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On April 2015

I-TREND Substance briefing: AM-2201

This technical folder provides information on AM-2201. The information provided is based on a number of existing data sources and work undertaken as part of the I-TREND project. Research informing the folder includes an analysis of user discussions on popular Polish drug forums, an analysis of marketing on popular Polish web shops selling the substance, and scientific laboratory analysis of the compound through test purchasing of the substance from Polish web shops.

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1. Substance name(s)

1.1. Chemical name

(1-(5-fluoropentyl)-3-(1-naphthoyl)indole)

1.2. Other names (e.g. popular/street/slangname(s))

1-[(5-Fluoropentyl)-1H-indol-3-yl]-(naphthalen-1-yl)methanon

1.3.Branded products containing the compound: Lack of information

2. Classification and effect

2.1.EMCDDA substance group classification

Cannabinoids

2.2.Substance analysis results

AM-2201, 51%

2.3.Polish drug forum monitoring

Synthetic cannabinoids.

2.4.Polish web shops marketing

AM-2201 is not presented on Polish shops' websites as popular (e.g. promotion) NPS. It has not any special marketing strategy nor exposition (see picture below).



3. Legal status and identification of the substance

3.1. Legal status/acts/laws in Poland

Not controlled as a narcotic drugs or psychotropic substances by Polish law. As such, it is not listed in the schedules of drugs of act of counteracting drug addiction (the main drug law). The possession and trafficking is not punishable by criminal sanctions.

But the substance, as all NPS is controlled as substitute drug (*środek zastępczy*). Its manufacturing and introducing to trade is forbidden in territory of Poland under punishment of fine ranging from 20000PLN (~4600 euro) to 1000000 PLN (~230.000 euro).

3.2. EMCDDA Notifications of AM-2201

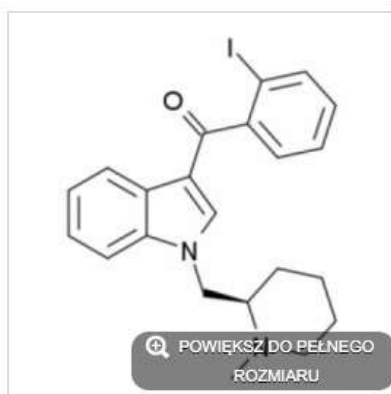
AM-2201 was reported for the first time in Europe by Latvia authorities in 2010. In December 2011 the substance was identified for the first time in Poland. The substance has been reported to the EMCDDA by the following EU countries:

Country	Date
Latvia	January 2011
Norway	March 2011
Germany	April 2011
Belgium	May 2011
France	May 2011

Croatia	July 2011
Sweden	July 2011
Bulgaria	August 2011
Hungary	October 2011
Turkey	September 2011
United Kingdom	December 2011
Poland	December 2011
Italy	February 2012
Greece	March 2012
Slovenia	November 2012
Spain	January 2013
Finland	April 2013
Czech Republic	June 2013
Romania	November 2013
Turkey	November 2013
Cyprus	February 2014
Lithuania	April 2014

4. Photographs of the substance

4.1. Images used in the marketing of the product on the web shops the compound was purchased



AM-2201

AM-2201, czyli 1-[(5-fluoropentyl)-1H-indol-3-yl]-(naftalen-1-yl)metanon, znany również jako 5F-JWH-018, jest to organiczny związek chemiczny, który wywodzi się z grupy kannabinoidów. Oferowany przez nas produkt ma przeznaczenie laboratoryjne. Jest wykorzystywany do badań o charakterze naukowym i medycznym. Niebezpieczne jest jego zażywanie, dlatego przestrzegamy przed jego spożyciem. Gwarantujemy szybkie i bezpieczne zakupy. Szerokie grono Klientów i pozycja lidera w branży sprawiają, że na pewno będą Państwo zadowoleni z dokonanych zakupów.

Wprowadź w okienko ilość jaka Cię interesuje, dodaj do koszyka, a rabat przydzieli się automatycznie.

