



Nicola Man, Vandit Sadaphale, Rachel Sutherland, Monica J. Barratt, Raimondo Bruno and Amy Peacock

This report was prepared by the National Drug and Alcohol Research Centre, UNSW Sydney For further information: <u>drugtrends@unsw.edu.au</u>



From 1st June 2023 to 31st May 2024, 20 cryptomarkets were monitored, of which 12 remained active at the end of the reporting period.

Archetyp MGM Grand

3 Dark Matter

4 Torzon

The largest cryptomarkets in the final month of monitoring (May 2024).



There was an average of 24,116 drug listings per snapshot in May 2024; 8.3% decrease per month over the 12-month period.

28% Cannabis

8.2% MDMA
7.9% Benzodiazepines
7.2% Cocaine
6.9% Opioids (excluding heroin)
5.8% Meth/amphetamines

Top 6 drugs across cryptomarket listings from June 2023 to May 2024.

Opioids excluding heroin



The market share of opioids (excluding heroin) showed the highest rate of increase from 5.3% in June 2023 to 7.0% in May 2024.

Hallucinogenic Mushrooms



The market share of hallucinogenic mushroom showed the greatest rate of decrease from 3.3% to 2.9% in the 12-month period.



Key Findings

- From 1st June 2023 to 31st May 2024, 20 cryptomarkets were monitored, of which 12 remained active at the end of the reporting period.
- The four markets reaching more than 10,000 listings in a snapshot during this period were ASAP, Incognito, Bohemia and Archetyp.
- In the final month of monitoring, Archetyp, MGM Grand, Dark Matter and Torzon were the largest cryptomarkets.
- There was an average of 24,116 drug listings per snapshot in May 2024, with an estimated decrease in listings of -8.3% per month as compared to June 2023 (n=57,883).
- Cannabis comprised the greatest percentage of drug listings from June 2023 to May 2024 (28%), followed by MDMA (8.2%), benzodiazepines (7.9%), cocaine (7.2%), opioids (excluding heroin) (6.9%), and meth/amphetamine (illicit) (5.8%).
- The market share of opioids (excluding heroin) showed the highest rate of increase from 5.3% in June 2023 to 7.0% in May 2024. The greatest rate of decrease in market share was observed for hallucinogenic mushroom from 3.3% in June 2023 to 2.9% in May 2024.

Figure 1. Word cloud of cryptomarkets monitored from June 2023 to May 2024.

ASAP Nemesis Kingdom Bohemia Dark Matter MGM Grand Nexus Elysium Vortex Abacus Quantum Cypher Colombia Connection Ares Cypher Tor ZOn Archetyp Tor 2Door Vice City

Note: The 8 cryptomarkets that closed before the end of May 2024 are in grey color font. The maximum size of the market (in the period from 1st June 2023 to 31st May 2024 as shown in **Table 1**) is proportional to the font size of the cryptomarket.



Table of Contents

KEY FINDINGS	2
BACKGROUND	5
Panel A. Terminology	5
FINDINGS	7
Profile of Cryptomarkets from 1st June 2023 to 31st May 2024	7
Which markets were monitored during this period?	7
Which markets closed during this period?	7
What markets were monitored for the first time during this period?	9
Which markets from this period have been monitored for the longest?	10
Which markets from this period were the largest based on number of drug listings?	10
Did the total market size (based on number of drug listings in the monitored markets) change this period?	over 11
Did the size of the individual markets change over the period?	12
Main Drugs Sold via Cryptomarkets from 1st June 2023 to 31st May 2024	13
What were the main drugs sold via cryptomarkets during this period?	13
Did the market share of the main drugs sold via cryptomarkets change over this period?	13
Did the market size (based on the number of listings) of the main drugs sold via cryptomarkets change over this period?	5 15
What drugs did the different markets sell over this period?	17
Funding and Copyright	21
Recommended Citation	21
Acknowledgements	21
Related Links	21
Contact us	21



Table of Figures

Figure 1. Word cloud of cryptomarkets monitored from June 2023 to May 2024	2
Figure 2. Markets monitored from June 2023 to May 2024	8
Figure 3. Number of drug listings by marketplace from June 2023 to May 2024	11
Figure 4. Percentage breakdown of listings by month and drug class over time from June 2023 to May	y 2024.

Table of Tables

Table 1. Characteristics of markets identified in this bulletin (ordered by date of first snapshot)	9
Table 2. Number of drug listings (including interpolated data for missed scrapes) and average month	nly
percent change (AMPC in %) on the markets monitored from 1 st June 2023 to 31 st May 2024	12
Table 3. Market share (percentage of listings) by drug class, and their average monthly percent chang	ge
AMPC in %) from 1 st June 2023 to 31 st May 2024.	14
Table 4. Market size (number of listings) by drug class and their average monthly percent change (AMPC	in
%) from 1 st June 2023 to 31 st May 2024	17
Table 5. Relative percent difference in drug market share between each market and the overall market fro	om
1 st June 2023 to 31 st May 2024	20



Background



This bulletin series reports on trends in the availability and types of drugs sold on the internet via cryptomarkets over the last 12 months (a new bulletin is released typically every four months). The current bulletin focuses on analysis of drug listings on cryptomarkets from 1st June 2023 to 31st May 2024.

<u>Drug Trends</u> has identified, crawled (or 'scraped'), extracted, categorised and analysed drug listings on cryptomarkets on a regular basis since 1st January 2014, formerly using VBA programming processes, and since 9th August 2018 using a range of programmed automated processes in Python that operate with minimal manual input. Following extraction of common text features across each listing (e.g., drug listing name, vendor name), individual listings were then categorised according to a pre-specified drug classification structure. Drug categorisation is carried out through rules-based text-matching in the first instance, followed by a long short-term memory (LSTM) artificial neural network (target predictive percentage 90%) that had been trained on historically categorised listings for those not matched through the former process. Further background and information regarding the methods are available for <u>download</u>.

