B	Yellow	Not Performed	Not Performed	–
Estradiol	Applied Science #19514	Yellow	Not Performed	Not Performed	–
Sucrose	Sigma #020M0079	Yellow	Not Performed	Not Performed	–
±-Ephedrine	Sigma #127F0808	Yellow	Not Performed	Not Performed	–
Citalopram HBr	Sigma #095K1314	Yellow	Not Performed	Not Performed	–
Cortisone	Applies Science #19557	Yellow	Not Performed	Not Performed	–
DL-2,5-dimethoxy-4-ethylamphetamine HCl	Applied Science #2	Yellow	Not Performed	Not Performed	–
Ketotifen Fumarate salt	Sigma #098K1356	Yellow	Not Performed	Not Performed	–
Oxymetholone	Sigma #90H0569	Yellow	Not Performed	Not Performed	–
P-hydroxynorephedrine	Alltech #0419	Yellow	Not Performed	Not Performed	–
Prednisone	Sigma #04114LE	Yellow	Not Performed	Not Performed	–
α-naphthoflavone	Sigma #87F3408	Yellow	Not Performed	Not Performed	–
TCP Morpholine analog HCl	Applied #3	Yellow/tan	Not Performed	Not Performed	–
Indole	Sigma #13C-3080	Yellow/brown	Not Performed	Not Performed	–
Methandriol	Sigma #29F0013	Yellow to brown	Not Performed	Not Performed	–
Cannabidiol	Grace #083	Yellow to brown	Not Performed	Not Performed	–
Methandriol dipropionate	Steraloids #H184	Yellow to brown	Not Performed	Not Performed	–
Modafinil	Sigma #096K46161	Yellow to orange to brown	Not Performed	Not Performed	–
Ibuprofen	Sigma #026H1368	Yellow to orange	Not Performed	Not Performed	–
Bolasterone	Sigma #70H0833	Yellow to orange to light brown/red	Not Performed	Not Performed	–
5-androstene-3β,17β-diol (aka androstendiol)	Sigma #48F0135	Yellow to orange	Not Performed	Not Performed	–
Boldenone	Sigma #29F0410	Yellow to orange	Not Performed	Not Performed	–
Bromazepam	Sigma #056F0686V	Yellow with faint orange	Not Performed	Not Performed	–
Dehyroisoandrosterone (Prasterone)	Sigma #95H0823	Yellow/orange	Not Performed	Not Performed	–
Stanolone	Sigma #19F0183	Yellow/orange	Not Performed	Not Performed	–
Nandrolone	Sigma #78F0360	Yellow/orange	Not Performed	Not Performed	–
Testosterone Enanthate	Sigma #25F0714	Yellow/orange with orange specks	Not Performed	Not Performed	–
(-)-Tetramisole HCl	Sigma #088K0753	No Color Change	Not Performed	Not Performed	–
4-methoxyamphetamine	Grace #392	No Color Change	Not Performed	Not Performed	–
Acetylsalicylic Acid*	Sigma #44G-1600	No Color Change	Not Performed	Not Performed	–
Antipyrine*	Applied Science #759	No Color Change	Not Performed	Not Performed	–