Ilość:

Przejdź



4.2. Photograph of the substance purchased for laboratory analysis:



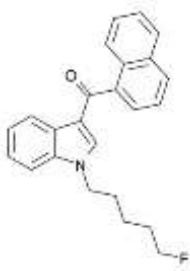
5. Chemistry

5.1. Chemical Abstracts Service (CAS) registry number

335161-24-5

5.2. Chemical information (other chemical names or variants)

5.3. Structure (picture of structural formula)



5.4.Molecular formula

C₂₄H₂₂FNO

5.5.Molecular weight

359,44 g·mol⁻¹

6. Analytical composition: results of substance analysis carried out on samples purchased online (PL IPIP address web shops)

6.1. Details of laboratory analysis technique used

Web shop	Date of purchase	Form	Substance named on package/web shop	Confirmed substances
Research chemical shop	22.03.14	powder	AM-2201	AM-2201, 51%

7. Price and marketing strategies on Polish web shops selling 2-AI:

7.1. Compound Prices: Powder

Please note that the maximum price for details supply was 70 PLN for 1 gram.

	Polish zloty	Quantity
Minimum price	50 PLN	1 gram
Maximum price	250 PLN (wholesale)	20 grams

7.2. Description of availability and marketing strategies on Polish web shops selling the AM-2201

Sales of AM-2201 in on-line Polish shops were identified in four out of five leading shops selling NPS, namely:

In all of shops the substance is selling under the marketing label "AM-2201".

The marketing of this product contains differentiation of prices by amount (grams) in Polish zlotych

PRODUCT	AMOUNT	PRICE
AM-2201	250	23,00 zł
AM-2201	100	25,00 zł

AM-2201	50	30,00 zł
AM-2201	25	40,00 zł
AM-2201	10	50,00 zł
AM-2201	5	57,00 zł
AM-2201	3	60,00 zł

There is discount for bigger amounts of selling product which is accounted automatically when you put certain amount.

7.3.Number of poland based web shops selling AM-2201

4 out of 5 top Polish on-line shops.

7.4.Type of polish websites selling the product

	Number of shops (23.03.2014)	Number of shops (27.10.2014)
RC shops	3	2
Commercial shops	0	0
Other	1	1

8. Law enforcement and health data

8.1.Number of law enforcement seizures in Polish in 2013/2014

213 in 2013 and 98 in 2014 .

8.2.EMCDDA health alerts in the Polish

0

8.3.Confirmed deaths and acute cases reported in Polish

0

9. User experiences of the substance: results from an analysis of discussions in two Polish Drug Forums

AM-2201 (174 posts by 72 user)

There were seven active topics devoted exclusively to AM-2201. Five of them were rejected due to their content (less than 10 posts). Both topics chosen for analysis came from forum <http://hyperreal.info/talk/> and were active in 2013. 100 first posts of first chosen topic were selected for analysis, while the second topic was fully coded. In general, 72 users took part in both discussions.

The first included topic was very long as it was started on March 2011 and it contained 855 posts when downloaded. In the monitoring period the number of posts increased from 855 in September 2013 to 974 in December 2014, number of views from 39798 to 57302.

The other topic started on April 2012 and it contained 73 posts. In the monitoring period (from September 2013 to December 2014) the number stood still, while views increased from 3617 to 4682.

9.1. Dosage specified by drug forum users

(n = 43 references by 24 users)

9.1.1. Light

(8 references by 6 users): 1mg (from 0,5 to 2mg); proportion 1:60 with the base.

9.1.2. Common

(5 references by 4 users): 2mg (2-7mg); about five times more when eaten (one user claimed more than 25mg); proportion (potentially, polarized) 1:50.

9.1.3. Strong

(9 references by 8 users): from 4mg to 10-15 mg; proportion 1:40 with the base.

9.1.4. Initial

(2 references by 2 users): starting from 1mg and boosting.

