Health Canada Santé Canada

Royal Canadian Mounted Police Gendarmerie royale du Canada

Drug Analysis Report on Designer Drugs Seized in Quebec

October 2002 to April 2004

Canada

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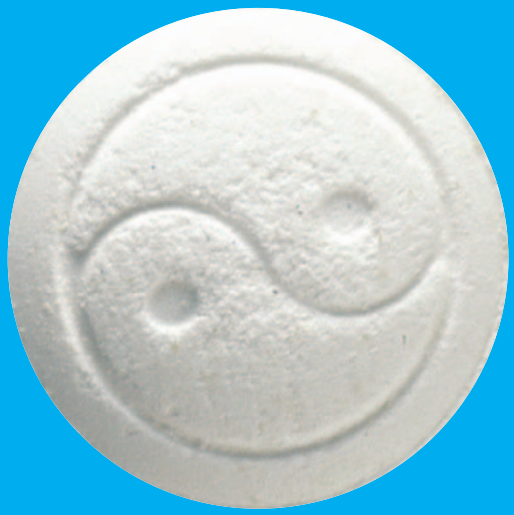

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Foreword

The Rave Project conducted by Health Canada in collaboration with the Royal Canadian Mounted Police responds to a need expressed by drug addiction stakeholders, namely, to find out the composition of drugs produced in clandestine laboratories in Quebec or found on the Quebec market.

Over the past few years, there has been a real increase in the popularity of the so-called designer drugs. Adding to the danger inherent in these products is the fact that users do not know what they are taking. A myriad of products are used in producing these drugs, and some of them can be highly toxic.

We now know the composition of drugs seized between October 2002 and April 2004 during festive events, seizures of imports at the Pierre-Elliott-Trudeau Airport and various police searches. The results lead us to believe that there is not necessarily any similarity between tablets and capsules seized—two tablets or capsules that appear to be identical may contain entirely different products.

Descriptive posters accompany the report. The purpose of these posters is to help stakeholders in their day-to-day work. We hope that this material will help the reader understand the problematics associated with the production of designer drugs, and that it will help meet the needs expressed by those who work in drug addiction.

On behalf of Richard Viau, Director, Drug Analysis Service, Health Canada, and myself, I sincerely thank the Longueuil Drug Analysis Service of Health Canada, and especially Franca Beraldin, Katherine Groison, Zdenka Janeckova, Benoit Archambault, Mathieu Sim, Alain Charest, and Emmanuelle St-Pierre, for their very important contributions to the creation of this report.

We also extend our thanks to the Royal Canadian Mounted Police and especially to Sergeant Jean Lemieux, Guy Boismenu, and Louis Pépin for all the effort expended with regard to the drug seizures, including their contribution to the creation of this report and posters. The police forces of Québec City and Montreal facilitated this undertaking, and we thank them for their help.

We also thank Muguette Lemaire, Françoise Lavoie and Annie Di Palma of Drug Strategy and Controlled Substances, Health Canada, for their participation in the co-ordination and publication of the present document.

Danielle Gagnon
Director, Healthy Environments and Consumer Safety Branch,
Health Canada, Quebec Region

October 15, 2004

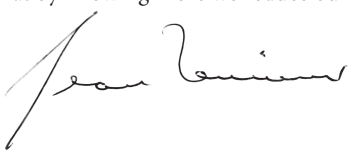
Introduction

Since the end of the 1990s, designer drugs have increasingly gained in popularity. This interest was at first primarily related to the "Rave" phenomenon, and ecstasy was the substance most often consumed. In order to meet the training needs of the various front-line workers involved in these events (police officers, fire fighters, ambulance attendants, and social workers), a national committee was formed to study the situation and set up a training program for them. In keeping with these developments, the National Integrated Training Committee on Chemical Drugs and All-Night Dance Parties for first responders held training workshops in the cities of Vancouver, Montreal, Ottawa, and Toronto in 2002 and 2003. It quickly became apparent that the consumption of ecstasy and its derivatives had by then spread to a far broader clientele than "ravers" only. This means that these substances are now just as often found in after-hour bars, at private parties, at high schools, colleges, and universities. This new reality is corroborated not only by the increasing number of seizures but above all by the testimonies of various drug addiction workers involved with young people in the high schools as well as by street workers. They report that ecstasy and its derivatives are now being more or less regularly consumed by these same youths. The need for data and information specific to the province of Quebec has quickly become apparent.

Consequently, Health Canada and the Royal Canadian Mounted Police agreed on the relevance of initiating a specific project to analyze designer drugs. To do so, and in working with first responders during raves, the Royal Canadian Mounted Police could already count on a partnership with the police forces of Montreal (SPVM) and Québec City (SPVQ). The fact of working together in the field during these raves greatly facilitates the task in terms of collecting drug samples during the major events held in both cities. The substances selected for the purposes of the project were ecstasy and its derivatives (amphetamine-type stimulants), as well as GHB and ketamine, often described as "emerging drugs." In total, 357 samples were collected (seized) while covering seven (7) major rave events in Montreal and Québec City, during various police searches in five (5) cities in Quebec, and including more than a dozen seizures of imports at the Pierre-Elliott-Trudeau Airport in Dorval. It should be mentioned that all of the rave events were large (several thousand participants), and were selected based on the police resources already deployed in order to facilitate seizing the drugs. With regard to the seizures at the Dorval airport and in the five Quebec cities, we simply took samples of those substances identified in our research project seized between October 2002 and April 2004. We nevertheless limited the number of samples due to human resource limitations and for reasons related to the monitoring of the incriminating objects required for legal proceedings. The variety of the samples should enable us to identify the trends in Quebec and the reality in Quebec in terms of consumption, and the production versus import of these various substances. Special effort was expended with regard to the dosage of GHB and ketamine given that, until the project was developed, we had no information either on a national or a provincial level regarding the dosage of these substances.

The purpose of this analytical project is therefore to provide recent provincial data on these substances as well as on several other unique points. The various trends observed are therefore described and analyzed in this report, but to better serve the various stakeholders in the fields of education, health, and those involved in the application of legislation, and including other actors who work for the good of our young and older people, we photographed the substances seized and organized them in two laminated tables. The first one is entitled *Designer Drugs Seized in Quebec* and the second, *Emerging Drugs Seized in Quebec*. Under each substance photographed you will find the list of the main active ingre dients analyzed as well as the month, year, and the city where the substance was seized.

We are confident that, with these tables and detailed results of the analysis project, the various stakeholders who work in prevention will develop a better understanding of the situation, an understanding that will have a significant impact on their various areas of activity. We firmly believe that by knowing more we reduce our risks.



Jean Lemieux, Sergent
Coordinator, East District Drug Awareness Service,
Royal Canadian Mounted Police of Canada

October 15, 2004

Chapter 1

Drug Analysis

Source of Samples

Diagram 1, Source of Samples shows the proportions of the various sources of samples seized within the framework of the project. Most of the samples analyzed come directly from raves and other seizures (315 out of 356, or 89%) with 19, or 5%, seized by the Border Services Agency (Customs), and 22, or 6%, from clandestine laboratories (two different laboratories).

Diagram 1 Source of Samples

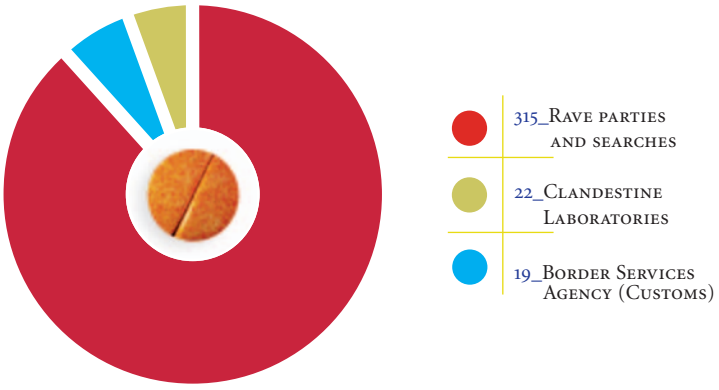
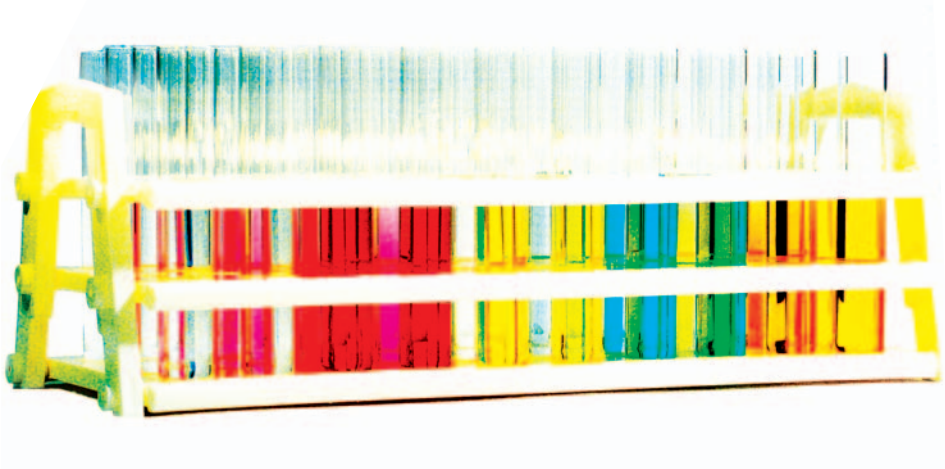


Table 1 Source of Samples

	Border Services Agency (Customs)	19	5%
	Clandestine laboratories	22	6%
	Raves and other seizures	315	89%
	SAMPLE TOTAL	**356**	**100%**



Diagrams 2, 3, 4, and 5 provide complementary information to Diagram 1, adding information regarding the sources of the substances found (Raves and other seizures, Customs, and clandestine laboratories), as well as the total substances present. Clandestine laboratories are dealt with in a separate chapter; results from only two clandestine laboratories are presented.