Panel A. Terminology

- <u>Cryptomarkets</u> ('darknet markets') are online marketplaces that facilitate the purchasing of illicit goods and services via multiple sellers, and provide their users with anonymity via their location on the hidden web. Our data collection and reporting focuses on drug listings advertised on cryptomarkets. A large proportion of listings are of prohibited drugs though licit drugs (e.g., alcohol, paracetamol) may occasionally be advertised on these platforms (<u>Christin and Thomas, 2019</u>).
- A **snapshot** of the cryptomarkets is taken on a twice monthly basis, in the two weeks starting on the 1st and 15th of each month.
- Number of listings is the sum of listings per snapshot belonging to a specific market and/or drug class. For this measure, duplicate listings (defined as listings with identical names by a single vendor on a single market within the same snapshot) are removed. Listings are further deduplicated for quantity variants (see section 5.2.1 in the <u>Methods</u> document).
- **Market size** is defined as the number of drug listings per snapshot, overall, by market or by drug class.
- Market share is defined as the percentage of total drug listings by drug class.
- Average monthly percent change (AMPC) is the <u>relative</u> percent change in number or percentage of listings per month estimated using the Joinpoint regression program (<u>National</u> <u>Cancer Institute, 2022</u>).



Our reporting focuses on identified cryptomarkets which comply with the following: presented in English; have an accessible Tor link for scraping; have >1 vendor; vendors ship to and/or from Australia, or ship to and/or from multiple countries; and have had >100 drug listings. For a historical record of marketplaces monitored by Drug Trends, we refer the reader to our <u>interactive timeline</u>.



An accompanying public <u>online interactive data visualisation</u> is available, allowing viewers to interact with data collected since February 2014. Data in the current bulletin and the accompanying interactive visualisation are presented as twice monthly snapshots in each of the two weeks starting on the 1st and 15th of each month. We present data on number of listings observed in a given snapshot in the bulletin (see **Panel A**).

In this bulletin, we provide estimates of change over the 12-month reporting period by estimating average monthly percent change (AMPC) in number or proportion of listings per month. This is done using the Joinpoint regression program (<u>National Cancer Institute, 2022</u>) as detailed in the <u>Methods</u> document.

While these data can be considered reasonable estimates for trends in drug availability, we cannot guarantee exhaustive and/or immediate identification and capture of cryptomarkets once they emerge. As a result, there were some cryptomarkets which had existed for periods of time before our first scrape, resulting in a lack of data availability for these periods. In this bulletin, we show the date of the first post on a subDread ¹ for each monitored market to give an indication of when that market might have started (**Table 1**). There could also have been challenges in certain periods of time (e.g., distributed denial of service (DDoS) attacks on sites) that prevented a routine scrape of an identified market.

Since our findings do not reflect the total of all cryptomarkets existing in the reporting period, the analysis and estimates in this bulletin should not be used to infer the number of drug listings across all cryptomarkets. Further, they should only be considered a proxy indicator of drug availability: we have not provided any metric that reflects sales or purchasing of drugs via cryptomarkets. See <u>here</u> for further discussion of caveats to interpretation.

There are various approaches to collecting, collating, categorising and analysing cryptomarket data, and inherent challenges in these processes. Our monitoring is an ongoing process. Refinements to our reporting processes in each bulletin are reported in the accompanying methods document. We welcome feedback and suggestions so that we can continue to improve utility of these data and our reporting on them (contact us at <u>drugtrends@unsw.edu.au)</u>.

¹ Dread is a forum on the darkweb that is analogous to Reddit. A subDread is a forum group on Dread. The administrators of a cryptomarket often open a subDread for their cryptomarket. However, the market may not yet be fully functional as there can be several months of web development, beta testing and onboarding of vendors before a market becomes fully operational. Thus, it is likely that monitored cryptomarkets reported on in this bulletin reached our eligibility criteria sometime between their first subDread post and our first scrape.



Findings

Profile of Cryptomarkets from 1st June 2023 to 31st May 2024

Which markets were monitored during this period?



The current bulletin reports findings for the time period 1st June 2023 to 31st May 2024 (**Figure 2**). In the current monitoring period, 20 cryptomarkets were monitored. Table 1 shows the characteristics of these cryptomarkets since the date of our first scrape. Scraped data might be missing for some markets in certain periods (see Figure 2). In particular, we note that we performed a complete scrape for Abacus in the 1st July 2023 and 1st December

2023 snapshots only because the frequency of CAPTCHA was too labour-intensive for regular scraping. For this reason, Abacus was excluded from the analyses of trend over time in this bulletin. It is only presented with respect to Tables 1 and 5, and Figures 1, 2 and 6 which do not quantify trend in the number or proportion of listings over time.

Which markets closed during this period?



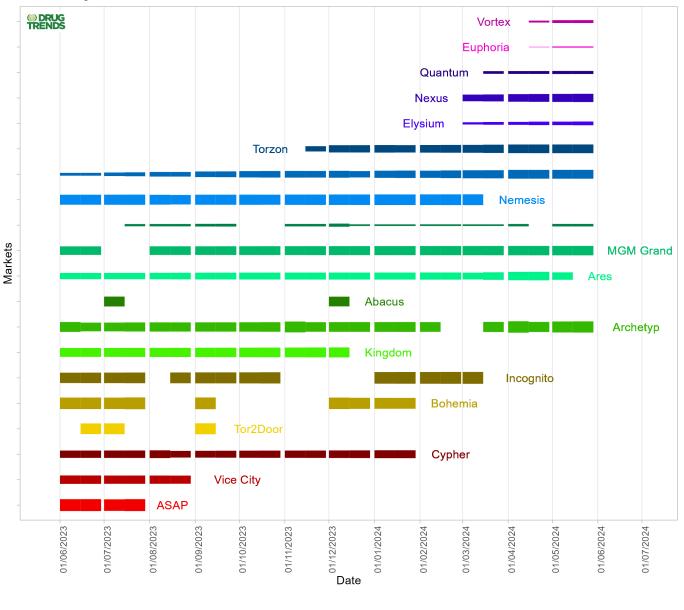
Of the 20 markets monitored in this bulletin, 8 markets (45% of monitored markets) closed within the reporting period for the following purported reasons (Table 1):

- ASAP was last scraped in the two weeks starting on 15th July 2023 and is considered to have <u>closed</u> due to a voluntary exit;
- Vice City was last scraped in the two weeks starting on 15th August 2023 and is considered to have closed due to an exit scam;
- Tor2Door was last scraped in the two weeks starting on 1st September 2023 and is considered to have <u>closed</u> due to an exit scam;
- Kingdom was last scraped in the two weeks starting on 1st December 2023 and is considered to have <u>closed</u> due to law enforcement seizure.
- Cypher was last scraped in the two weeks starting on 15th January 2024 and is considered to have closed due to an exit scam;
- Bohemia was last scraped in the two weeks starting on 15th January 2024 and is considered to have closed with a suspected exit scam;
- Incognito was last scraped in the two weeks starting on 1st March 2024 and is considered to have closed due to an exit scam;
- Nemesis was last scraped in the two weeks starting on 1st March 2024 and is considered to have closed due to law enforcement seizure;

The other 12 markets remaining active at the end of the reporting period were Archetyp, Abacus, Ares, MGM Grand, ColombiaConnection, Dark Matter, Torzon, Elysium, Nexus, Quantum, Vortex and Euphoria (Table 1).