*sample tested by NarcoPouch

Appendix 1: Substances tested that were white or off-white

Compound	Compound Manuf/Lot #	Marquis Result	Mecke Result	Froehde Result	Results
Antipyrine	Applied Science #759	No Color Change	Not Performed	Not Performed	–
Barbital	Sigma #69F0786	No Color Change	Not Performed	Not Performed	–
Benzoylecgonine anhydrous	Grace #5734	No Color Change	Not Performed	Not Performed	–
Bis(2-chloroethyl)amine HCl*	Aldrich #03507KEV	No Color Change	Not Performed	Not Performed	–
Bis(2-chloroethyl)amine HCl	Aldrich #03507KEV	No Color Change	Not Performed	Not Performed	–
Boldenone Acetate	Steraloids #C307	No Color Change	Not Performed	Not Performed	–
Boldenone Cypionate	Steraloids #B0520	No Color Change	Not Performed	Not Performed	–
Chlorpheniramine maleate	Endo #71-265	No Color Change	Not Performed	Not Performed	–
Clonidine HCl	Sigma #035K0846	No Color Change	Not Performed	Not Performed	–
D,L-4-methoxyamphetamine	Applied Science #3	No Color Change	Not Performed	Not Performed	–
Dimethylsulfone	Sigma #45H3614	No Color Change	Not Performed	Not Performed	–
Dromostanolone Enantahte	Steraloids #B0970	No Color Change	Not Performed	Not Performed	–
Gamma hydroxybutyric acid sodium salt	Sigma #68F5042	No Color Change	Not Performed	Not Performed	–
Levamisole HCl	MP Biomedical #R25023	No Color Change	Not Performed	Not Performed	–
Lidocaine	Applied Science #L03095	No Color Change	Not Performed	Not Performed	–
Mephedrone HCl	Sigma #110M4703VA	No Color Change	Not Performed	Not Performed	–
Methenamine	Sigma #04204LA	No Color Change	Not Performed	Not Performed	–
Methenolone Enanthate	Steraloids #H985	No Color Change	Not Performed	Not Performed	–
n-Tetracosane	Sigma #21H0012	No Color Change	Not Performed	Not Performed	–
n-Triacontane	Applied Science #2184	No Color Change	Not Performed	Not Performed	–
Parmesan Cheese	Castle Importing	No Color Change	Not Performed	Not Performed	–
Phencyclidine	Sigma #053K4063B	No Color Change	Not Performed	Not Performed	–
Pilocarpine HCl	Sigma #117B-0190	No Color Change	Not Performed	Not Performed	–
Procaine HCl	Sigma #125K0697	No Color Change	Not Performed	Not Performed	–
Sibutramine HCl monohydrate	Sigma #109K4605	No Color Change	Not Performed	Not Performed	–
Testosterone Acetate	Sigma #19F0299	No Color Change	Not Performed	Not Performed	–
Testosterone Isocaproate	Steraloids #L1563	No Color Change	Not Performed	Not Performed	–
Testosterone Undecanoate	Steraloids #G974	No Color Change	Not Performed	Not Performed	–
Tetracaine	Sigma #128F0464	No Color Change	Not Performed	Not Performed	–
Tetracaine HCl	Sigma #57F-0258	No Color Change	Not Performed	Not Performed	–
1,3-dimethylbarbituric acid	Aldrich #01410DT	No Color Change	Not Performed	Not Performed	–
Acetaminophen*	Sigma #032K0146	No Color Change	Not Performed	Not Performed	–
Acetaminophen	Sigma #032K0146	No Color Change	Not Performed	Not Performed	–
Alprazolam	Grace #488B	No Color Change	Not Performed	Not Performed	–
Benzocaine*	Sigma #083K0642	No Color Change	Not Performed	Not Performed	–
Benzocaine	Sigma #083K0642	No Color Change	Not Performed	Not Performed	–
Benzoylecgonine	Sigma #51H4030	No Color Change	Not Performed	Not Performed	–
Cocaine HCl	Sigma #60H1016	No Color Change	Not Performed	Not Performed	–
Ecgonine Methyl Ester HCl	Alltech #2901	No Color Change	Not Performed	Not Performed	–
Mannitol	Sigma #030M0050	No Color Change	Not Performed	Not Performed	–
Secobarbital	Sigma #29F0287	No Color Change	Not Performed	Not Performed	–
Theophylline	USPC #H	No Color Change	Not Performed	Not Performed	–
(1R,2S)-(-)-Ephedrine HCl	Sigma #07220DU	No Color Change	Not Performed	Not Performed	–
1-(2-chlorophenyl)piperazine monohydrochloride	Aldrich #05112TH	No Color Change	Not Performed	Not Performed	–
1-(3-chlorophenyl)piperazine hydrochloride	Aldrich #40796TJ	No Color Change	Not Performed	Not Performed	–
1-(4-chlorophenyl)piperazine dihydrochloride	Sigma #06519KD-428	No Color Change	Not Performed	Not Performed	–
1,4-Dibenzylpiperazine dihydrochloride	Aldrich #ALD10312011	No Color Change	Not Performed	Not Performed	–
5-Nitrobarbituric Acid	Sigma #35F3429	No Color Change	Not Performed	Not Performed	–
Allylisobutylbarbituric acid (butalbital)	Applied Science #134	No Color Change	Not Performed	Not Performed	–
Alpenal	Applied Science #130	No Color Change	Not Performed	Not Performed	–
Amobarbital	Alltech #238B	No Color Change	Not Performed	Not Performed	–
Ampicillin*	USP #H	No Color Change	Not Performed	Not Performed	–
Aprobarbital	Applied Science #114	No Color Change	Not Performed	Not Performed	–
Atropine Sulfate*	Sigma #82C-2900	No Color Change	Not Performed	Not Performed	–