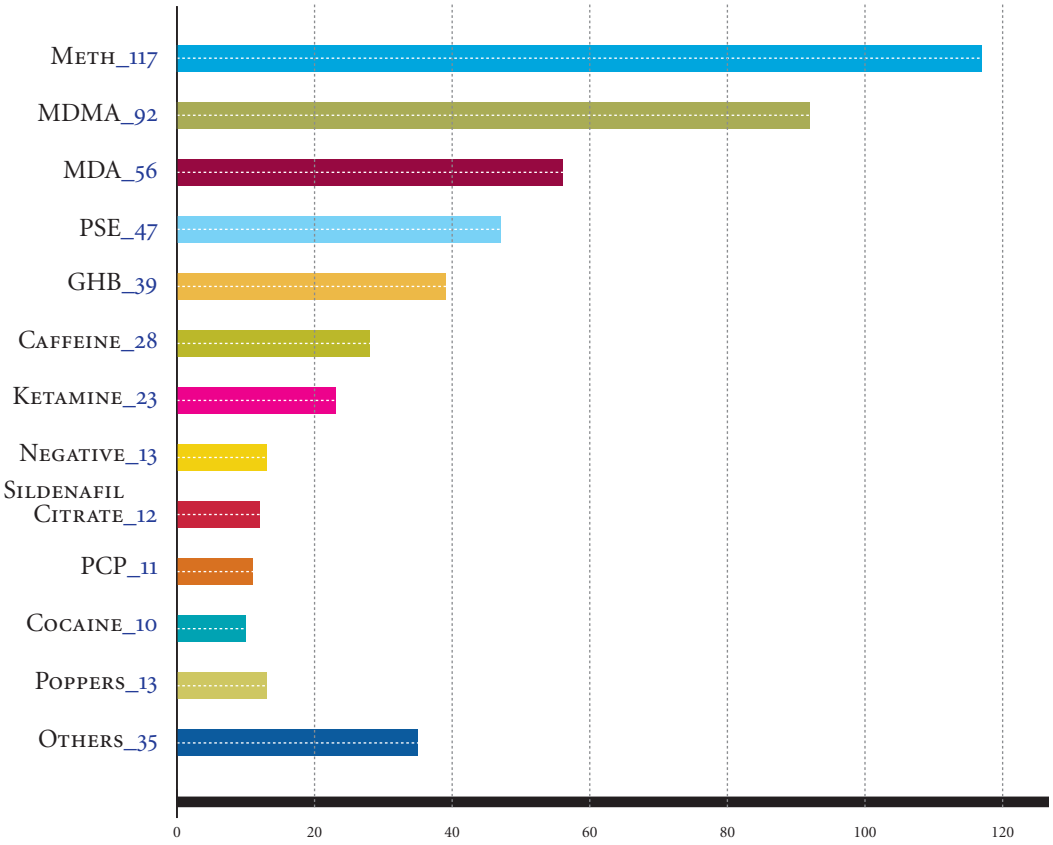
Table 2, **Substances found in all Rave Project samples**, provides a detailed list of all of the substances identified, even those whose frequency is not very high, while Diagram 2, **Substances found in all Rave Project samples**, focusses on the main substances identified in the samples. These are for the most part illicit drugs under the Controlled Drugs and Substances Act[1] or the Food and Drugs Act[2].

Table 2 — Substances found in all Rave Project samples

Drugs found	Frequency	Amount (%)
Methamphetamine	117	23.31
Suspected MDMA*	3	0.59
MDMA	92	18.18
MDA	56	11.07
Ephedrine and/or pseudoephedrine	50	9.88
Suspected Ephedrine and/or pseudoephedrine*	1	0.20
GHB	39	7.71
Suspected GHB*	2	0.40
Caffeine	28	5.53
Ketamine	23	4.55
Negative	13	2.57
Sildenafil citrate	12	2.37
PCP	11	2.17
Cocaine	10	1.98
Dextro-and/or levomethorphan	5	0.99
Lidocaine	5	0.99
Amphetamine	4	0.79
Isobutyl alcohol	4	0.79
Suspected piperonyl acetone*	4	0.79
Pseudoephedrine	3	0.59
4-methylaminorex	3	0.59
Isoamyl alcohol	3	0.59
Isoamyl nitrite	3	0.59
Isobutyl nitrite	3	0.59
Yohimbine	2	0.40
Diphenhydramine	2	0.40
5-methoxy-N,N-diisopropyltryptamine	1	0.20
Acetaminophen	1	0.20
GBL	1	0.20
Acetylsalicylic acid	1	0.20
Diazepam	1	0.20
Isosafrole	1	0.20
Lactose	1	0.20
Metandienone	1	0.20
MDEA	1	0.20
Oxandrolone	1	0.20
Tramadol	1	0.20
TOTAL	506	100

* These substances were not confirmed by a second separate analysis, as required by the criteria of the Drug Analysis Service.

Diagram 2 **Substances found in all Rave Project samples**



The samples are broken down by source in the following diagrams and charts:

- **Substances found in samples from raves and other seizures,** Diagram 3 and Appendix I;
- **Substances found in samples from the Border Services Agency (Customs),** Diagram 4 and Appendix II;
- **Substances found in clandestine laboratory samples, from 2 different laboratories during the 2002-2004 study period,** Diagram 5 and Appendix III.

Of all samples submitted and assessed, methamphetamine is the most frequently identified substance. In total, 117 samples of methamphetamine were identified; 102 from rave events, 13 from clandestine laboratories, and 1 from Customs. With regard to ecstasy (MDMA), in total, 92 samples were collected; 73 from rave parties, 4 from clandestine laboratories, and 15 from Customs. With regard to MDA, in total, 56 samples were identified; 50 from raves, 4 from clandestine laboratories, and 2 from the Border Services Agency (Customs).

Pseudoephedrine and/or ephedrine and pseudoephedrine were identified in 51 samples; 40 from raves, 2 from Customs, and 9 from clandestine laboratories. Of rave samples, GHB was found in 39 samples, ketamine was identified in 23 samples, with the exception of one sample collected by the Border Services Agency (Customs).

Diagram 3 **Substances found in samples from Raves and other seizures**

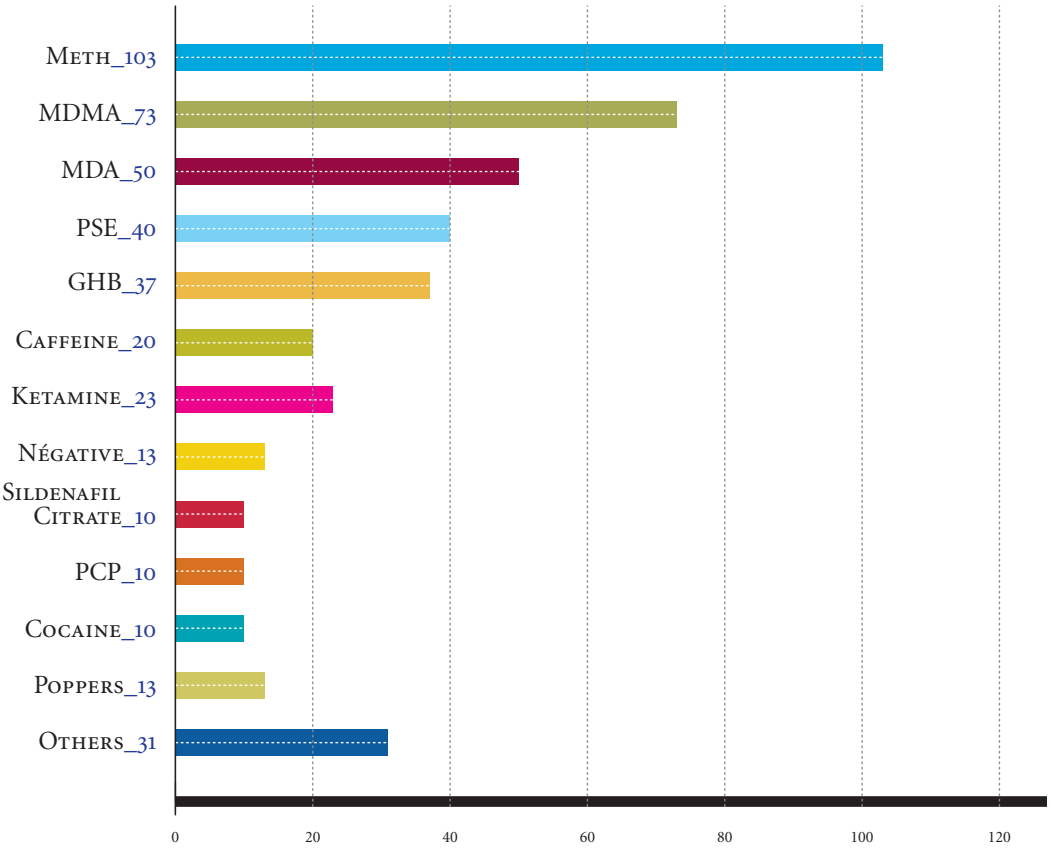
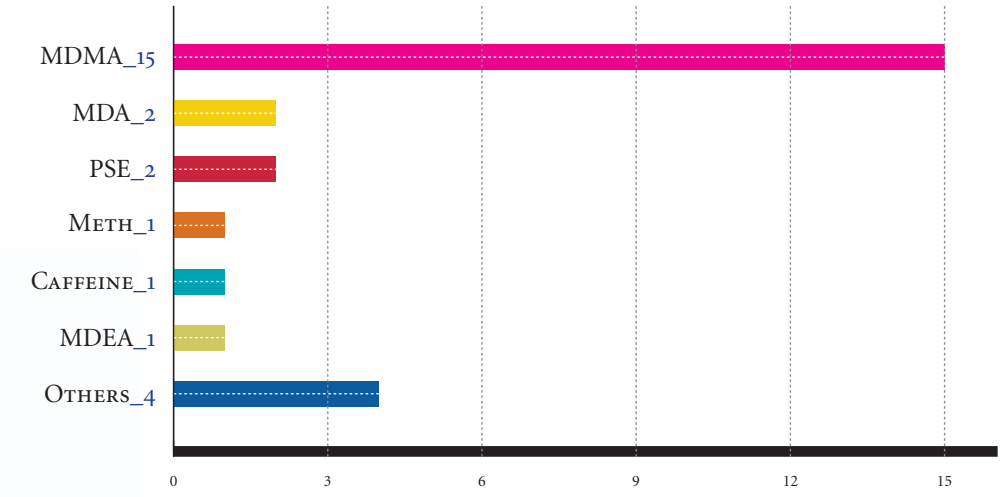