Figure 2. Markets monitored from June 2023 to May 2024.



Source: DrugTrends, NDARC

Note: There are short breaks at the end of each month because the twice-monthly snapshots were based on 2-week intervals starting on the 1st and 15th of each month, i.e., days of the month after the 28th were excluded from monitoring. Extended breaks indicate periods where market crawling was not achievable or incomplete. The width of the bar is proportional to the log of the number of drug listings observed in each snapshot for each market.



Table 1. Characteristics of markets identified in this bulletin (ordered by date of first snapshot).

Market	Status as at	Earliest	First	Last snapshot	Duration	Maximum	
	May 2024	subDread	snapshot		in	number of	
	(reported reason ^a)	post			months ^b	listings ^c	
ASAP	<u>Closed</u> (voluntary exit)	9 th Apr 2020	1 st May 2021	15 th July 2023	27.0	12,284	
Vice City	Closed (exit scam)	26 th Aug 2020	1 st May 2021	15 th Aug 2023	28.0	3,435	
Cypher	Closed (exit scam)	8 th Feb 2020	1 st Jun 2021	15th Jan 2024	32.0	2,285	
Bohemia	<u>Closed</u> (possible exit scam)	23 rd May 2021	15 th Jul 2021	15th Jan 2024	30.5	11,828	
Tor2Door	Closed (exit scam)	3 rd Jul 2020	15 th Jul 2021	1 st Sep 2023	26.0	8,047	
Incognito	Closed (exit scam)	19 th Oct 2020	1 st Oct 2021	1 st Mar 2024	29.5	11,967	
Kingdom	<u>Closed</u> (law enforcement)	3 rd May 2021	1 st Jan 2022	1 st Dec 2023	23.5	5,346	
Archetyp	Open	19 th Apr 2020	15 th Jan 2022	Ongoing ^d	28.5*	10,007	
Abacus	Open	27 th Sep 2020	15 th Feb 2022	Ongoing ^{d, e}	27.5*	5,121	
Ares	Open	26 th Aug 2021	15 th May 2022	Ongoing ^d	24.0*	2,934	
MGM Grand	Open	26 th Apr 2021	15 th May 2022	Ongoing ^d	24.5*	4,278	
Colombia Connection	Open	3 rd Nov 2020	15 th Jul 2022	Ongoing ^d	22.5*	309	
Nemesis	Closed (law enforcement)	5 th Jun 2021	1 st Feb 2023	1st Mar 2024	13.5	7,622	
Dark Matter	Open	22 nd Sep 2022	15 th Mar 2023	Ongoing ^d	14.5*	3,353	
Torzon	Open	15 th Nov 2022	15 th Nov 2023	Ongoing ^d	6.5*	3,177	
Elysium	Open	28 th Jun 2023	1 st Mar 2024	Ongoing ^d	3.0*	395	
Nexus	Open	5 th Jan 2024	1 st Mar 2024	Ongoing ^d	3.0*	2,603	
Quantum	Open	f	15 th Mar 2024	Ongoing ^d	2.5*	298	
Vortex	Open	28 th Nov 2023	15 th Apr 2024	Ongoing ^d	1.5*	282	
Euphoria	Open	18 th Apr 2024	15 th Apr 2024	Ongoing ^d	1.5*	137	

Note:

^a Most probable reason for closure is given in brackets. ^b Duration of monitoring is the number of months between the start of the first snapshot and the end of the last snapshot, including when data could not be scraped from the cryptomarket. Where the cryptomarket was still active and monitored as of 31st May 2024 (indicated by *), the duration was computed as the number of months between the first snapshot and 31st May 2024. ^c Maximum number of listings in a scrape was computed from the snapshots over the 12-month reporting period. ^d The cryptomarket was active as of 31st May 2024. ^e Abacus was still active as of 31st May 2024; however, we only scraped the whole market in the 1st July 2023 and 1st December 2023 snapshots in this 12-month period. ^f Quantum's subDread could not be found on Dread.

What markets were monitored for the first time during this period?

Of the 20 markets in this reporting period, 6 markets were monitored for the first time. These are:

- Torzon, first monitored in the 15th November 2023 snapshot;
- Elysium, first monitored in the 1st March 2024 snapshot;
- Nexus, first monitored in the 1st March 2024 snapshot;
- Quantum, first monitored in the 15th March 2024 snapshot;
- Euphoria, first monitored in the 15th April 2024 snapshot; and
- Vortex, first monitored in the 15th April 2024 snapshot.

These markets were still active and being monitored at the end of May 2024.



Which markets from this period have been monitored for the longest?

Of the 20 markets monitored, the <u>following markets</u> had been monitored for two years or more:

- Cypher for 32 months between 1st June 2021 and 15th January 2024;
- Bohemia for 30.5 months between 15th July 2021 and 15th January 2024;
- Incognito for 29.5 months between 1st October 2021 and 1st March 2024;
- Archetyp for 28.5 months since 15th January 2022 (ongoing);
- Vice City for 28 months between 1st May 2021 and 15th August 2023;
- Abacus for 27.5 months since 15th February 2022 (ongoing);
- ASAP for 27 months between 1st May 2021 and 15th July 2023;
- Tor2Door for 26 months between 15th July 2021 and 1st September 2023;
- MGM Grand for 24.5 months since 15th May 2022 (ongoing); and
- Ares for 24.0 months since 15th May 2022 (ongoing).

However, as noted above, some of the cryptomarkets might have existed for some time before we started scraping them as indicated by the earliest date of the subDread forum posts (Table 1). Of these longest-running markets, only Archetyp, Abacus, Ares and MGM Grand remain open at the end of May 2024.