9.1.5. Boosting

(5 references posts by 5 users): another 1mg each 20 minutes.

9.1.6. Threshold

(0 references by 0 users): no information found.

Regardless of previous experience with current and other substances it was recommended to begin with 1mg. As the tolerance grows rapidly it's difficult to define upper dosage level. Lethal dosage is also undefined, but it's probably not possible to overdose without intention to.

9.2. Duration

(n = 50 references by 28 users)

Total duration of AM-2201 was discussed as between 90-120 minutes.

9.2.1. Onset

(29 references by 16 users): from first minute.

9.2.2. Coming up

(30 references by 18 users): 1 to 2 minutes.

9.2.3. Plateau/peak

(29 references by 17 users): 2 to 15-20 minutes.

9.2.4. Coming down

(27 references by 15 users): 20 to 30 minutes.

9.2.5. After effects

(4 references by 3 users): 30 minutes to 1,5 hour.

9.2.6. Hangover

(8 references by 7 users): 1 to 3 days after.

In case of ingestion first effects appear after around 3 hours. Total duration depends on dosage but it appears to last longer than in case of smoking or vaporizing.

9.3. Effects reported by forum users

(n = 141 references by 52 users)

9.3.1. Physical (95 references by 43 users)

Desired

There is only one positive effect mentioned by two users - reduced sense of pain. In contrast, many users reported suffering from different types of pain: headache, bones and joints ache, stomachache, toothache and heartaches.

Undesired

Aches (headaches, bones and joints ache, stomachache, toothache, heartache), insomnia, nausea and vomiting, bloodshot eyes, gluttony or lack of appetite, imbalance, tachycardia, hyperhidrosis, dyspnea, high blood pressure; various problems with teeth and rash.

9.3.2. Psychological (60 references by 30 users)

Desired

Improved well-being, energy, moderate stimulation and intensification of feelings. In the case of visions - colors are more vivid and pastel, image seems to evolve into 2D; music and creative thinking

and (even though it is not a stimulant) psychomotor hyperactivity. On the other hand it is reported as having the ability to induce calming feelings and can be used as stimulants' antagonist (to help get sober).

Other psychological and desired effects seem to be considered as non-negative and relate to other substances. AM-2201 does not:

- create feelings of depression as many types of JWH.
- induce a feeling of being 'drunk' as GBL does.
- impact on short-term memory to the same extent as many types of JWH and pure Marihuana.
- interfere with working process as JWH-210 and there are no such strong and negative after effects as in case of JWH.

As the phase comes down, individuals begin to feel 'normal'- like the substance had never been taken. Due to this the substance can be used in the evenings and it doesn't interfere with the ability to fall asleep like Marihuana.

□ *Undesired*

Impaired perception and hallucinations (with eyes closed and opened as well), attention problems/difficulty focusing, lack of power, sleepiness, anxiety and neuroses.

During withdrawal or after taking higher dosages or frequent use: apathy, bad mood, anxiety, neuroses, problems with short-term memory, dissociation and depersonalization, lack of motivation and apathy, mood swings, disorientation and suicidal thoughts.

9.3.3.Sought

(6 references by 5 users)

The substance is active from the first moment after taking and the effects last around 1.5 hour - after this time users feel sober and ready to do other activities (e.g. work, sleep, drink).

Many users highlight this is one of the best substances to take outdoors.

The phase is short but energetic, users feels relaxed and in a very good mood.

9.3.4.Tolerance

(N= 14 references by 11 users)

Many users perceive tolerance to grow rapidly resulting in boosting dosages. Two users mentioned

tolerance grows not only for current substance but also for other cannabinoids, whilst one claimed no such cross-tolerance takes place.

One user discussed tolerance as growing within one evening ; in the morning he had 1.5 hour of being under influence of AM-2201, whilst in the evening it took only 1 hour (after consuming the same amount). Another user pointed that after 2 weeks of abstinence he could still achieve only 60-80% of previous strength. One user reported not being able to achieve the same results as previously and as such started to think his provider was selling a weaker product. This resulting in the user buying AM-2201 from different sources until he realized the quality had not decrease but tolerance had increased rapidly.