Diagram 4 **Substances found in samples from the Border Services Agency (Customs)**

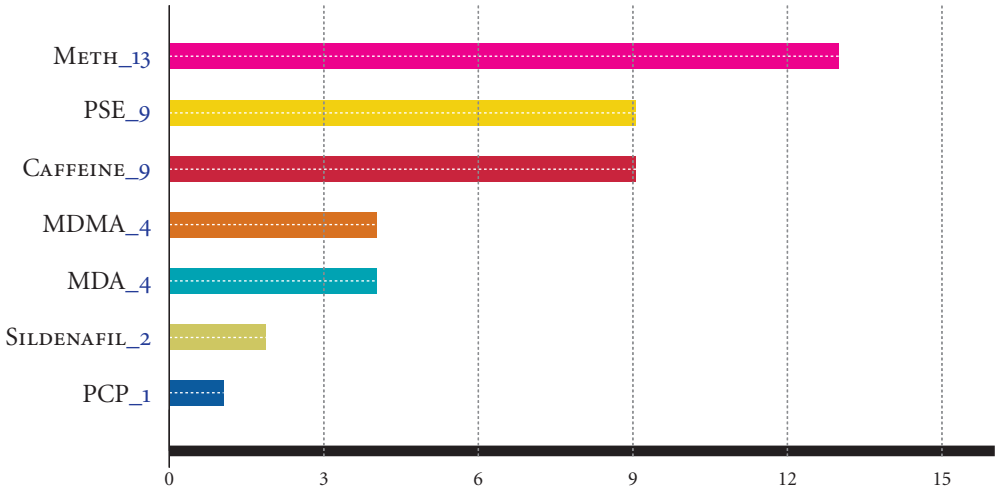


An interesting fact should be noted: Of the 26 samples seized by the Border Services Agency (Customs), 15 were MDMA while most of the samples seized at raves were methamphetamine, followed by MDMA, MDA, and ephedrine/pseudoephedrine.

The samples of the Border Services Agency (Customs) were seized at their point of entry into Quebec at the Pierre Elliott Trudeau (Dorval) Airport. Most of the drugs imported into Canada come from Western Europe, namely Germany, or from Belgium, the Netherlands, or France, or from the United States.

Most of the tablets containing only MDMA were produced in Europe, where clandestine laboratories produce it on a large scale. MDA is by comparison a North American phenomenon; this substance is not at all widespread in Europe. There is a lower incidence of imports of other drugs such as MDA, methamphetamine, pseudoephedrine/ephedrine, identified in the samples. It is expected that these substances are supplied locally, namely, in Quebec.

Diagram 5 — Substances found in clandestine laboratory samples from 2 different laboratories during the 2002-2004 study period



Note : PSE = ephedrine and/or pseudoephedrin

Drugs and their effects [3, 4, 5]

Amphetamine-type stimulants form a chemically related group of designer drugs.
They are subdivided into two groups:

- **Stimulants: amphetamine, methamphetamine, ephedrine, and pseudoephedrine.**
- **Hallucinogens: MDMA, MDA, MDEA, 2CB, 2CI.**

The first group of substances, central nervous system (CNS) **stimulants**, includes amphetamine, methamphetamine, and ephedrine/pseudoephedrine. Methamphetamine (speed) and amphetamine are classified as **major stimulants**. Both substances have similar effects, namely euphoria, a surge of energy, and a feeling of well-being. There are two optical isomers of amphetamine and methamphetamine: the l- (levogyre), and d- (dextrogyre) forms. The d-amphetamine and d-methamphetamine forms are highly active while the l-amphetamine and l-methamphetamine forms are far less so, and do not provide the effects anticipated by users.

Ephedrine and pseudoephedrine are two isomers. They were not differentiated for the present study and have not been quantitatively analyzed. They are also stimulants chemically related to methamphetamine; their effects are, however, far less pronounced, particularly for pseudoephedrine. According to the literature, these substances are very often used at rave parties.

The second major group, that of CNS **hallucinogens**, is largely represented by MDMA (ecstasy) and MDA which are sometimes classified as amphetamine substitutes. At the same time, these drugs are structurally related to amphetamine and to phenylethylamine (mescaline).

The effects of these substances differ from those of amphetamine-type stimulants. They have stimulating, and in higher doses, hallucinogenic effects. In addition, MDMA has entactogenic properties (increase in introspective ability) and empathogenic properties (ability to put oneself in someone else's place and understand what they feel). Other possible effects are euphoria, intensified emotions, and increased sensuality.

Another group of samples was also targeted, the alkyl nitrites: amylnitrite or butylnitrite (poppers). They are found in volatile liquid form, their vapours inhaled. They are vasodilators sometimes used in medicine to treat certain heart conditions. The effects of "poppers" are euphoria, a feeling of intense internal heat, and heightened sensuality. Strong doses can result in dizziness, fainting, syncope, and respiratory depression. Combined with other vasodilators, they may cause cardiovascular collapse.

PCP and ketamine have similar effects. Both are **dissociative anesthetics**. They cause a distortion of the senses, hallucinations, and mind-body dissociation, among others. People who are intoxicated with these substances experience difficulty concentrating, speech difficulties, anxiety, and even panic attacks.

The effects of GHB vary depending on the dose. A low dose evokes muscular relaxation, and euphoria, and reduces inhibitions. A medium dose results in somnolence and sedation, and a high dose, in speech difficulties, ataxia, or a lack of coordination. GHB, when mixed with alcohol, may result in amnesia.

The effects of the drugs are described in detail in Table 3.

Table 3 — Tabular description of main drugs and their effects

Classification	Subclass	Substance	Therapeutic dose	Major effects	Route of administration	Legislation[a]
CNS stimulant	Major stimulant	Amphetamine	10-20 mg	↑ energy, excitement ↑ body T°, heart rate, and blood pressure ↓ appetite	Oral, inhalation (smoked), intravenous	Schedule III
		Methamphetamine	10-20 mg			
		Cocaine	Variable 20-150 mg	↓ energy ↑ anxiousness ↑ self confidence	intranasal (snorted), inhalation (smoked), intravenous	Schedule I
	Minor stimulant	Caffeine	100 mg (1 cup of coffee)	↓ feeling of fatigue Nervousness, excitement ↑ cardiac activity	Oral	–
	Nasal decongestants	Ephedrine[b]	30-60 mg	Feeling of well-being Intense physical stimulation	Oral	Schedule VI
		Pseudoephedrine[b]		Less effect than ephedrine	Oral	
depressor CNS	–	GHB	1-4 g	Somnolence ↓ inhibitions Speech difficulties General anesthetic (very high dose)	Oral	Schedule III
	Volatile substances	Poppers	0.3 ml	Dizziness Orgasm intensification Respiratory problems	Inhalation	Food and Drugs Act
CNS disruptor	Hallucinogenic stimulant	MDA	100 mg	Entactogenic[c] Empathogenic[d] Loss of motivation Stimulant	Oral	Schedule III
		MDMA	100 mg			
	Dissociative anesthetic	PCP	5-10 mg	Visual and auditory hallucinations ↓ sensitivity to pain Mind-body dissociation	Intranasal, oral	Schedule I
		Ketamine	60-200 mg		Oral, intranasal, intramuscular	Food and Drugs Act