Which markets from this period were the largest based on number of drug listings?

The markets reaching more than 10,000 listings in a snapshot (Table 1 and Figure 3) were:

- ASAP with maximum number of listings in a snapshot of 12,284;
- Incognito with maximum number of listings in a snapshot of 11,967; and
- Bohemia with maximum number of listings in a snapshot of 11,828; and
- Archetyp with maximum number of listings in a snapshot of 10,007.

The smallest of the scraped cryptomarkets with a maximum of less than 1,000 listings per snapshot were Euphoria, Vortex, Quantum, ColombiaConnection and Elysium (Table 1).

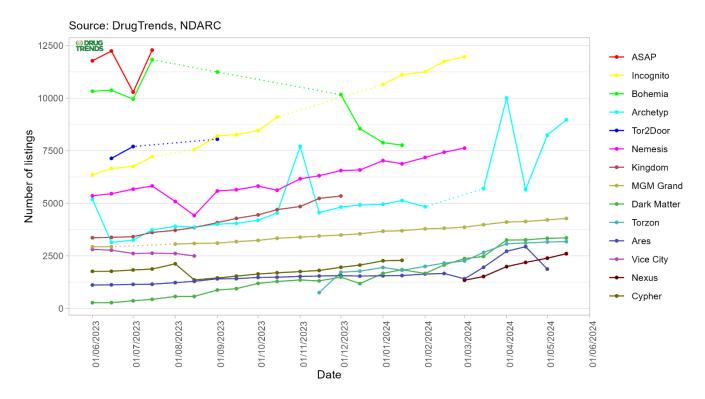
In the final month (May 2024), 11 markets were scraped. The markets whose mean number of listings per snapshot (including interpolated data for missing scrapes) was above the average of 2,277 listings in May 2024 were (Table 2):

- Archetyp with an average of 8,607 listings per snapshot;
- MGM Grand with an average of 4,244 listings per snapshot;
- Dark Matter with an average of 3,344 listings per snapshot;
- Torzon with an average of 3,168 listings per snapshot; and
- Nexus with an average of 2,496 listings per snapshot.





<u>Figure 3.</u> Number of drug listings by marketplaces with maximum of >1000 listings in a snapshot from June 2023 to May 2024.



Note: Markets with maximum of <1000 listings in a snapshot (i.e., Euphoria, Vortex, Quantum, ColombiaConnection and Elysium) were excluded to improve visibility. While Abacus had a maximum of >1000 listings in a snapshot, it was excluded because it only had two scrapes in the 12-month period. Complete interactive visualisation available <u>here</u>. The markets are ordered by maximum number of listings per snapshot over the 12-month period as shown in Table 1.

Did the total market size (based on number of drug listings in the monitored markets) change over this period?

The average monthly percent change in market size (or number of listings interpolated for missed scrapes in each cryptomarket) decreased over the reporting period (-8.3% per month; **Table 2**). This can be explained by the closure of 8 cryptomarkets as described above, the biggest of which was ASAP with a maximum of 12,284 listings, closely followed by Incognito and Bohemia with maximum of 11,967 and 11,828 listings, respectively. While we had started scraping five new cryptomarkets (i.e. Elysium, Nexus, Quantum, Euphoria and Vortex) satisfying our criteria in the last few months, all except Nexus were still relatively small markets.



Table 2. Number of drug listings (including interpolated data for missed scrapes) and average monthly percent change (AMPC in %) on the markets monitored from June 2023 to May 2024.

Market (Number of months) ^a	First snapshot ^b	Last snapshot ^b	Mean in Jun 2023 °	Mean in May 2024 ^c	AMPC (95%Cl) ^d
ASAP (2)	11,773	12,284	12,007	_ e	-0.9 (-16.0, 16.6)
Incognito (9.5)	6,350	11,967	6,500	_ e	7.4 (6.7, 8.0)*
Archetyp (12)	5,192	8,972	4,168	8,607	6.7 (4.3, 9.2)*
Tor2Door (3.5)	7,135	8,047	6,985	_ e	5.8 (5.2, 6.6)*
Bohemia (8)	10,329	7,766	10,350	_ e	-3.9 (-5.1, -2.5)*
Nemesis (9.5)	5,355	7,622	5,406	_ e	3.6 (2.4, 5.4)*
Kingdom (6.5)	3,361	5,346	3,371	_ e	8.1 (7.7, 8.5)*
Abacus (6.5)	5,121	4,819	_ ^f	_ f	_ f
MGM Grand (12)	2,931	4,278	2,934	4,244	3.4 (3.3, 3.5)*
Dark Matter (12)	271	3,353	276	3,344	26.5 (23.1, 29.6)*
Torzon (6.5)	754	3,177	_ 9	3,168	26.2 (18.9, 34.6)*
Nexus (3)	1,340	2,603	_ 9	2,496	31.4 (20.1, 43.5)*
Vice City (3)	2,809	2,496	2,789	_ e	-4.2 (-6.1, -2.4)*
Cypher (8)	1,765	2,285	1,768	_ e	4.1 (2.4, 6.3)*
Ares (11.5)	1,112	1,870	1,118	1,870	5.3 (4.2, 6.2)*
Elysium (3)	213	395	_ 9	378	27.6 (15.2, 41.3)*
Quantum (2.5)	254	293	_ g	296	7.8 (2.5, 13.3)*
Vortex (1.5)	184	282	_ g	277	53.3 (18.7, 98.4)*
ColombiaConnection (12)	210	236	211	236	1.4 (0.1, 3.0)*
Euphoria (1.5)	100	137	_ g	136	37.0 (10.4, 70.4)*
Total (12)	51,248	23,726	57,883	24,116	-8.3 (-11.9, -4.3)*

Note: ^a Number of months is the number of months between the first and last snapshot in the 12-month period, including when data could not be scraped from the cryptomarket. ^b Note that the 'first snapshot' and the 'last snapshot' of each individual market are their respective first and last scrape in the 12-month period, while the 'first snapshot' and the 'last snapshot' in the 'total' row corresponds to the total number of listings in the overall market in the 1st June 2023 and the 15th May 2024 snapshots, respectively. As such, the number of listings in the 'first snapshot' and the 'last snapshot' of the individual markets do not sum to the number of listings in the 'total' row. ^c The mean in the first and last month are calculated as the mean of the number of listings including the interpolated number of listings on the cryptomarket (or market size) per month. Because regular data points are required, intervening data points with no data were interpolated for estimating AMPC. The estimates that are statistically significant at p<0.05 have 95% confidence intervals (95%CI) that do not include 0. They are marked with "*" and highlighted in bold. ^e ASAP, Incognito, Tor2Door, Bohemia, Nemesis, Kingdom, Vice City and Cypher closed before May 2024. ^f There were no data for Abacus because it had only two scrapes – in 1st Jul 2023 and 1st December 2023. Abacus was also excluded from the data in the 'total' row. ^g Torzon, Nexus, Elysium, Quantum, Vortex and Euphoria had not yet started in June 2023. ^h The mean number of listings in the 'total' row are different from the 'total' row data presented in Table 4 which excludes interpolated data.