*sample tested by NarcoPouch

Appendix 1: Substances tested that were white or off-white

Compound	Compound Manuf/Lot #	Marquis Result	Mecke Result	Froehde Result	Results
Atropine Sulfate	Sigma #82C-2900	No Color Change	Not Performed	Not Performed	–
Barbital Sodium salt	Sigma #118F0905	No Color Change	Not Performed	Not Performed	–
Benzoylecgonine Tetrahydrate	Alltech #8983	No Color Change	Not Performed	Not Performed	–
Brucine Sulfate*	Mallinckrodt #BDP	No Color Change	Not Performed	Not Performed	–
Buspirone HCl	Sigma #065K1579	No Color Change	Not Performed	Not Performed	–
Butabarbital	Applied Science #139	No Color Change	Not Performed	Not Performed	–
Butacaine Sulfate*	USP #1175-F	No Color Change	Not Performed	Not Performed	–
Butacaine Sulfate	USP #1175-F	No Color Change	Not Performed	Not Performed	–
Butethal	Applied Science #140	No Color Change	Not Performed	Not Performed	–
Caffeine	Sigma #102C-2160	No Color Change	Not Performed	Not Performed	–
Carbomal	Parke Davis #408913	No Color Change	Not Performed	Not Performed	–
Carisoprodol	Alltech #401	No Color Change	Not Performed	Not Performed	–
Chlorzoxazone	Sigma #093K1179	No Color Change	Not Performed	Not Performed	–
Clenbuterol	Sigma #21K11528	No Color Change	Not Performed	Not Performed	–
Clostebol Acetate	Sigma #108F02881	No Color Change	Not Performed	Not Performed	–
Cocaine	Sigma #114H0621	No Color Change	Not Performed	Not Performed	–
Corn Starch	Argo #231A9C	No Color Change	Not Performed	Not Performed	–
Demoxepam	USPC #F-1	No Color Change	Not Performed	Not Performed	–
Diazepam	Sigma #105F-0451	No Color Change	Not Performed	Not Performed	–
Dibucaine	K&K Labs #20746-A	No Color Change	Not Performed	Not Performed	–
Diclofenac sodium	Sigma #069K1702	No Color Change	Not Performed	Not Performed	–
Diphenylhydantoin	Alltech #30277	No Color Change	Not Performed	Not Performed	–
Dipyrone	Fluka #078K1284	No Color Change	Not Performed	Not Performed	–
Disulfiram	Ayerst Labs #L667	No Color Change	Not Performed	Not Performed	–
DL-5-(p-hydroxyphenyl)-5-phenylhydantoin	Alltech Applied #3702	No Color Change	Not Performed	Not Performed	–
Emetine di-HCl	Sigma #85H0748	No Color Change	Not Performed	Not Performed	–
Ethylbenzylamine*	C030308-2	No Color Change	Not Performed	Not Performed	–
Fenfluramine HCl	Alltech #27082	No Color Change	Not Performed	Not Performed	–
Hydroxyalprazolam, alpha	Upjohn Labs #21247-MFL-13	No Color Change	Not Performed	Not Performed	–
Hydroxyzine Dihydrochloride	Sigma #035K0841	No Color Change	Not Performed	Not Performed	–
Hyoscyamine HCl	Sigma #73C-0250	No Color Change	Not Performed	Not Performed	–
Hyoscyamine sulfate	USPC #G	No Color Change	Not Performed	Not Performed	–
Isosorbide dinitrate	Sigma #017H1006	No Color Change	Not Performed	Not Performed	–
Ketamine HCl	Sigma #58H3534	No Color Change	Not Performed	Not Performed	–
Lactic acid	Sigma #113H2522	No Color Change	Not Performed	Not Performed	–
Lactose	Sigma #67H1545	No Color Change	Not Performed	Not Performed	–
Lansoprazole	Sigma #095K1862	No Color Change	Not Performed	Not Performed	–
Meclizine	Sigma #105F0208	No Color Change	Not Performed	Not Performed	–
Mephobarbital	Applied Science #132	No Color Change	Not Performed	Not Performed	–
Meprobamate	Sigma #126F0690B	No Color Change	Not Performed	Not Performed	–
Methylcellulose	USPC #F	No Color Change	Not Performed	Not Performed	–
Metronidazole	Sigma #033K1473	No Color Change	Not Performed	Not Performed	–
N,N-diethyl-1-phenylcyclohexylamine HCl	Applied Science #001	No Color Change	Not Performed	Not Performed	–
Nicotinic Acid	Sigma #091M0133V	No Color Change	Not Performed	Not Performed	–
Norchlordiazpoxide	Alltech #1091	No Color Change	Not Performed	Not Performed	–
PCP Morpholine analog HCl	Applied #3	No Color Change	Not Performed	Not Performed	–
PCP-4-hydroxy metabolite HCl	Applied #105	No Color Change	Not Performed	Not Performed	–
Pentobarbital	Sigma #87H1004	No Color Change	Not Performed	Not Performed	–
Pentoxifylline*	Sigma #059K1682	No Color Change	Not Performed	Not Performed	–
Phenacetin	TCI #NU3QA-RI	No Color Change	Not Performed	Not Performed	–
Phendimetrazine tartrate	USP #F	No Color Change	Not Performed	Not Performed	–
Phenmetrazine HCl	USP #F-1	No Color Change	Not Performed	Not Performed	–
Phenylboronic Acid	Sigma #63H3679	No Color Change	Not Performed	Not Performed	–
Phenylbutazone	Sigma #78H1117	No Color Change	Not Performed	Not Performed	–