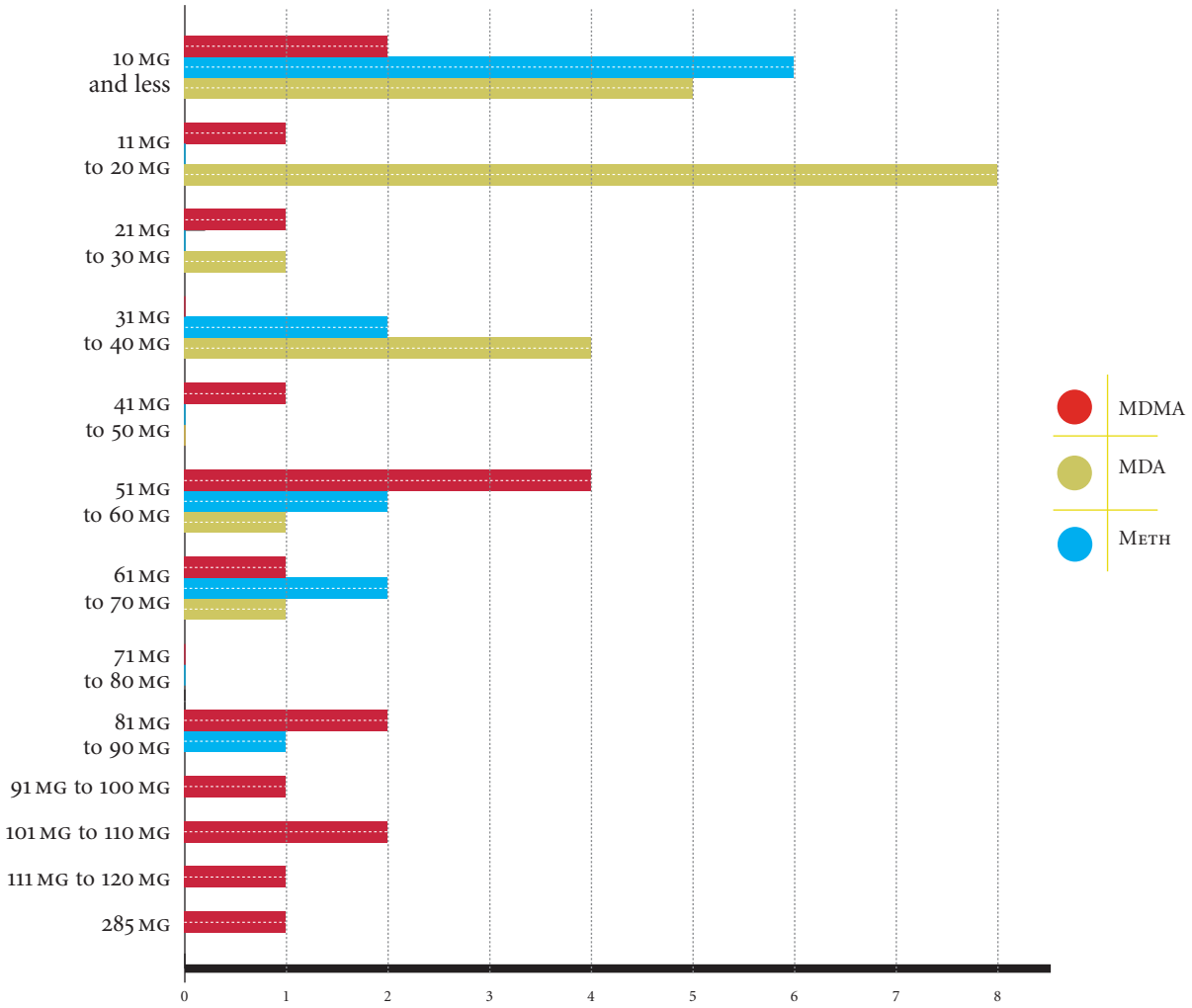
[a] The schedules cited in this section refer to the Controlled Drugs and Substances Act.
[b] In very high doses, these substances may have hallucinogenic properties.
[c] Entactogenic: Increases introspective ability.
[d] Empathogenic: People feel like they can put themselves in someone else's place and understand what they feel.

Drug dosages: Methamphetamine, MDMA, MDA, PCP, Ketamine, GHB [3, 4, 5]

The results of the substance identification and substance dosages are presented in the table in Appendix IV entitled **Sample composition and content by form**. This is a summary table that lists all of the substances present in the samples, their relative frequency in those samples, the number of samples available in quantities sufficient for dosage by substance, and mean dosage score.

Within the framework of this study, only certain substances were targeted to determine their content, these being methamphetamine, MDMA, MDA, GHB, ketamine, and PCP. The dosage results are presented in the associated diagrams and appendices entitled: **Dosage results for MDMA, MDA, and methamphetamine** (Diagram 6 and Appendix V); **Dosage results for GHB** (Diagram 9 and Appendix VI), **Dosage results for ketamine** (Diagram 8 and Appendix VII), and **Dosage results for PCP** (Diagram 7 and Appendix VIII).

Diagram 6 Dosage results for MDMA, MDA, and methamphetamine

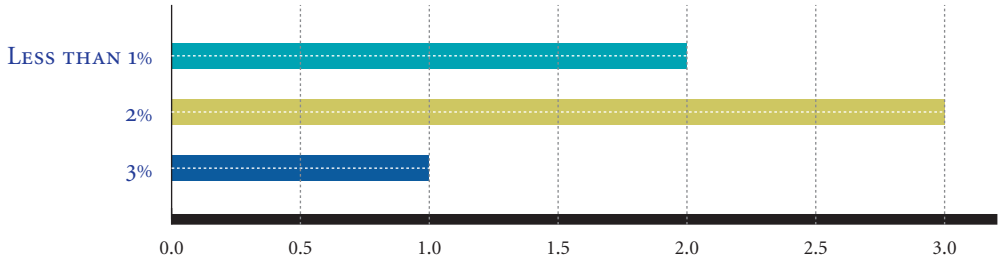


It should be noted that the dosage results obtained for amphetamine-type stimulants vary widely. With regard to methamphetamine, the dose having an effect is 10 to 20 mg per tablet, while the tablets analyzed varied in strength from 4 to 61 mg per tablet. In the course of analysis, the two optical isomers of amphetamine and methamphetamine, namely the l- (levogyre), and d- (dextrogyre) forms, were not separated, and were analyzed in the two isomeric forms, without distinction. Consequently, these results do not take into account the d- or l- forms. It should also be noted that methamphetamine is seldom presented in capsular form.

For MDA and MDMA, the dose delivering the effect sought by users is about 100 mg per tablet. The results obtained for MDMA fall between 4 and 285 mg per consumption dose, and between 5 and 85 mg for MDA. Low doses of MDA and MDMA are, in the great majority of cases, the second and third active ingredients of the sample while the main active ingredient of the same sample is found in greater quantities.

Another category of samples found at raves was ketamine, and at times, PCP. PCP (1-phenylcyclohexyl piperidine) is a dissociative anesthetic that is both a CNS stimulant and depressor. Its effects can be euphoria, relaxation, a sense of dissociation from surroundings, and hallucinations. The usual dose by oral consumption for PCP is 5-10 mg; a low dose corresponds to approximately 1-5 mg, whereas a dose of 10 mg or more is hallucinogenic.

Diagram 7 **Dosage results for PCP**

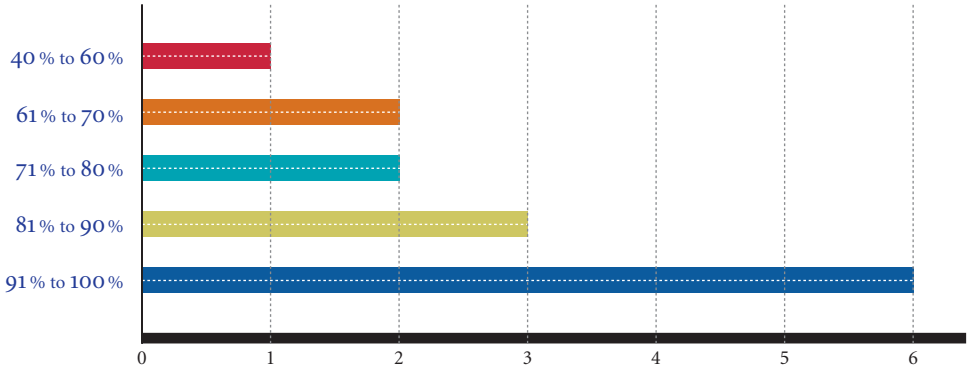


N.B.: one of the samples of less than 1% contained 0.8 mg of PCP while the other one contained only trace quantities (0.07%), and the samples containing 2-3% contained from 2.5 to 5 mg of PCP.

Within the framework of this project, 6 samples contained sufficient quantities of PCP for dosage assessment. One of the samples was in tablet form, with only 0.3% (0.8 mg) of PCP, and four samples in capsule form contained 2-3% (from 2.5 to 5 mg) of PCP. The sixth sample containing trace quantities of PCP was a green powder and would have required that the user consume 10 g of this powder to have the effects of 7 mg of PCP.

Ketamine is also a dissociative anesthetic, capable of potentially leading to amnesia and hallucinations; nevertheless, its effects are less powerful than those of PCP and of a much shorter duration. The doses taken orally were 350-500 mg. A high dose of approximately 500 mg could cause a marked dissociative effect with a feeling of out-of-body experience. Nevertheless, it seems that ketamine is most often snorted (approximately 100 mg/dose). It should be noted that several samples received for analysis were in "sniffers."

Diagram 8 **Dosage results for ketamine**



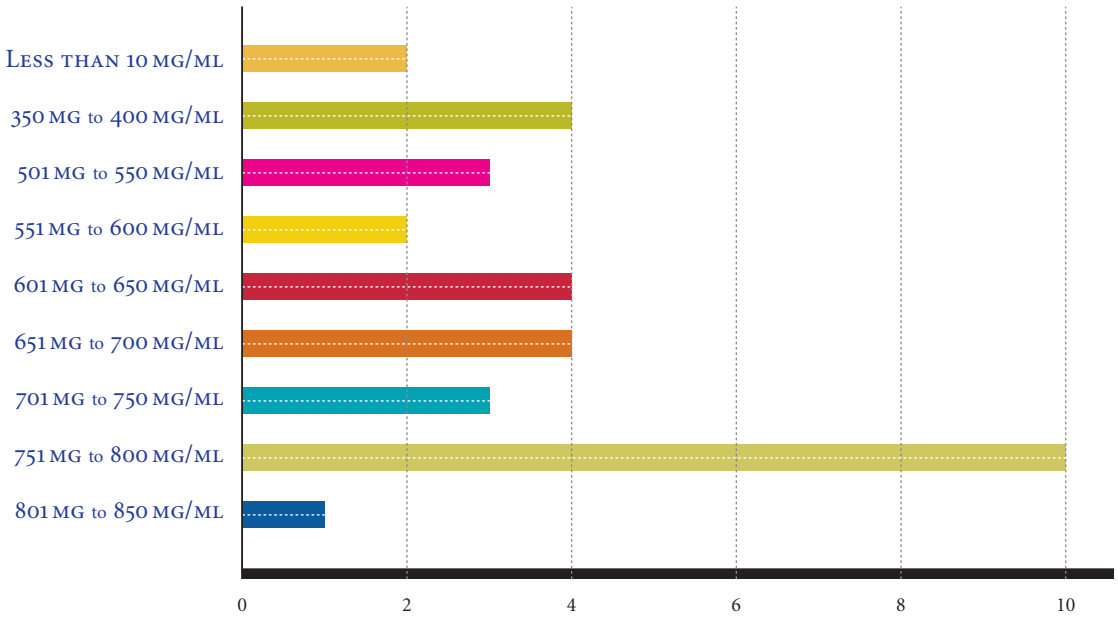
Ketamine samples seized on the illicit drug market are usually in powder form with a few in liquid form. According to results, it is the only active ingredient in these samples. Of the 14 ketamine samples assessed, six were 100% pure, two were close to 90%, and five were 68% to 84%. Just one of the samples was 49% pure, and the cutting agent used could not be determined due to insufficient sample quantity. One sample in liquid form was also found to contain 100 mg of ketamine per ml.