9.4.Route of administration

(n = 26 references by 21 users)

There are two basic methods of using AM-2201: **inhalation (26 references by 20 users)** and **ingestion (3 references posts by 3 users)**. Inhalation appears to be more widespread and more effective (smaller dosage is needed to achieve the same effects).

Inhalation is carried out mostly by smoking dried plants soaked with a substance dissolved in ethanol, acetone or isopropanol, rolled in a cigarette **(17 references by 14 users)**. It can be also smoked with a bong (1 reference by 1 user) , home-made bong - a bucket filled with water (1 reference by 1 user), vaporized with vaporizer or other home-made devices such as a bulb or sample tube **(6 references by 5 users)**. The "chasing the dragon" method (smoking from aluminium leaf) was also reported **(1 reference by 1 user)**.

9.5.Other substances referred to when discussing AM-2201

(n = 49 references by 24 users)

9.5.1.● Comparable effects (35 references by 20 users):

- Cannabis (as it gives similar effects, but effects are faster and occur in a shorter period of time, causing no dizziness or confusion).
- GBL (as it also makes time pleasant , but gives illusion of being sober)
- All JWH series (as it is better, stronger and more effective. The phase also comes faster and lasts shorter so it makes a user sober and ready to work just in 1.5 hours. It was also reported as causing less cardiological problems, paranoia, depression and bloodshot eyes.

9.5.2.● Other substances in the same session (6 references by 5 users): alcohol, JWH (unspecified)

and GBL.

9.5.3.● Substances used to enhance effects (3 references by 3 users)

GBL, pFPP, UR and JWH (last two unspecified).

9.5.4.● Substances used to manage negative effects (2 references by 2 users)

30mg of Penthedrone and 50mg of N-ethylbuphedrone.

9.5.5.● No substances were mentioned as anthagonists (0 references by 0 users).

9.6.Appearance and preparation

9.6.1.Appearance (n = 8 references by 6 users)



<http://de.wikipedia.org/wiki/AM-2201>

- Colour: white or light beige-orange-pink (turns black in high temperature)
- Structure: crystal or powder

There were not many user discussion around appearance of the substance, but those mentioned highlighted the terrible taste and smell (the smoke is especially unpleasant during vaporization, but not acrid).

9.6.2.Cook/Preparation (32 references by 19 users)

There were two or three popular ways in which the substance can be prepared and each refers to two different routes of administration: smoking or vaporizing.

Before substance is ready to be smoked it has to be dissolved in ethanol, acetone or some other solvent and then spread on a dried plant base until it soaks. The proportion of substance and base varies from

1:40 to 1:60 depending on desired strength.

As the word "smoking" was mentioned many times, not only in case of smoking dry plants soaked with substance, it can be assumed that AM-2201 is also usually smoked pure (rolled in a cigarette, from a pipe or other way).

Another way is to heat the substance, wait till it turns into gas and then inhale.

9.7. Patterns/Frequency of use (n= 24 references posts by 17 users)

9.7.1. During the days (week)

Some users claim to use AM-2201 occasionally while the others very often (even in a few-days binge). Even though seven users gave the answers concerning concrete amounts, they didn't refer to the same period of time. To measure an average usage the answers had been standardized. Thus, it is assumed that average user smokes about 0,25 to 2,5 grams per week (with arithmetic mean 0,74 gram).

9.7.2. During one event

Due to short duration of this substance users claim to smoke more than once a day and to boost the dosage even few times. The record holder claims to smoke 10 mg per day in five dosages of 2 mg; the other advanced user declared to smoke 20 times during one day.

9.8. Context of consumption use (n= 0 discussions)

There were no discussion on the context on consumption.