*sample tested by NarcoPouch

Appendix 1: Substances tested that were white or off-white

Compound	Compound Manuf/Lot #	Marquis Result	Mecke Result	Froehde Result	Results
Prazepam	Sigma #56F0684	No Color Change	Not Performed	Not Performed	–
Pregabalin	Sigma #080M4709V	No Color Change	Not Performed	Not Performed	–
Primidone	Applied Science #E893	No Color Change	Not Performed	Not Performed	–
Progesterone	Sigma #088K0671	No Color Change	Not Performed	Not Performed	–
Quinine Sulfate	USPC #F-1	No Color Change	Not Performed	Not Performed	–
Scopolamine HBr Hydrate	Alltech #2209	No Color Change	Not Performed	Not Performed	–
Sildenafil Citrate salt	Sigma #030M4704V	No Color Change	Not Performed	Not Performed	–
Spermine HCl	K&K Labs #86	No Color Change	Not Performed	Not Performed	–
Strychnine Sulfate	Merck #63981	No Color Change	Not Performed	Not Performed	–
Testosterone 17-β-cypionate	Sigma #128F0620	No Color Change	Not Performed	Not Performed	–
Testosterone Propionate	Sigma #117F-0618	No Color Change	Not Performed	Not Performed	–
Theobromine	Sigma #122C-2910	No Color Change	Not Performed	Not Performed	–
Topiramate	Sigma #034K47052	No Color Change	Not Performed	Not Performed	–
Trazodone HCl	Sigma #018F0429	No Color Change	Not Performed	Not Performed	–
Triazolam	Sigma #59H0382	No Color Change	Not Performed	Not Performed	–
Valproic Acid	Sigma #67H1987	No Color Change	Not Performed	Not Performed	–
(-)-Nicotine	Sigma #91K1502	No Color Change	Not Performed	Not Performed	–

*sample tested by NarcoPouch

Appendix 2: Substances tested that were black/brown unless otherwise indicated

Compound	Compound Manuf/Lot #	Marquis Result	Mecke Result	Froehde Result	Results
Heroin (black tar)*	Composite casework sample†	Purple (20 seconds)	Dark green (immediate)	Purple (immediate)	+
Heroin (black tar)	Composite casework sample†	Purple	Bluish/green	Purple	+
Heroin (black tar)*	Event # ending in 1984	Red to Purple (45 seconds)	Green (5 seconds)	Purple (5 seconds)	+
Heroin (black tar)	Event # ending in 1984	Purple	Green/blue	Purple	+
Heroin (black tar)*	Event # ending in 2127	Red to Purple (50 seconds)	Green (5 seconds)	Purple (5 seconds)	+
Heroin (black tar)	Event # ending in 2127	Purple	Green/blue	Purple	+
Heroin (black tar)*	Event # ending in 1692	Red to Purple (45 seconds)	Green (5 seconds)	Purple (5 seconds)	+
Heroin (black tar)	Event # ending in 1692	Purple	Green/blue	Purple	+
Heroin (black tar)*	Event # ending in 2338	Red to Purple (55 seconds)	Green (5 seconds)	Purple (5 seconds)	+
Heroin (black tar)	Event # ending in 2338	Purple	Green/blue	Purple	+
Heroin (black tar)*	Event # ending in 2086	Red to Purple (55 seconds)	Green (5 seconds)	Purple (5 seconds)	+
Heroin (black tar)	Event # ending in 2086	Purple	Green/blue	Purple	+
Heroin (black tar)*	Event # ending in 2681	Red to Purple (60 seconds)	Green (5 seconds)	Purple (10 seconds)	+
Heroin (black tar)	Event # ending in 2681	Purple	Green/blue	Purple	+
Heroin (black tar)*	Event # ending in 2902	Red to Purple (60 seconds)	Green (5 seconds)	Purple (5 seconds)	+
Heroin (black tar)	Event # ending in 2902	Purple	Green/blue	Purple	+
Heroin (black tar)*	Event # ending in 1443	Red to Purple (60 seconds)	Green (10 seconds)	Purple (5 seconds)	+
Heroin (black tar)	Event # ending in 1443	Purple	Green/blue	Purple	+