GHB (gamma-hydroxybutyrate) is another drug frequently found at raves. It is a central nervous system depressor. The effects of GHB are relaxation, disinhibition, and euphoria. GHB also has anabolic effects, stimulating the release of the growth hormone. GHB mixed with alcohol may lead to amnesia. A low dose (less than 1 g) causes muscular relaxation, anxiolysis, a reduction in inhibition, or euphoria; a moderate dose (1-2 g) results in sedation, somnolence, or ataxia, and a high dose (2-4 g) may result in jabbering, significant ataxia, or a hypnotic state. In excess of 4 g, it could result in general anesthetic.

The samples of GHB received in the laboratory were all in liquid form. The results for GHB are very interesting given that there were previously no quantitative data available. Of the 39 GHB samples seized within the study, 33 were in sufficient quantity for dosage assessment. The range of values is from 5.5 mg/ml to 835 mg/ml. Distribution of the samples by concentration seems very broad, however, the higher values tend to be more prevalent. Of 33 samples, 11 are in the vicinity of 800 mg per ml. The mean concentration value of the samples is 651.5 mg/ml. This mean value does not take into account 2 samples containing 5.5 mg/ml as these values are not representative.

In some cases, the samples from one seizure are of the same concentration as samples from other seizures. Other substances related to GHB such as 1,4-butanediol were not identified in any of the seized samples. Unlike gamma-butyrolactone (GBL) and 1,4-butanediol, GHB in solution is odourless and tasteless, has a texture very much like water, and is very miscible with alcohol. GBL is also the essential precursor for the production of GHB and was detected as the only substance in only one sample. Like 1,4-butanediol (BD), GBL can also be ingested and will subsequently be metabolized into GHB.

Diagram 9 Dosage results for GHB



Most of the samples were in 4 ml vials, corresponding to one dose, only two samples contained nearly 1 litre of GHB, and a few contained approximately 20 ml of the liquid. This would indicate that on average, taking the full 4 ml vial would be the equivalent of taking a strong dose of approximately 2.6 grams.

Substance combinations found in samples

In Table 4, the samples grouped together are recorded by number of substances identified and number of samples of each in these groups. Most of the samples, 65.3%, contained a single substance but for 34.7% of the samples, complex combinations of 2 to 7 different substances were found.

Table 4 Poly-drug groups contained in all samples (all forms combined)

Sample composition	Number of samples	Percentage (%)
One substance	224	65.3
Two substances	91	26.5
Three substances	18	5.2
Four substances	6	1.8
Five substances	2	0.6
Six substances	1	0.3
Seven substances	1	0.3
TOTAL	**343**	**100**

Table 5 Poly-drug groups contained in tablet/capsule samples

Sample composition	Number of samples	Percentage (%)
One substance	125	54.1
Two substances	81	35.1
Three substances	16	6.9
Four substances	5	2.2
Five substances	2	0.9
Six substances	1	0.4
Seven substances	1	0.4
TOTAL	**231**	**100**

Samples in powder and liquid form as well as negative, pharmaceutical, and other samples (yohimbine, etc.) have been removed from Table 4 to keep only those tablet/capsule samples of interest in Table 5. The reason for this selective presentation is to focus on the actual mixtures present in the tablets targeted (those containing ecstasy, speed, etc...).

The identification of more than two different substances was confirmed in 45.9% of the tablet/capsule samples; this reality is moreover reflected in the data compiled by the Drug Analysis Service (DAS) in the course of its regular analyses of samples obtained from seizures made by the various police forces during police investigations. These data, in fact, show the existence of a very broad variety of mixed substances, corroborating the results of the present study. The tablets and capsules sold on the street may be sold as containing a single substance while in fact their composition is quite obscure and the presence of drug mixtures tends to be unknown and users unaware of them.

In certain areas of Canada, sildenafil citrate (Viagra™) is reputed to also have been identified in mixtures of substances found in the composition of samples sold as ecstasy. Within the framework of this study, sildenafil citrate was analyzed but was never identified in the samples composed of several substances. It was only determined to be the only drug in genuine or counterfeit drug tablets.

Table 6 Poly-drug groups contained in liquid/powder samples

Sample composition	Number of samples	Percentage (%)
One substance	99	88.4
Two substances	10	8.9
Three substances	2	1.8
Four substances	1	0.9
TOTAL	**112**	**100**

Most of the liquid and powder samples in this table are found in the group containing only one substance. Liquids are above all represented by GHB and these samples generally contain only the main drug. They may, however, also contain GBL if the synthesis reaction is incomplete. In the group containing two substances, the samples of "poppers" analyzed were composed of IAN and IAA or IBN and IBA. Most of the powder samples contain ketamine as the main and only substance. Poly-drug samples are very rarely found in powder form.

The breakdown of drug combinations found is presented in Appendix IX, **Summary table of substance combinations found in tablets and capsules** and can be followed in the tables for each group: two drugs, three drugs, etc…

Analysis of polydrugs in tablets and capsules

Table 7 illustrates the proportion of samples in tablet or capsule form that contain amphetamine-type stimulants alone or in combination with others. In the case of MDA, 37% of tablets contain only this substance. In addition, 37% of the tablets are a combination of MDA and methamphetamine. The MDA-MDMA combination does not seem popular; there is only one such sample. As for MDMA, most tablet (62%) and capsule (77%) samples contain only this substance. In a lesser proportion, the MDMA-methamphetamine combination is also found. Finally, with regard to methamphetamine, 50% of tablets contain methamphetamine as the only substance. A combination of MDA, MDMA, amphetamine, and ephedrine and/or pseudoephedrine was also found. Based on these results, users of these drugs run an equal chance of consuming a tablet or capsule with a single substance as they do of consuming a very variable mixture.

In referring to Table 5, there are various complex combinations of drug substances, with anywhere from two to seven substances that are listed in Appendix IX. Most of the combinations contain two substances; the case for 81 samples. The most prevalent combination is METH+EPH/PSE which recurs 14 times. It should, however, be noted that methamphetamine is very often synthesized from pseudoephedrine or ephedrine, hence its presence in the final product is explained by an incomplete chemical reaction. This comment is also valid for other combinations containing the METH+EPH/PSE pair. The MDMA+METH combination was found in 12 cases, the MDA+METH pair, in 7 cases; moreover, other combinations are found only 2 to 4 times: MDMA+MDA; MDMA+EPH/PSE; MDA+EPH/PSE; MET+AMPHET; METH+CAF; etc…

The combination of three substances mixed together is considerably less commonly encountered; 16 samples, or 6.9%. There was a wide variety of these mixtures (MDA+MDMA+METH; METH+MDMA+EPH/PSE; MDMA+MDA+CAF; MDMA+METH+CAF) to name only these, but the repetition of these combinations was minimal, and no conclusions can be drawn as to trends, as a broad diversity is generally encountered.

The combination of more than four drugs seems rarer; 9 samples, or 3.9%. It is not known whether these multiple mixtures are intentional or the result of cross-contamination; clandestine laboratories do not operate according to good manufacturing practices (GMP), and poor operating conditions could be the underlying reason for major contaminations.

Within the framework of this study, we cannot interpret the results from a toxicological standpoint or elaborate on the possible consequences of the ingestion of such tablets/capsules containing several substances, but we believe that this analytical data can provide support to various stakeholders in the health and other fields.

According to analyses conducted, the logos on the punches used to make the impressions on tablets do not seem to be exclusive to any specific drug, nor are they a reliable indicator of the substance contained in the tablet. Moreover, the content of the substance contained in each tablet varies widely, irrespective of the logo. Designer-drug users can therefore rely neither on the logo nor on the exact composition of the drug.

Table 7 Frequency of amphetamine-type stimulants and their main combinations in tablets and capsules seized at Raves

Main drug	Second substance	Tablets		Capsules	
		Number	%	Number	%
MDA	–	13	37	5	71
MDA	MDMA*	1	3	2	29
MDA	METH*	13	37	–	–
MDA	OTHER**	8	23	–	–
TOTAL MDA		35	100	7	100
MDMA	–	32	61	10	77
MDMA	METH*	14	27	1	8
MDMA	OTHER**	6	12	2	15
TOTAL MDMA		52	100	13	100
METH	–	36	50	–	–
METH	MDA*	6	8	–	–
METH	MDMA*	9	13	1	50
METH	AMPHET*	2	3	–	–
METH	PSE	13	18	1	50
METH*	OTHER**	6	8	–	–
TOTAL METH		72	100	2	100

* Some samples may contain other substances. These substances are present in lesser quantities.
** Other = other drugs present (PSE, caffeine, or other)

Clandestine laboratories

Chapter 2

Table 8 Drugs synthesized in clandestine laboratories in Quebec, dismantled by the Drug Analysis Service of Health Canada (DAS) between 2002 and 2004

Drug	Number of clandestine laboratories
Methamphetamine	6
MDA	4
MDMA	4
Pseudoephedrine	2
GHB	1
sildenafil citrate	1
TOTAL	18

*The results in this table are not part of the present study, they are taken from statistics from the Drug Analysis Service of Quebec.