Did the size of the individual markets change over the period?

Of the 19 cryptomarkets (i.e. excluding Abacus), 16 had a significant rate of increase in number of listings (Table 2). The following markets had the highest rate of increase in number of listings: Vortex and Euphoria had the greatest increase of 53.3% and 37.0% per month, respectively, but they had only just started and were one of the smallest markets in this 12-month period. This was followed by:

- Nexus with an increase of 31.4% per month from 1,340 listings in the first snapshot to 2,603 in the last snapshot over 3 months;
- Elysium with an increase of 27.6% per month from 213 listings in the first snapshot to 395 in the last snapshot over 3 months;



- Dark Matter with an increase of 26.5% per month from 271 listings in the first snapshot to 3,353 in the last snapshot over 12 months; and
- Torzon with an increase of 26.2% per month from 754 listings in the first snapshot to 3,177 in the last snapshot over 6.5 months.

Two markets, Vice City and Bohemia, had a significant rate of decrease as they came to a closure.

Main Drugs Sold via Cryptomarkets from 1st June 2023 to 31st May 2024

Market listings captured through cryptomarket monitoring have been categorised into drug classes according to this <u>methodology</u>. Abacus was excluded from the analyses of trend over time in drugs available for sale because it only had two scrapes in the 12-month period.

What were the main drugs sold via cryptomarkets during this period?

Cannabis comprised the bulk of the listings identified across the overall market over the 12-month period (27.7%) (see Table 3, Figure 4 and Figure 5). This was followed by:

- MDMA, with 8.2% of listings;
- Benzodiazepines, with 7.9% of listings;
- Cocaine, with 7.2% of listings;
- Opioids (excluding heroin), with 6.9% of listings; and
- Meth/amphetamines (illicit), with 5.8% of listings.

New psychoactive substances (NPS) comprised 4.3% of listings; however, it should be noted that new drugs might have appeared since we created our dictionary terms (see <u>methods</u> of our earlier summary bulletin for further detail) that may not have been captured as NPS. We plan to update our dictionary terms for NPS and our machine learning model for drug listing categorisation in the future.

Did the market share of the main drugs sold via cryptomarkets change over this period?

Opioids (excluding heroin) had the greatest rate of relative increase in market share (3.2% per month) from June 2023 to May 2024 (5.3% of all drug listings to 7.0%, respectively; Table 3 and Figure 4). (Note that nitazenes belong exclusively in the NPS class even though they are opioids.) This was followed by:

- Other psychostimulants & nootropics increasing at 2.7% per month, from 2.9% to 3.5%;
- LSD increasing at 2.1% per month, from 3.3% to 4.2%;
- Benzodiazepines increasing at 1.0% per month, from 7.2% to 7.6%; and
- Ketamine increasing at 0.8% per month, from 5.1% to 5.5%.

Hallucinogenic mushroom had the greatest relative decrease in market share (-1.8% per month) from June 2023 to May 2024 (3.3% of all drug listings to 2.9%, respectively), followed by cannabis at -0.6% per month from 30.2% in June 2023 to 27.3% in May 2024 (Table 3 and Figure 4).



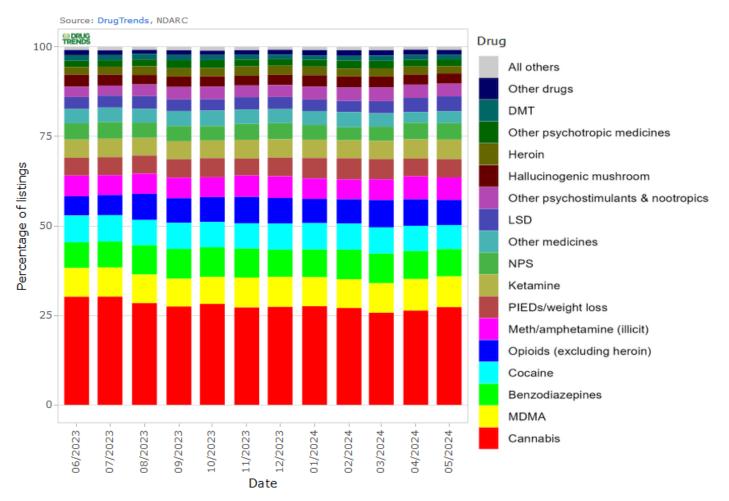
Table 3. Market share (percentage of listings) by drug class, and their average monthly percent change (AMPC in %) from June 2023 to May 2024.