Heroin (black tar)*	Event # ending in 2811	Red to Purple (50 seconds)	Green (5 seconds)	Purple (5 seconds)	+
Heroin (black tar)	Event # ending in 2811	Purple	Green/blue	Purple	+
Heroin (black tar)*	Event # ending in 2426	Red to Purple (45 seconds)	Green (5 seconds)	Purple (5 seconds)	+
Heroin (black tar)	Event # ending in 2426	Purple	Green/blue	Purple	+
Heroin (black tar)*	Event # ending in 2518	Red to Purple (60 seconds)	Green (5 seconds)	Purple (5 seconds)	+
Heroin (black tar)	Event # ending In 2518	Purple	Green/blue	Purple	+
Heroin (black tar)*	Event # ending in 2521	Red to Purple (60 seconds)	Green (10 seconds)	Purple (5 seconds)	+
Heroin (black tar)	Event # ending in 2521	Purple	Green/blue	Purple	+
Heroin (black tar)*	Event # ending in 2745	Red to Purple (60 seconds)	Green (10 seconds)	Purple (10 seconds)	+
Heroin (black tar)	Event # ending in 2745	Purple	Green/blue	Purple	+
Heroin (black tar)*	Event # ending in 2916	Red to Purple (60 seconds)	Green (10 seconds)	Purple (10 seconds)	+
Heroin (black tar)	Event # ending in 2916	Purple	Green/blue	Purple	+
Heroin (black tar)*	Event # ending in 3192	Red to Purple (60 seconds)	Green (15 seconds)	Purple (5 seconds)	+
Heroin (black tar)	Event # ending in 3192	Purple	Green/blue	Purple	+
Heroin (black tar)*	Event # ending in 2498	Red to Purple (70 seconds)	Green (15 seconds)	Purple (5 seconds)	+
Heroin (black tar)	Event # ending in 2498	Purple	Green/blue	Purple	+
Heroin (black tar)*	Event # ending in 1144	Red to Purple (65 seconds)	Green (15 seconds)	Purple (10 seconds)	+
Heroin (black tar)	Event # ending in 1144	Purple	Green/blue	Purple	+
Heroin (black tar)*	Event # ending In 3338	Red to Purple (70 seconds)	Green (25 seconds)	Purple (10 seconds)	+
Heroin (black tar)	Event # ending In 3338	Purple	Green/blue	Purple	+
Heroin (black tar)*	Event # ending in 2487	Red to Purple (55 seconds)	Green (30 seconds)	Purple (5 seconds)	+
Heroin (black tar)	Event # ending in 2487	Purple	Green/blue	Purple	+
Heroin (black tar, shavings)*	Event # ending in 3110	Dark red to slow purple (approx 90 seconds)	Green (30 seconds)	Purple (approx 10 seconds)	+
Heroin (black tar)	Event # ending in 3110	Purple	Bluish/green	Purple	+
Heroin (black tar)*	Event # ending in 2612	Red to Purple (70 seconds)	Brown/grey/green (30 seconds)	Purple (5 seconds)	+
Heroin (black tar)	Event # ending in 2612	Purple	Grey/green	Purple	+
Heroin (black tar)*	Event # ending in 3185	Red to Purple (75 seconds)	Green (30 seconds)	Purple (10 seconds)	+
Heroin (black tar)	Event # ending in 3185	Purple	Green	Purple	+
Heroin (black tar)*	Event # ending in 3049	Red to Purple (80 seconds)	Green (30 seconds)	Purple (10 seconds)	+
Heroin (black tar)	Event # ending in 3049	Purple	Green	Purple	+
Heroin (black tar)*	Event # ending in 0315	Red to Purple (60 seconds)	Green (20 seconds)	Purple (10 seconds)	+
Heroin (black tar)	Event # ending in 0315	Purple	Green	Purple	+
Heroin (black tar)*	Event # ending in 1956	Red to Purple (60 seconds)	Green (15 seconds)	Purple (5 seconds)	+
Heroin (black tar)	Event # ending in 1956	Purple	Green	Purple	+
Heroin (black tar)*	Event # ending in 2025	Red to Purple (60 seconds)	Green (30 seconds)	Purple (5 seconds)	+
Heroin (black tar)	Event # ending in 2025	Purple	Green	Purple	+