A clandestine laboratory is defined as any stationary or mobile location where a drug is produced, processed, or extracted. Drug production includes both growth and synthesis. The latter consists of mixing chemical products together to obtain a final product that is different from the original products. "Processing" is the action of modifying the physical properties of a substance. This definition includes pressing a powder into tablets, or evaporating a solution to obtain the dry product (the case for ketamine). Finally, "extraction" means separating a substance from the compound it is part of. There are therefore several different types of laboratories: laboratories for synthesis, extraction, growing, production of tablets using punches, etc.

Since the 1990s, the profile of clandestine laboratories in Quebec has greatly changed. Until 1998, most of them grew hallucinogenic mushrooms (psilocybin) and cannabis, extracted cannabis resin, and synthesized PCP. Only a minority of laboratories produced amphetamines. It was only in 1998 that the first MDMA laboratory was dismantled. Between 1998 and today the trend has been reversed the production of methamphetamine is the most popular, followed closely by MDA and MDMA. In 2000, the first GHB-producing laboratory was discovered. This kind of laboratory is more difficult to detect because the synthesis of GHB is very simple and requires a minimum of equipment and knowledge. It requires only that a solution of sodium hydroxide be mixed with GBL which is used in many industrial cleaning products. In Quebec, a laboratory with a capacity of 13 million doses was discovered in 2002.

In the case of rave drugs, syntheses are very diverse. In the case of amphetamine-type stimulants (ATS), the syntheses are more complex and represent greater danger. The chemical products used for synthesis represent a danger but it is often the lack of experience of do-it-yourself chemists "cooks" that leads to accidents. They usually have no chemistry background and find recipes in books or on the Net. There are several different synthesis routes for each ATS. In the case of methamphetamine, the most common synthesis uses ephedrine, red phosphorus and hydriodic acid (HI). The chemical reaction consists of heating the reactive chemicals together, and this is the step that presents the greatest danger. In these places, there are large quantities of solvents and a heat source in the presence of solvents can cause explosions and fires. In 2002, a laboratory producing methamphetamine was dismantled and there were sufficient chemical products on the premises to make 300,000 tablets.

Synthesis of MDA is also very widespread in Quebec. The chemical products used in this reaction are different from those used for methamphetamine, but are just as dangerous. One of the reactive substances, lithium aluminum hydride, is flammable in the presence of water or humidity. It is also not uncommon to see clandestine laboratories equipped to produce more than one type of drug. Sometimes, the facilities for pressing tablets are found on the spot.

This type of location represents a great potential danger. Fumes from solvents, chemical products, and intermediary reactive products, when not controlled by an efficient ventilation system, can be very harmful to health and present a high risk of fire and explosion. As well, in most cases the elimination of hazardous products is not done in an environmentally safe manner. For this reason, clandestine sites or laboratories that are found must be decontaminated.

Table 9 Substances found in clandestine laboratory samples from 2 different laboratories during the 2002-2004 study period

Drugs found	Number of times	%
Methamphetamine	13	31.0
Caffeine	9	21.4
Ephedrine and/ or pseudoephedrine	6	14.3
MDMA	4	9.5
MDA	4	9.5
Pseudoephedrine	3	7.1
Sildenafil citrate	2	4.8
PCP	1	2.4
TOTAL	**42**	**100**

In the present study, the samples from two clandestine chemical synthesis laboratories were studied (see Table 9).

It is interesting to note that methamphetamine is the drug most commonly found in 13 samples. Ephedrine and/or pseudoephedrine rank second, on a par with caffeine. Only a few of the samples contained only one of these two products. Like ephedrine and/or pseudoephedrine, caffeine has stimulating properties. It is therefore not surprising to find these two substances in tablets or capsules as cutting agents. Furthermore, ephedrine and/or pseudoephedrine are the precursors for the production of methamphetamine, that is to say, products essential to its production.

Clandestine laboratories produce counterfeit sildenafil citrate (Viagra™) tablets. They greatly resemble the genuine tablets marketed by the pharmaceutical industry. Most of them are blue and lozenge-shaped and have the "Pfizer" logo. There is, however, no indication of the source of the sildenafil citrate.

Clandestine laboratories have one thing in common: they do not meet any production quality standards. They are very often poorly maintained locations with inadequate ventilation systems and equipment and are not often cleaned between the various syntheses. Also, due to inexperience and/or a lack of training on the part of the "cooks," the chemical reactions are not conducted under ideal conditions, which sometimes results in undesirable products from an intermediary reaction or from original products finding their way into the finished products. These products are sometimes more harmful to the users' health than the final product of interest.

Comparison of drug analysis results obtained in Quebec and British Columbia

CHAPTER 3

This chapter is a comparison between the results of the present study and the 2001 Vancouver study in British Columbia. The Quebec study, which covered major events in the major cities of Montreal and Québec City, only covers the analytical aspect while the study conducted in British Columbia also addresses users' habits. For this reason, within the framework of our study, it is impossible to make the connection between intentional and unintentional poly-drug use as was done in Vancouver.

The comparison between these two studies can therefore only be made on the level of analytical results. The table below presents the results for this comparison: **Percentage of time various ingredients were present in tablets, capsules and powder seized at raves in Quebec between 2002 and 2004** was created the same way as the Vancouver table to better grasp the common points and the differences.

The biggest difference is with regard to MDMA and methamphetamine. A little more than half the British Columbia tablets contain MDMA while in Quebec, it is only one third. As for the number of substances mixed with MDMA, the numbers are relatively similar; 12 substances in Quebec versus 8 substances in British Columbia.

In Quebec, methamphetamine accounted for nearly half the tablets, only one fifth of the powders, and 7% of the capsules. In British Columbia, methamphetamine was found in 43% of powders and is less often found in tablets; in only 12% of tablets.

Another difference was observed for MDA. This substance represents 47% of capsules in British Columbia compared with 17% of tablets, and 7% of powders. In Quebec, MDA is found in 21% of tablets, 20% of capsules, and 4.5% of powders. The difference between these two forms (tablets and capsules), is less pronounced in Quebec than in British Columbia.

According to a report aired by ABC News, September 27, 2002, in British Columbia, during raves, the tendency was to consume sildenafil citrate combined with methamphetamine in the same formulation, to increase sexual performance and at the same time, the ability to dance all night.

Nevertheless, sildenafil citrate was not identified in the poly-drug mixture in Quebec. It was found in separate form, but this does not exclude the fact that users can take it at the same time as amphetamine-type stimulants. This reality cannot be compared with that of Vancouver. Sildenafil citrate was not reported in their study; either it was not on the 2001 rave market, or it was not sought out for analysis.

For the other substances identified, such as for example, PCP, ketamine, and caffeine, the results are similar in the two studies. The percentage of substances found in the samples and the proportions of their forms (tablets/capsules/powder), are very comparable.

Based on the results of interviews conducted with drug users in Vancouver, part of the users intentionally mixes substances at raves. Nevertheless, most users believe they are consuming a single substance, while the numbers in brackets prove the contrary; each of the substances listed was often found to be mixed with several other substances.

The results of the two studies clearly show a disturbing fact; that there is probably a great deal of poly-drug use available on the illegal market and, according the Vancouver study, users still do not know what they are consuming.

Table 10 — Percentage of time various ingredients were present in tablets, capsules, powder seized at raves in Quebec between 2002 and 2004*

Ingredient	% of seized tablets containing ingredient (N=220)	% of seized capsules containing ingredient (N=41)	% of seized powder samples containing ingredient (N=44)
Ecstasy (MDMA)	33.2 % (12)	41.5 % (6)	11.4 % (3)
MDA	20.9 % (9)	19.5 % (3)	4.5 % (3)
Ephedrine/pseudoephedrine	17.2 % (10)	21.9 % (4)	2.3 % (3)
Methamphetamine (speed)	48..2 % (11)	7.3 % (2)	18.2 % (3)
Caffeine	10 % (8)	14.6 % (1)	–
Phencyclidine (PCP)	1.4 % (6)	17 % (3)	2.3 % (3)
Ketamine	0.45 % (3)	–	50 % (1)
Cocaine	–	2.4 % (2)	20.4 % (2)
Dextromethorphan	2.7 % (3)	–	2.3 % (1)
Codeine	–	2.4 % (2)	–
Amphetamine	1.8 % (7)	–	–
MMDA	–	–	–
MDEA	0.45 % (-)	–	–
PSE	1.4 % (7)	–	–
Sildenafil citrate	5.45 % (-)	–	–

*Number in brackets represents the number of different drugs found in combination with ingredient.