	(per	AMPC (95%CI) ^b		
Drug	Overall	Jun 2023	May 2024	
Cannabis	27.7	30.2	27.3	-0.6 (-1.4, -0.2)*
MDMA	8.2	8.1	8.6	0.3 (-0.5, 0.9)
Benzodiazepines	7.9	7.2	7.6	1.0 (0.2, 2.0)*
Cocaine	7.2	7.5	6.7	-0.4 (-0.9, 0.1)
Opioids (excluding heroin)	6.9	5.3	7.0	3.2 (2.1, 5.1)*
Meth/amphetamine (illicit)	5.8	5.8	6.3	1.2 (-0.1, 2.2)
PIEDs/weight loss ^c	5.2	5.0	5.1	0.1 (-1.4, 1.8)
Ketamine	5.1	5.1	5.5	0.8 (0.2, 1.2)*
NPS	4.3	4.5	4.6	-0.2 (-1.1, 0.4)
Other medicines ^d	3.9	4.0	3.3	-1.1 (-2.4, 0.3)
LSD	3.5	3.3	4.2	2.1 (1.1, 3.0)*
Other psychostimulants & nootropics	3.4	2.9	3.5	2.7 (1.6, 3.9)*
Hallucinogenic mushroom	3.0	3.3	2.9	-1.8 (-3.1, -0.8)*
Heroin	2.3	2.2	2.0	-0.6 (-2.1, 0.9)
Other psychotropic medicines ^e	2.0	1.7	1.9	_9
DMT	1.4	1.6	1.3	_g
Other drugs	1.3	1.4	1.3	_g
GHB/GBL/1,4-BD	0.45	0.41	0.47	_9
Total ^f	100.0	100.0	100.0	_

Note: ^a Market share is the proportion of the number of listings of the drug as a percentage of the number of all drug listings per snapshot across all marketplaces observed in the stated period. ^b Average monthly percent change (AMPC) in market share is the estimated relative percent change in percentage of listings of the particular drug per month. The estimates that are statistically significant at p<0.05 have 95% confidence intervals (95%CI) that do not include 0. They are marked with "*" and highlighted in bold. See <u>methods</u> for further details. ^c PIEDs: performance and image enhancing drugs. Please refer to our <u>interactive visualisation</u> for examples. ^d These are all other medicines not in other categories of drugs. Please refer to our <u>interactive visualisation</u> for examples. ^e These are pharmaceutical drugs with psychotropic effects excluding drugs already in other categories of drugs, e.g. psychostimulants and opioids which are in their specific classes of 'other psychostimulants & nootropics' and 'opioids (excluding heroin)', respectively. Please refer to our <u>interactive visualisation</u> for examples. ^f The 'total' row included all drug listings presented in our bulletin including those not shown in this table due to small values, i.e. alcohol, e-cigarette, inhalants, MDA, paraphernalia, PCP and tobacco, with each constituting <0.5% of the overall market share. However, GHB/GBL/1,4-BD is still shown because of recent interest in this drug in Australia. ^g Estimates of AMPC for market share are not shown where overall percentage of listings of the drug is $\leq 2\%$ due to unreliability of estimates.



<u>Figure 4.</u> Percentage breakdown of listings by month and drug class over time from June 2023 to May 2024.



Note: 'All others' comprised drugs or related products that each constitute <0.5% of the overall market share. These are alcohol, e-cigarette, GHB/GBL/1,4-BD, inhalants, MDA, paraphernalia, PCP and tobacco. Complete interactive visualisation for all drug classes available <u>here</u>.

Did the market size (based on the number of listings) of the main drugs sold via cryptomarkets change over this period?

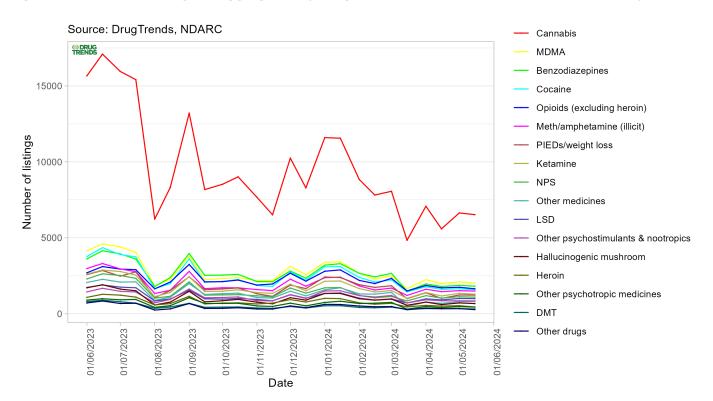
There was a relative decrease of -5.5% in overall market size in the month of May 2024 as compared to June 2023 (Table 4). Note that the data in Table 4 does not include interpolated data; as such the decrease was of a smaller magnitude than in Table 2 because of missed scrapes for markets that were not accessible in the earlier part of the 12-month period. In terms of change in the absolute number of listings per drug across all monitored markets, all drug categories saw a decrease. Compared with the overall decrease in average number of listings in May 2024 versus June 2023, the drugs below had a greater magnitude of change in average listings (Table 4 and Figure 5):

- DMT from 848 to 326 listings (-8.7% per month);
- NPS from 2,464 to 1,110 listings (-8.2% per month);
- Other medicines from 2,165 to 803 listings (-7.4% per month);
- Meth/amphetamine (illicit) from 3,145 to 1,508 listings (-6.9% per month);
- LSD from 1,816 to 1,004 listings (-6.6% per month);



- Cannabis from 16,380 to 6,582 listings (-6.6% per month);
- Heroin from 1,183 to 490 listings (-6% per month);
- Cocaine from 4,062 to 1,620 listings (-5.9% per month); and
- Hallucinogenic mushroom from 1,812 to 693 listings (-5.7% per month).

Figure 5. Number of listings disaggregated by drug class for all markets from June 2023 to May 2024.



Note: The drug classes with small number of listings, each comprising <0.5% of the overall market share (i.e. alcohol, e-cigarette, GHB/GBL/1,4-BD, inhalants, MDA, paraphernalia, PCP and tobacco) are not shown in the figure. To view the data on all drug classes, please see our <u>interactive</u> <u>visualisation</u>.



Table 4. Market size (number of listings) by drug class and their average monthly percent change(AMPC in %) from June 2023 to May 2024.