*sample tested by NarcoPouch

†composite casework sample from event # ending in 2598, 3474, 2365

Appendix 2: Substances tested that were black/brown unless otherwise indicated

Compound	Compound Manuf/Lot #	Marquis Result	Mecke Result	Froehde Result	Results
Heroin (black tar)*	Event # ending in 2427	Red to Purple (40 seconds)	Green (30 seconds)	Purple (5 seconds)	+
Heroin (black tar)	Event # ending in 2427	Purple	Green	Purple	+
Heroin (black tar)*	Event # ending in 3229	Red to Purple (60 seconds)	Green (30 seconds)	Purple (10 seconds)	+
Heroin (black tar)	Event # ending in 3229	Purple	Green	Purple	+
Heroin (black tar)*	Event # ending in 3410	Red to Purple (60 seconds)	Green (30 seconds)	Purple (10 seconds)	+
Heroin (black tar)	Event # ending in 3410	Purple	Green	Purple	+
Heroin (black tar)*	Event # ending in 2847	Red to Purple (90 seconds)	Green (30 seconds)	Purple (10 seconds)	+
Heroin (black tar)	Event # ending in 2847	Purple	Blue/green	Purple	+
Heroin (black tar)*	Event # ending in 2684	Red to Purple (45 seconds)	Green (15 seconds)	Purple (10 seconds)	+
Heroin (black tar)	Event # ending in 2684	Purple	Green	Purple	+
Heroin (black tar)*	Event # ending in 1728	Red to Purple (50 seconds)	Green (30 seconds)	Purple (10 seconds)	+
Heroin (black tar)	Event # ending in 1728	Purple	Green	Purple	+
Heroin (black tar)*	Event # ending in 2320	Red to Purple (50 seconds)	Green (30 seconds)	Purple (10 seconds)	+
Heroin (black tar)	Event # ending in 2320	Purple	Blue/green	Purple	+
Heroin (black tar)*	Event # ending in 2846	Red to Purple (70 seconds)	Green (30 seconds)	Purple (10 seconds)	+
Heroin (black tar)	Event # ending in 2846	Purple	Green	Purple	+
Heroin (black tar)*	Event # ending in 5102	Red to Purple (75 seconds)	Green (30 seconds)	Purple (10 seconds)	+
Heroin (black tar)	Event # ending in 5102	Purple	Green	Purple	+
Heroin (black tar)*	Event # ending in 0227	Red to Purple (60 seconds)	Green (30 seconds)	Purple (10 seconds)	+
Heroin (black tar)	Event # ending in 0227	Purple	Green	Purple	+
Heroin (black tar)*	Event # ending in 4316	Red to Purple (70 seconds)	Green (30 seconds)	Purple (5 seconds)	+
Heroin (black tar)	Event # ending in 4316	Purple	Green	Purple	+
Heroin (black tar)*	Event # ending in 2987	Red to Purple (90 seconds)	Green (30 seconds)	Purple (10 seconds)	+
Heroin (black tar)	Event # ending in 2987	Purple	Green	Purple	+
Heroin (black tar)*	Event # ending in 3007	Red to Purple (70 seconds)	Green (30 seconds)	Purple (10 seconds)	+
Heroin (black tar)	Event # ending in 3007	Purple	Green	Purple	+
Heroin (black tar)*	Event # ending in 4026	Red to Purple (60 seconds)	Green (30 seconds)	Purple (5 seconds)	+
Heroin (black tar)	Event # ending in 4026	Purple	Green	Purple	+
Heroin (black tar)*	Event # ending in 3740	Red to Purple (55 seconds)	Green (30 seconds)	Purple (10 seconds)	+
Heroin (black tar)	Event # ending in 3740	Purple	Green	Purple	+
Heroin (black tar)*	Event # ending in 1665	Red to Purple (70 seconds)	Green (30 seconds)	Purple (10 seconds)	+
Heroin (black tar)	Event # ending in 1665	Purple	Green	Purple	+
Heroin (black tar)*	Event # ending in 1261	Red to Purple (35 seconds)	Green (30 seconds)	Purple (10 seconds)	+
Heroin (black tar)	Event # ending in 1261	Purple	Green	Purple	+
Heroin (black tar)*	Event # ending in 0868	Red to Purple (90 seconds)	Green (30 seconds)	Purple (10 seconds)	+
Heroin (black tar)	Event # ending in 0868	Purple	Green	Purple	+
Heroin (black tar)	Event # ending in 2387	Purple	Green/blue	Purple	+
Heroin (black tar)	Event # ending in 1086	Purple	Green/black	Purple	+
Heroin (black tar)	Event # ending in 2956	Purple	Green	Purple	+
Heroin (black tar)	Event # ending in 1125	Purple	Green	Purple	+
Heroin (black tar)	Event # ending in 1515	Purple	Green	Purple	+
6-MAM (evaporated)	Cerilliant #FE060412-13	Purple	Bluish/green	Purple	+
Morphine, 6-MAM, Heroin (solid)	Event # ending in 1801	Slow purple	Slow bluish/green	Slow purple	+
Heroin (black tar)*	Event # ending in 2387	Red to Purple (90 seconds)	Grey/green (45 seconds)	Purple (5 seconds)	–
Heroin (black tar)*	Event # ending in 1086	Red to Purple (65 seconds)	Grey (30 seconds)	Purple (5 seconds)	–
Heroin (black tar)*	Event # ending in 2956	Red to Purple (90 seconds)	Grey (30 seconds)	Purple (5 seconds)	–
Heroin (black tar)*	Event # ending in 1125	Red to Purple (90 seconds)	Grey (30 seconds)	Purple (10 seconds)	–
Heroin (black tar)*	Event # ending in 1515	Red to Purple (90 seconds)	Grey (30 seconds)	Purple (10 seconds)	–
Morphine, 6-MAM, Heroin (solid)*	Event # ending in 1801	Dark red to purple (approx 70 seconds)	Slow grey to green (70 seconds)	Purple (immediate)	–
Crayon(dark purple was-like substance)	N/A	Pink to purple	Pink/light purple	Pink/light purple	–
Apomorphine*	Applied Science #343	Purple	Dark purple	Dark green	–
Apomorphine	Applied Science #343	Purple	Dark purple/black	Dark green	–
Apomorphine (overloaded)*	Applied Science #343	Purple	Dark Purple	Dark green	–
Lysergic Acid	Sigma #79B-0211-9	Purple/brown	Dark green	Yellow/green	–