Table 11 — Percentage of time various ingredients were present in tablets, capsules, and powder seized at raves in British Columbia*

Ingredient	% of seized tablets containing ingredient (N=186)	% of seized capsules containing ingredient (N=194)	% of powder seizures containing ingredient (N=69)
Ecstasy (MDMA)	53 % (8)	32 % (9)	19 % (5)
MDA	17 % (9)	47 % (10)	7 % (5)
Ephedrine/pseudoephedrine	15 % (8)	29 % (11)	1 % (1)
Methamphetamine (speed)	12 % (8)	28 % (11)	43 % (8)
Caffeine	10 % (7)	18 % (10)	14 % (6)
Phencyclidine (PCP)	5 % (4)	10 % (9)	1 % (1)
Ketamine	4 % (5)	2 % (8)	36 % (7)
Cocaine	3 % (6)	8 % (7)	6 % (1)
Dextromethorphan	3 % (6)	4 % (7)	0 % (s/o)
Codeine	3 % (1)	1 % (3)	1 % (1)
Amphetamine	2 % (2)	2 % (7)	1 % (3)
MMDA	0 % (1)	7 % (8)	1 % (4)

*Number in brackets represents the number of different drugs found in combination with ingredient.
NOTE: Drug analysis provided by RCMP Forensic Toxicology labs, UBC Faculty of Pharmaceutical Sciences, and Health Protection Branch labs.

Table from the report entitled Designer Drugs and Raves (second edition) [6]
Cpl. Scott Rintoul, RCMP Drug Awareness Service
Christy MacKillican, B.A., RCMP Drug Awareness Service
Chapter entitled "Intentional and Unintentional Poly-Drug Use Associated With Ecstasy Users"
(Russell Peel, Jenn Paul, Yvon Dandurand, and Darryl Plecas, Department of Criminology and Criminal Justice, University College of the Fraser Valley)
Published by the Addictive Drug Information Council (ADIC) 2001

Conclusion

The principal objective of the present study was to draw a current portrait of the substances sold on the illicit drug market in Quebec. In total, 356 samples were seized, mostly from rave parties. A smaller proportion came from the Border Services Agency (Customs), and from clandestine laboratories. Analyses confirm the presence of a wide variety of drug substances found in the samples. In total, 33 different substances were identified. The drug found most frequently was methamphetamine. This drug is very sought after at raves. Ecstasy or MDMA follows methamphetamine closely, followed by MDA (a derivative of MDMA). GHB is also found in several cases.

If the data is extracted from appendices I, II, and III, methamphetamine, MDMA, and MDA are the common drugs in seizures made by the Border Services Agency (Customs), at raves, and in clandestine laboratories.

Table 12 Percentage of drugs seized from the three different sources

Drugs	Customs %	Rave parties %	Clandestine Laboratoires %
MDMA	57.7	16.7	9.5
MDA	7.7	11.5	9.5
Méthamphétamine	3.8	23.4	31.0

MDMA is the main drug seized by the Border Services Agency (Customs). In fact, it represents nearly 58% of drugs seized. In addition, none of the logos on tablets containing MDMA seized by the Border Services Agency (Customs), at the Pierre Elliott Trudeau Airport in Dorval, were found in samples from rave parties or other searches. With regard to clandestine laboratories targeted in this study, the most frequently found substance is methamphetamine, also the substance most frequently found at rave parties.

Drugs such as MDMA, methamphetamine, and MDA were quantitatively analyzed when the samples received were in assessable quantities. With regard to amphetamine-type stimulants, the doses, namely the quantity of the substance contained in a tablet or capsule, varied from one tenth to 3 times the normal dose. As for GHB, most of the samples were in vials that contained 4 ml, which corresponds to one user dose. The results indicate that vials contained on average 2.6 g of GHB, and the vial with the highest concentration contained 3.3 g, while the usual dose of 1 to 2 g results in somnolence and sedation.

In addition to the wide variability of the dosage level, a great proportion of the samples contained more than two (2) substances. Only one sample contained seven (7) different substances. The combination of certain substances may be dangerous for the health of individuals and have effects that are completely different from what is expected. Users of these drugs therefore consume dangerous cocktails produced by clandestine laboratories.

The results of this study made it possible to brush a portrait of the current situation involving designer drugs found in the province of Quebec. All amphetamine-type stimulants identified are from illegal sources, that is, they are produced in clandestine laboratories. None of them was produced by a licensed pharmaceutical company, and these substances are all in violation of the Controlled Drugs and Substances Act.[1]

The trend that continues to emerge in Quebec seems to be an increase in amphetamine-type stimulants such as methamphetamine, MDMA, and MDA, in tablet and capsule form. As well, GHB and ketamine hold an increasingly important place in consumption habits at raves. The study also shows an absence of uniformity in terms of content, composition, and appearance of drugs contained in the seized samples. The only rule is randomness.

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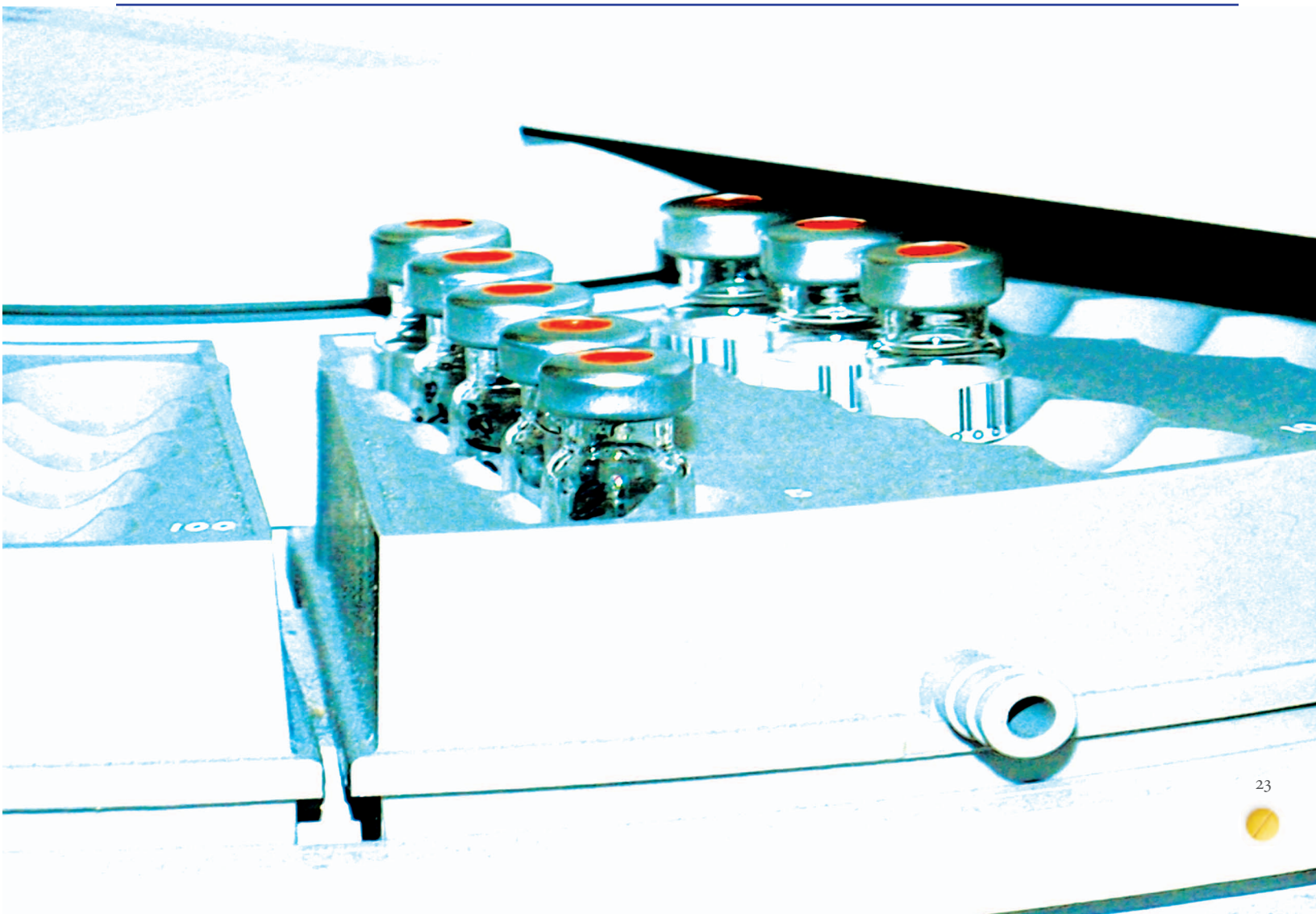

Appendix

Appendix I Substances found in samples from raves and other seizures

Appendix I

	Drugs found	Number of times	%
	Methamphetamine	103	23.4
	MDMA	73	16.7
	MDA	50	11.5
	Ephedrine and/or pseudoephedrine	40	9.2
	GHB	39	8.5
	Ketamine	23	5.3
	Caffeine	20	4.6
	Negative	13	3.0
	Cocaine	10	2.3
	PCP	10	2.3
	Sildenafil citrate	10	2.3
	Suspected piperonyl acetone	4	0.9
	Lidocaine	5	1.1
	Amphetamine	4	0.9
	Dextro-and/or levomethorphan	4	0.9
	Isobutyl alcohol	4	0.9
	Isoamyl alcohol	3	0.7
	Isoamyl nitrite	3	0.7
	Isobutyl nitrite	3	0.7
	4-methylaminorex	3	0.7
	Diphenhydramine	1	0.5
	Yohimbine	2	0.5
	5N,N-methoxydiisopropyltryptamine	1	0.2
	Acetylsalicylic acid	1	0.2
	Diazepam	1	0.2
	Dimenhydrinate	1	0.2
	GBL	1	0.2
	Isosafrole	1	0.2
	Metandienone	1	0.2
	Oxandrolone	1	0.2
	Acetaminophen	1	0.2
	Aprazolam	1	0.2
	Tramadol	1	0.2
	TOTAL	435	100

Appendix II Substances found in samples from the Border Services Agency (Customs)

Appendix II

Drugs found	Number of times	%
MDMA	15	57.7
MDA	2	7.7
Ephedrine and/or pseudoephedrine	2	7.7
Dextro- and/or levomethorphan	2	7.7
Methamphetamine	1	3.8
MDEA	1	3.8
Caffeine	1	3.8
Lactose	1	3.8
Tramadol	1	3.8
TOTAL	26	100