	(Mear	Market size number of list		
Drug	Overall	Jun 2023	May 2024	AMPC (95%CI) ^b
Cannabis	9,537	16,380	6,582	-6.6 (-10.2, -2.9)*
MDMA	2,765	4,373	2,066	-4.8 (-8.5, -1.1)*
Benzodiazepines	2,655	3,883	1,844	-5.1 (-8.4, -1.8)*
Cocaine	2,461	4,062	1,620	-5.9 (-9.8, -1.8)*
Opioids (excluding heroin)	2,268	2,903	1,696	-3.6 (-6.1, -1.0)*
Meth/amphetamines (illicit)	1,965	3,145	1,508	-6.9 (-10.5, -1.8)*
PIEDs/weight loss ^c	1,783	2,715	1,234	-4.9 (-9.0, -0.7)*
Ketamine	1,737	2,748	1,316	-5.0 (-8.4, -1.6)*
NPS	1,470	2,464	1,110	-8.2 (-11.7, -3.2)*
Other medicines ^d	1,335	2,165	803	-7.4 (-11.4, -3.4)*
LSD	1,157	1,816	1,004	-6.6 (-9.8, -2.2)*
Other psychostimulants & nootropics	1,135	1,560	851	-3.4 (-6.8, 0.1)
Hallucinogenic mushroom	1,018	1,812	693	-5.7 (-9.9, -1.3)*
Heroin	782	1,183	490	-6.0 (-9.2, -2.8)*
Other psychotropic medicines ^e	661	946	455	-5.2 (-8.8, -1.6)*
DMT	480	848	326	-8.7 (-11.9, -4.2)*
Other drugs	462	777	308	-4.4 (-9.3, 0.7)
GHB/GBL/1,4-BD	152	220	113	-4.5 (-8.1, -0.9)*
Total ^f	33,976	54,246	24,115	-5.5 (-9.0, -1.9)*

Note: ^a This shows the mean number of listings per snapshot across all marketplaces observed in the stated period. ^b Average monthly percent change (AMPC) in market size is the estimated relative percent change in number of listings of the particular drug per month. The estimates that are statistically significant at p<0.05 have 95% confidence intervals (95%CI) that do not include 0. They are marked with "*" and highlighted in bold. ^c PIEDs: performance and image enhancing drugs. Please refer to our <u>interactive visualisation</u> for examples. ^d These are all other medicines not in other categories of drugs. Please refer to our <u>interactive visualisation</u> for examples. ^e These are pharmaceutical drugs with psychotropic effects excluding drugs already in other categories of drugs, e.g. psychostimulants and opioids which are in their specific classes of 'other psychostimulants & nootropics' and 'opioids (excluding heroin)', respectively. Please refer to our <u>interactive visualisation</u> for examples, i.e. alcohol, e-cigarette, inhalants, MDA, paraphernalia, PCP and tobacco, with each constituting <0.5% of the overall market share. However, GHB/GBL/1,4-BD is still shown because of recent interest in this drug in Australia.

What drugs did the different markets sell over this period?

Figure 6 shows the breakdown of listings by drug class per market during the 12-month reporting period. The analyses shows that most markets monitored listed an array of different drugs. Note that this section includes data from Abacus as we analysed the aggregate data over this 12-month period. The market share of cannabis varied between 19% for Elysium and 47% for Euphoria with a relative difference ² from the overall market of -35% and 65%, respectively (**Figure 6** and **Table 5**).

Several of the markets with a significantly higher proportion of listings from particular drug classes were also small markets with a maximum of <1000 listings in a snapshot. These were:

² The relative difference in market share of a drug is the difference in market share of the drug in the individual market from the overall market as a proportion of the overall market share of that drug. Please refer to section 6.1.2 of <u>methods</u> for further details.



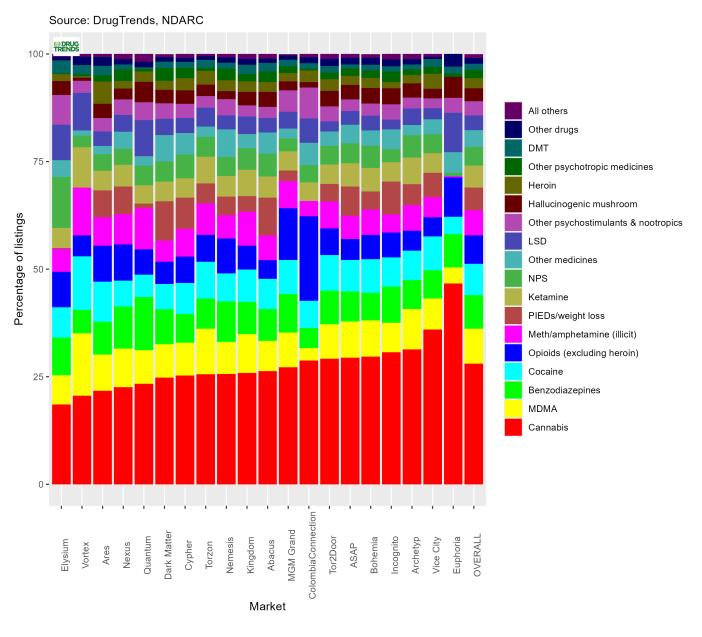
- Vortex which had the highest percentage of MDMA, cocaine, meth/amphetamine (illicit), and ketamine listings (relative difference of 81%, 71%, 89%, and 83% from overall market, respectively).
- Quantum had the highest percentage of benzodiazepine listings (relative difference of 61% from overall market).
- Euphoria had the highest percentage of cannabis, LSD and hallucinogenic mushroom listings (relative difference of 65%, 168% and 53% from overall market, respectively). However, the difference was not statistically significant for hallucinogenic mushrooms.
- Colombia Connection had the highest percentage of listings for opioids excluding heroin and for other psychostimulants and nootropics (relative difference of 227% and 125%, respectively, from overall market).
- Elysium had the highest percentage of NPS listings (relative difference of 166% from overall market). It also had a high percentage of listings for LSD and other psychostimulants and nootropics (relative difference of 152% and 123%, respectively, from overall market).

The following markets had the highest percentage of listings in the following drug classes:

- Ares had the highest percentage of heroin listings (relative difference of 127% from overall market).
- Dark Matter had the highest percentage of PIEDs/weight loss drugs (relative difference of 67% from overall market).



Figure 6 Drug composition of markets monitored from June 2023 to May 2024 (in ascending order by proportion of cannabis listings, and overall market in last column).



Note: This figure displays drug class percentage of all listings observed from 1st June 2023 to 31st May 2024) for each marketplace monitored. See **Figure 2** and our <u>interactive timeline</u> for the duration of monitoring each market. 'All others' comprised drugs or related products that each constitute <0.5% of listings over the reporting period. These are alcohol, e-cigarette, GHB/GBL/1,4-BD, inhalants, MDA, paraphernalia, PCP and tobacco.



https://doi.org/10.26190/unsworks/30309

Table 5. Relative percent difference in drug market share between each market and the overall market from June 2023 to May 2024.