*sample tested by NarcoPouch

Appendix 2: Substances tested that were black/brown unless otherwise indicated

Compound	Compound Manuf/Lot #	Marquis Result	Mecke Result	Froehde Result	Results
Fast Blue B Salt	Sigma #065K1285	Purple/brown with effervescence	Tan	Grey	–
Black salt	N/A	Black with effervescence	Black with effervescence	Black with effervescence	–
Ergonovine (overloaded)*	Sigma #12C-1960	Brown	Dark green to black	Yellow to light green	–
Lysergic Acid Diethylamide tartrate	USP #1A	Brown	Dark green	Yellow to dark green	–
Ergonovine	Sigma #12C-1960	Brown to Black	Green to black	Yellow to light brown	–
Tetracycline HCl	USP #0974-H-4	Brown with yellow streaks	Black with yellow/green streaks	Black with yellow streaks	–
Peppercorn, smashed seed	N/A	Dark brown/red	Tan	Light brown/light red	–
Tellicherry black pepper (crushed seed)	Kirkland #0T 061104	Dark brown/red	Tan	Reddish brown	–
Fast Blue Salt BN (yellowish green powder)	Sigma #55H2642	Faint yellow	Yellowish brown	Faint yellow	–
Lysergic Acid*	Sigma #79B-0211-9	Grey/brown/purple	Grey/light black	Light green	–
Harmine* (yellow powder)	Sigma #53C-1810	Light brown/orange	Light green/yellow	Yellow to brown	–
Ergonovine*	Sigma #12C-1960	Light brown/purple/black	Light green/yellow to grey	Yellow	–
Allspice, whole	Tampico	Light brown/red	Light tan/brown	Brown	–
Fast Blue B Salt*	Sigma #065K1285	Light Red	Straw/light green	Straw/grey	–
Piperine* (light yellow powder)	SAFC #08922CH	Orange to red to brown	Brown	Brown	–
Piperine (light yellow powder)	SAFC #08922CH	Red	Red to dark brown/black	Dark Red	–
Cloves, ground	McCormick	Reddish/brown	Brown streaks	Reddish brown	–
Cloves, whole	McCormick	Reddish/brown	Brown	Red streaks	–
Decorative black sand	N/A	Slow light pink	No Color Change	Slow grey	–
Opium	Sigma #31H0445A	Tan/brown	Faint grey/green	Faint purple	–
Harmine (yellow powder)	Sigma #53C-1810	Yellow to Red	Yellow/green	Yellow to Red to Orange	–
Lysergic Acid (overloaded)*	Sigma #79B-0211-9	Dark grey	Dark grey/black	Not Performed	–
Fast Blue B Salt (overloaded)*	Sigma #065K1285	Light red/brown	Tan/brown	Not Performed	–
Opium*	Sigma #31H0445A	Brown (90 seconds)	Not Performed	Not Performed	–
6-MAM* (clear liquid)	Cerilliant #FE060412-13	No Color Change	No Color Change	Not Performed	–
Trenbolone Enanthate (light yellow powder)	Steraloids #B0498	Yellow with dark green specks and streaks	Not Performed	Not Performed	–
Molasses	Grandma's Molasses #1758R1K	Tan/light brown	Not Performed	Not Performed	–
Peppercorn, whole seed	N/A	Tan/light brown	Not Performed	Not Performed	–
Cardamom (whole seed and smashed seed)	N/A	Tan/light yellow/orange	Not Performed	Not Performed	–
Decaf French Roast for Keurig	Tully's	Tan/red	Not Performed	Not Performed	–
Asphalt (painted blue rock-like substance)	N/A	Yellow	Not Performed	Not Performed	–
Candy dish brand candy, blue/silver wrapper (off white/yellow rock-like candy substance)	N/A	Yellow	Not Performed	Not Performed	–
Candy dish brand candy, green wrapper (green rock-like candy substance)	N/A	Yellow	Not Performed	Not Performed	–
Poppy seed (whole)	365 Everyday Value	Yellow	Not Performed	Not Performed	–
Hydroxyzine Pamoate Salt (yellow powder)	Sigma #033F0618	Yellow to green	Not Performed	Not Performed	–
Asphalt, brown/black	N/A	Tan	Not Performed	Not Performed	–
English breakfast tea for Keurig	Timothy's	Tan	Not Performed	Not Performed	–
Green mountain coffee for Keurig	N/A	Tan	Not Performed	Not Performed	–
Lemon blueberry passion tea for Keurig	Timothy's	Tan	Not Performed	Not Performed	–
Vanilla (outer shaving)	N/A	Tan	Not Performed	Not Performed	–
Vanilla Bean	N/A	Tan	Not Performed	Not Performed	–
Marijuana	2SC176B	Tan/yellow	Not Performed	Not Performed	–
Artisan Salish fine smoked alder salt	N/A	Tan with effervescence	Not Performed	Not Performed	–
Coffee grounds	N/A	Light tan	Not Performed	Not Performed	–
Bufotenine monooxalate hydrate	Sigma #114B-1750	Light tan with brown/black streaks	Not Performed	Not Performed	–
Soil	N/A	Light tan/light brown	Not Performed	Not Performed	–
JoJos Turkey Teriyaki Jerky	N/A	Light tan/light brown/light orange	Not Performed	Not Performed	–
Brown sugar	N/A	Light Yellow	Not Performed	Not Performed	–
Chocolate brownie/fudge with nuts	N/A	Light Yellow	Not Performed	Not Performed	–
Chocolate peanut butter brownie	N/A	Light Yellow	Not Performed	Not Performed	–
Pancake syrup	N/A	Light Yellow	Not Performed	Not Performed	–
Tryptamine HCl	Sigma #52C-0420	Light Yellow	Not Performed	Not Performed	–