Appendix III Substances found in clandestine laboratory samples from 2 different laboratories during the 2002-2004 study period

Appendix III

Drugs found	Number of times	%
Methamphetamine	13	31.0
Caffeine	9	21.4
Ephedrine and/or pseudoephedrine	6	14.3
MDMA	4	9.5
MDA	4	9.5
Pseudoephedrine	3	7.1
Sildenafil citrate	2	4.8
PCP	1	2.4
TOTAL	42	100

Appendix IV Sample composition and content by form

Appendix IV

Sample from	Substance	Total number	Number dosable	Range		
Tablet	Methamphetamine	106	20	4.4 mg/tablet	to	61 mg/tablet
	MDMA	70	14	<1 mg/tablet	to	111 mg/tablet
	Suspected MDMA	3	–			
	MDA	46	12	<1 mg/tablet	to	62 mg/tablet
	Ephedrine and/or pseudoephedrine	38	–			
	Pseudoephedrine	3	–			
	Caffeine	22	–			
	Negative	9	–			
	Sildenafil citrate	12	–			
	PCP	3	1	0.3 %		
	Dextro- and/or levomethorphan	5	–			
	Amphetamine	4	–			
	Suspected piperonyl acetone	2	–			
	4-methylaminorex	3	–			
	Diphenhydramine	1	–			
	Yohimbine	2	–			
	Acetylsalicylic acid	1	–			
	Diazepam	1	–			
	Lactose	1	–			
	Metandienone	1	–			
	MDEA	1	–			
	Oxandrolone	1	–			
	Suspected ketamine	1	–			
	Tramadol	1	–			
Capsule	Suspected nefazodone	1	–			
	Methamphetamine	3	–			
	MDMA	17	3	4.4 mg/caps.	to	285 mg/caps.
	MDA	8	1	85 mg/caps.		
	Ephedrine and/or pseudoephedrine	8	–			
	Suspected ephedrine and/or pseudoephedrine	1	–			
	Caffeine	6	–			
	Cocaine	1	1	2.6 %		
	Negative	3	–			
	PCP	7	4	2 %	to	3 %
	Suspected piperonyl acetone	2	–			
	5-N-N-methoxydiisopropyltryptamine	1	–			
	acetaminophen	1	–			
	Isosafrole	1	–			

Appendix IV

Sample from	Substance	Total number	Number dosable	Range		
Powder	Methamphetamine	8	1	0.42 %		
	MDMA	5	1	94 %		
	MDA	2	–			
	Ephedrine and/or pseudoephedrine	1	–			
	Ketamine	22	14	49 %	to	100 %
	Cocaine	9	–			
	PCP	1	1	0.07 %		
	Lidocaine	5	–			
Liquid	GHB	39	33	5.5 mg/ml	to	835 mg/ml
	Suspected GHB	2	–			
	Ketamine	1	1	100 mg/ml		
	Isobutyl alcohol	4	–			
	Isoamyl alcohol	3	–			
	Isoamyl nitrite	3	–			
	Isobutyl nitrite	3	–			
	GBL	1	–			
	Negative	1	–			

Appendix V Dosage results for MDMA, MDA, and methamphetamine

Appendix V				
	Sample form	MDMA mg/tablet	MDA mg/tablet	Meth mg/tablet
	Tablet	111	62	61
		104	61	52
		102	59	38
		98	50	37
		86	39	36
		81	33	30
		56	5	27
		54	<1	19
		53	<1	18
		53	<1	18
		43	<1	14
		27	<1	14
		12		14
		<1		12
				11
				9.5
				6
				5.2
				4.6
				4.4
	Capsule	mg/caps	mg/caps	mg/caps
		285	85	
		69		
		4.4		
	Powder	%	%	%
		94		42
	TOTAL	18	13	21

Appendix VI Dosage results for GHB

Appendix VI			
	Sample from	GHB mg/ml	%
	Liquid	5.5	0.55
		5.5	0.55
		369	36.9
		372	37.2
		372	37.2
		385	38.5
		502	50.2
		530	53
		535	53.5
		580	58
		591	59.1
		612	61.2
		622	62.2
		640	64
		648	64.8
		660	66
		665	66.5
		676	67.6
		683	68.3
		705	70.5
		707	70.7
		737	73.7
		754	75.4
		761	76.1
		761	76.1
		779	77.9
		779	77.9
		781	78.1
		784	78.4
		784	78.4
		791	79.1
		796	79.6
		835	83.5
	Average	651.5	65.2

NB.: The mean value does not include the two 5.5 mg values.

Appendix VII Dosage results for ketamine

Appendix VII		
	Sample from	Ketamine %
	Powder	49
		68
		68
		71
		80
		84
		88
		90
		100
		100
		100
		100
		100
		100
		mg/ml
	Liquid	100

Appendix VIII Dosage results for PCP

Appendix VIII		
	Sample from	PCP %
	Powder	0.07
	Tablet	0.3
	Capsule	2
		2
		2
		3

Appendix IX Summary table of substance combinations found in tablets and capsules

Appendix IX

One substance	Number
MDMA	42
METH	36
MDA	18
Caffeine	8
PSE	7
PSEPH	3
REX	3
PCP	3
Diphen	2
Mandro	1
MDEA	1
5MTRYP	1
Total	125

Appendix IX

Tree substances	Number
MDA+DEX+susp. PMK	1
MDA+MDMA+susp. PMK	1
MDA+METH+MDMA	1
MDA+METH+susp. MDMA	3
MDA+METH+PSE	1
MDA+PSE+MDMA	1
MDMA+METH+CAF	1
MDMA+METH+susp. KET	1
METH+CAF+MDA	1
METH+MDA+DEX	1
METH+MDMA+PSE	1
NEF SOUPC+susp. PSE+COC	1
PCP+ACETAM+COD	1
KET+MDMA+METH	1
Total	16

Appendix IX

Two substances	Number
MDA+DEX	3
MDA+susp. DEX	1
MDMA+MDA	2
MDA+METH	7
MDA+PSE	2
MDMA+CAF	1
MDMA+ISOSA	1
MDMA+LAC	1
MDMA+METH	12
MDMA+PSE	3
METH+AMPHET	2
METH+CAF	4
METH+DEX	1
METH+MDA	5
METH+MDMA	9
METH+PSE	14
PCP+PSE	4
PSE+CAF	3
PSE+DMX	1
CAF+MDMA	1
CAF+METH	1
CAF+PSE	2
KET+MDMA	1
Total	81

Appendix IX

Four substances	Number
MDA+KET+ susp. PMK+MDMA	1
MDMA+KET+CAF+METH	1
MDMA+PSE+DMX+MDA	1
MDMA+METH+PSE+CAF	1
MDA+METH+PSE+CAF	1
Total	5

Appendix IX		
	Five substances	Number
	MDA+PSE+METH+MDMA+AMPHET	1
	METH+MDA+MDMA+PSE+CAF	1
	Total	2

Appendix IX		
	Six substances	Number
	PSE+MDA+METH+CAF+MDMA+PCP	1
	Total	1

Appendix IX		
	Seven substances	Number
	PSE+MDA+METH+CAF+PCP+ MDMA+AMPHET	1
	Total	1

NB.: The substances contained in mixtures are listed by order of quantity.

Appendix X Abbreviations and names of substances

Annexe X		
	Abreviation	Legal name
	5MTRYP	5-METHOXY-N,N-DIISOPROPYLTRYPTAMINE
	ACETAM	ACETAMINOPHEN
	AMPHET	AMPHETAMINE
	ASP	ACETYLSALICYLIC ACID
	BD	1,4-BUTANEDIOL (1,4-BD)
	CAF	CAFFEINE
	COC	COCAINE
	2CB	4-BROMO-2,5-DIMETHOXYPHENETHYLAMINE (Nexus)
	2CI	4-IODO-2,5-DIMETHOXYPHENETHYLAMINE
	DEX	DEXTROMETHORPHAN AND/ OR LEVOMETHORPHAN
	DIAZ	DIAZEPAM
	DIMEN	DIMENHYDRINATE
	DIPHEN	DIPHENHYDRAMINE
	EPH	EPHEDRINE
	GBH	4-HYDROXYBUTANOIC ACID AND SALTS
	GBL	GAMMA-BUTYROLACTONE
	IAA	ISOAMYL ALCOHOL
	IAN	ISOAMYL NITRITE
	IBA	ISOBUTYL ALCOHOL
	IBN	ISOBUTYL NITRITE
	ISOSA	ISOSAFROLE
	KET	KETAMINE
	LAC	LACTOSE
	LIDOC	LIDOCAINE
	MANDRO	METANDIENONE
	MDA	3,4- METHYLENEDIOXYAMPHETAMINE
	MDEA	3,4-METHYLENEDIOXYETHYLAMPHETAMINE
	MDMA	3,4-METHYLENEDIOXYMETHAMPHETAMINE
	METH	METHAMPHETAMINE
	MMDA	5-METHOXY 3,4-METHYLENEDIOXYAMPHETAMINE
	NEF	NEFADOZONE
	NEG	NEGATIVE
	OXAND	OXANDROLONE
	PCP	PHENCYCLIDINE
	PMK	PIPERONYL ACETONE
	PSE	PSEUDOEPHEDRINE AND/OR EPHEDRINE
	PSEPH	PSEUDOEPHEDRINE
	REX	4- METHYLAMINOREX
	ATS	AMPHETAMINE-TYPE STIMULANTS
	TRAM	TRAMADOL
	UK	UNKNOWN
	VGR	SILDENAFIL CITRATE
	YOH	YOHIMBINE