Market	Cannabis	MDMA	Benzo- diazepines	Cocaine	Opioids (excl. heroin)	Meth/ amphetamine	PIEDs/ weight loss	Ketamine	SAN	Other medicines	LSD	Other psycho- stimulants & nootropics	Hallucinogenic . mushroom	Heroin	Other psycho- tropic med.	DMT	Other drugs	All others
Elysium	<u>-35**</u>	-17	18	-4	37	-6	-94**	-6	<u>166**</u>	-3	<u>152**</u>	<u>123**</u>	1	-30	-100	127	-54	-32
Vortex	-27*	<u>81**</u>	-31	71*	-20	<u>89**</u>	-	83*	-36	-69	<u>158**</u>	-10	-74	-82	-79	44	46	-14
Ares	<u>-23**</u>	3	0	27*	<u>38**</u>	14	13	-10	-15	<u>-52**</u>	2	0	2	<u>127**</u>	-20	53	46	-26
Nexus	<u>-21**</u>	10	<u>28**</u>	-18	<u>38**</u>	21	16	-1	-17	0	18	15	-21	-22	41	-19	-7	21
Quantum	-18	-2	61*	-31	-5	67	-80*	-15	5	-46	<u>150*</u>	36	48	10	-62	-75	4	90
Dark Matter	-13*	-4	7	-20	-16	-15	<u>67**</u>	-11	5	<u>53**</u>	15	14	-3	-7	55*	5	-17	-32
Cypher	-11*	-6	-12	-2	1	10	32*	-11	23	25	5	4	-1	22	26	-3	-33	-7
Torzon	-10*	<u>30**</u>	-7	16	2	27*	-16	22	3	<u>-39**</u>	33*	-14	-17	40*	<u>-59**</u>	28	-43	-44
Nemesis	<u>-10**</u>	-8	<u>24**</u>	-12*	<u>33**</u>	-7	<u>-21**</u>	-6	-2	<u>61**</u>	-1	19	<u>-40**</u>	9	<u>43**</u>	-5	-6	-24
Kingdom	<u>-9**</u>	11	-1	2	-9	<u>37**</u>	<u>-34**</u>	20	12	-17	23*	-18	0	8	-13	<u>54**</u>	-2	22
Abacus	-7*	-12	-1	-8	<u>-30**</u>	2	<u>54**</u>	-3	18	<u>25**</u>	5	-20	9	-9	<u>37**</u>	<u>45**</u>	-28	15
MGM Grand	-4	-1	18*	7	<u>97**</u>	9	<u>-55**</u>	-13	<u>-33**</u>	<u>-42**</u>	17	<u>59**</u>	<u>-33**</u>	-18	-16	3	-23	<u>-67**</u>
ColombiaConn.	2	-65*	-38	-16	<u>227**</u>	-43	-	-16	-4	31	72	125*	-55	24	-75	1	2	0
Tor2Door	3	-2	3	13	1	8	<u>-26**</u>	-12	-3	-14	<u>-29*</u>	10	14	18	-20	7	23	19
ASAP	3	4	-9	0	<u>-21**</u>	-7	<u>23**</u>	6	5	9	-4	-15*	7	-9	-8	<u>-35**</u>	9	-4
Bohemia	4	4	<u>-16**</u>	6	-7	0	<u>-23**</u>	7	15	-11	4	-10	15	2	-7	-9	18	-7
Incognito	<u>8**</u>	<u>-15**</u>	11*	-8	-6	<u>-27**</u>	<u>38**</u>	-12	<u>-33**</u>	16	<u>-31*</u>	13	16	<u>-35**</u>	25*	-11	15	35
Archetyp	<u>10**</u>	15*	-11	-7	<u>-23**</u>	2	-12	<u>21**</u>	17	<u>-39**</u>	15	-20	4	-18	-28*	-19	-11	27
Vice City	<u>26**</u>	-10	-14	8	<u>-27**</u>	-20	3	-11	-2	-13	-21	-27	-30*	<u>53**</u>	-17	28	<u>-62**</u>	-28
Euphoria	<u>65**</u>	-50	6	-45	46	-100	_	_	-82	22	<u>168**</u>	2	53	-	-58	14	132	-

Note: Each column is colour coded to highlight the lowest numbers in green, the mid-range numbers in yellow and highest numbers in purple, following the colour scale range. ** indicate relative difference is statistically significant at p<0.01, and * indicate relative difference is statistically significant at p<0.01. Numbers in bold indicate statistically significant difference at p<0.001 or p<0.01. 'All others' category comprised alcohol, e-cigarette, GHB/GBL/1,4-BD, inhalants, MDA, paraphernalia, PCP and tobacco, with each constituting <0.5% of the overall market share.



Funding and Copyright

Funded by the Australian Government Department of Health and Aged Care under the Drug and Alcohol Program ©NDARC, UNSW SYDNEY 2024. This work is copyright. You may download, display, print and reproduce this material in unaltered form only (retaining this notice) for your personal, non-commercial use or use within your organisation. All other rights are reserved. Requests and enquiries concerning reproduction and rights should be addressed to the information manager, NDARC, UNSW Sydney, NSW 2052, Australia via <u>drugtrends@unsw.edu.au</u>.

Recommended Citation

Man, N., Sadaphale, V., Sutherland, R., Barratt, M. J., Bruno, R., & Peacock, A. (2024). <u>Trends in the availability</u> <u>and type of drugs sold on the internet via cryptomarkets, June 2023 - May 2024.</u> Drug Trends Bulletin Series. Sydney: National Drug and Alcohol Research Centre, UNSW Sydney; 2024. Available from: https://doi.org/10.26190/unsworks/30309

Acknowledgements

We would like to acknowledge the following individuals for their contribution to this project: Anant Mathur, Max Pedersen, Rajat Katyal, Dr Qingyuan Linghu, Yang Yan, Agata Chrzanowska, Dr Amanda Roxburgh, Joe van Buskirk, A/Prof Timothy Dobbins, A/Prof Lucinda Burns, Dr Courtney Breen, Sundresan Naicker and Rosie Swanton.

Related Links

- Data visualisations: <u>https://drugtrends.shinyapps.io/cryptomarkets</u>
- For more research from the Drug Trends program go to: <u>https://www.unsw.edu.au/research/ndarc/research-impact/research-areas/drug-trends</u>

Contact us

Email: drugtrends@unsw.edu.au