*sample tested by NarcoPouch

Appendix 2: Substances tested that were black/brown unless otherwise indicated

Compound	Compound Manuf/Lot #	Marquis Result	Mecke Result	Froehde Result	Results
Pumpkin chocolate chip bread	Winder Farms	Light yellow/brown	Not Performed	Not Performed	–
Chocolate Cupcake	N/A	Light yellow/light tan	Not Performed	Not Performed	–
Hershey's Whoppers	N/A	Light yellow/light brown	Not Performed	Not Performed	–
Cookie Crisp Cereal	General Mills #CE011902	Light yellow/light green	Not Performed	Not Performed	–
Soft & Chewy Granola Bar Chocolate	Kirkland Signature #05L127	Light yellow/light green/light brown	Not Performed	Not Performed	–
Oxycodone HCl tablet 5 mg (burnt)	2SC172	Light brown	Light brown	Light brown	–
Oxycodone HCl tablet 5 mg (burnt)*	2SC172	Light brown	Not Performed	Not Performed	–
Allspice, ground	N/A	Light brown	Not Performed	Not Performed	–
Black licorice	Australia's Darrell Lea	Light brown	Not Performed	Not Performed	–
Chicory Root	N/A	Light brown	Not Performed	Not Performed	–
Cumin, ground	N/A	Light brown	Not Performed	Not Performed	–
Decaffeinated rainforest espresso for Keurig	Timothy's	Light brown	Not Performed	Not Performed	–
Hershey's Cocoa	Hershey's #82RBKA1	Light brown	Not Performed	Not Performed	–
Hot chocolate mix	N/A	Light brown	Not Performed	Not Performed	–
Hot cocoa mix	Swiss Miss	Light brown	Not Performed	Not Performed	–
Tobacco	2SC131	Light brown	Not Performed	Not Performed	–
Oreos	Nabisco	Light brown	Not Performed	Not Performed	–
Raspberry chocolate truffle coffee	Van Houette	Light brown	Not Performed	Not Performed	–
Tellicherry black pepper (whole seed)	Kirkland #0T 061104	Light brown	Not Performed	Not Performed	–
Instant Coffee (Hazelnut Dream Coffee)	Tastefully Simple #22190	Light brown streaks	Not Performed	Not Performed	–
Trenbolone Acetate	Steraloids #L1462	Brown with yellow streaks	Not Performed	Not Performed	–
Ginger	N/A	Brown/red	Not Performed	Not Performed	–
Trenbolone	Steraloids #H417	Dark brown specks with yellow/brown streaks	Not Performed	Not Performed	–
Brown M&M® candy	Mars #335ASCLV02	Dark yellow	Not Performed	Not Performed	–
19-nortestosterone (faint yellow crystal)	Sigma #63H4003	Faint orange with dark red specks	Not Performed	Not Performed	–
Dark corn syrup	Karo	Faint tan	Not Performed	Not Performed	–
Poppy seed (crushed)	365 Everyday Value	Faint yellow	Not Performed	Not Performed	–
Triprolidine HCl	Sigma #101H0003	Faint yellow	Not Performed	Not Performed	–
Ceiling Tile (off white to beige spondy material)	N/A	Fragment turned dark brown	Not Performed	Not Performed	–
Crayon, brown	N/A	Peach to dark red	Not Performed	Not Performed	–
Crayon (dark green wax-like substance)	N/A	Peach to red	Not Performed	Not Performed	–
Paprika	N/A	Light green	Not Performed	Not Performed	–
Stir fry sauce	N/A	Brown with effervescence	Not Performed	Not Performed	–
African Sumac Tree Bark	N/A	No Color Change	Not Performed	Not Performed	–
Black cumin	N/A	No Color Change	Not Performed	Not Performed	–
Black fingerprint powder	Lightning Powder Co.	No Color Change	Not Performed	Not Performed	–
Black Jelly Beans	Jelly Belly #131017CD2T	No Color Change	Not Performed	Not Performed	–
Carnation Breakfast essentials chocolate milk	Nestle #207650954T AA	No Color Change	Not Performed	Not Performed	–
Cinnamon Stick	McCormick #411145 0609	No Color Change	Not Performed	Not Performed	–
Coffee beans	N/A	No Color Change	Not Performed	Not Performed	–
Crushed red pepper	Castle Importing	No Color Change	Not Performed	Not Performed	–
Kokum (*Garcinia indica*)	N/A	No Color Change	Not Performed	Not Performed	–
Large cardamom	N/A	No Color Change	Not Performed	Not Performed	–
Medazepam (light yellow crystal)	Alltech #0206010	No Color Change	Not Performed	Not Performed	–
Mustard seeds, ground seed	N/A	No Color Change	Not Performed	Not Performed	–
Mustard seeds, whole seed	N/A	No Color Change	Not Performed	Not Performed	–
Onion seeds (whole seed and smashed seed)	N/A	No Color Change	Not Performed	Not Performed	–
Star anise (shell and seed)	N/A	No Color Change	Not Performed	Not Performed	–
Stopper, black	N/A	No Color Change	Not Performed	Not Performed	–
Stopper, cork	N/A	No Color Change	Not Performed	Not Performed	–
Super black powder	Lynn Peavey Co. #5456	No Color Change	Not Performed	Not Performed	–
Tea (175 mg antioxidants)	Lipton	No Color Change	Not Performed	Not Performed	–
Tea (all natural)	Lipton	No Color Change	Not Performed	Not Performed	–

*sample tested by NarcoPouch

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