9.9. User's views and experiences on the online market – online survey result (n= 103 discussions)

There were no discussion expressing users views and experiences of the online market.

10. Survey findings

The below outlines main findings from a survey of NPS users (n=103)

10.1. a. Pattern/frequency

Did you use any of the following new psychoactive substances?

AM-2201	103	7,4%
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What was the new psychoactive substance you used last time?

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8.1 During the last twelve months, on how many days have you taken selected new psychoactive substance?

	Not at all	1 to 3 days	4 to 9 days	10 to 19 days
AM-2201	18,2%	22,7%	4,5%	4,5%

During the last 30 days, on how many days have you taken selected it

No answers

10.2. Effects

Did you feel anything unpleasant after you used the substance last time? What were the unpleasant feelings after you used the substance? (*several answers are possible*)

	unpleasant, intensive hallucinations, delusions	strong craving to use more	depression, dejection	strong paranoia, fear, anxiety	aggression	excitement, sleeplessness	fatigue, exhaustion, sleepiness	muscle ache,, cramps, jaw clenching	tremors	seizures
AM-2201	,0%	18,2%	9,1%	9,1%	22,7%	,0%	,0%	22,7%	9,1%	4,5%

could not control my muscle, I have problems with moving	Headache	nausea, vomiting	strongly increased heart rate, palpitation, chest pain	breathing difficulty, dyspnea	sweating	overheating	dehydration and/or diarrhea	problems of sight	itches, skin changes, changed colour, spots, blisters, rash etc.	other
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AM-2201	13,6%	4,5%	18,2%	36,4%	9,1%	,0%	9,1%	13,6%	,0%	,0%	,0%
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10.3. Context of consumption

Last time when using the substance which you selected, what were circumstances?

	Alone at Home	With friends at your or their home	Alone in a club, pub or at a party	with friends in a club, pub or at a party	Alone outside/in the countryside	with friends outside/in the countryside	At school/work	Other circumstances
AM-2201	9,1%	45,5%	,0%	9,1%	,0%	27,3%	9,1%	,0%

What are the most important intended effects that you seek when you used the substance which you selected? (*several answers are possible*)

	To bond with others, to socialize	To get high	(sexual performances not included)	To improve sexual intercourse	To increase the positive effects of another drug	To reduce the negative effects of another drug	To modify perception	To soothe pain	To allay or alleviate anxiety	To fight sleeplessness	To fight tiredness	To relax	to stimulate the brain activity for learning or work	others
AM-2201	63,6%	59,1%	,0%	13,6%	9,1%	,0%	40,9%	4,5%	31,8%	27,3%	4,5%	50,0%	13,6%	,0%

10.4. Route of administration

Last time when using the substance which you selected, what were the typical ways of administration for you? (*several answers are possible*)

	Smoking	Waterpipe	Bong	Vaporizer	Chasing the dragon	Sublingual	Ingestion	Snorting	Rectal	Injection
AM-2201	95,5%	13,6%	22,7%	9,1%	9,1%	,0%	,0%	,0%	,0%	4,5%

10.5. User's views and experiences on the online market

During the last 12 months, on how many different online shops have you ordered?

	Frequency	Percent
1	5	62,5%
2 to 5	3	37,5%
5 to 10	0	,0%
More than 10	0	,0%
Total	8	

Which were the most important criteria for you when you selected the shops in the last 12 months?
(no more than 5).

	Frequency	Percent
I followed the advice of other users	6	75,0%
I had a good experience with the shop already	4	50,0%
Its use the site of a Secure payment method	0	,0%
Good profile at pages where client share their experience (fe.; SafeOrScam)	4	50,0%
It is specialized into one substance	1	12,5%
this was cheaper than other online shops	3	37,5%

The New Psychoactive Substance are of better quality than other online shops	1	12,5%
The New Psychoactive Substance are shipped in discrete packets	2	25,0%
The shipment was more reliable than other sites	1	12,5%
The New Psychoactive Substance I was looking for was not available in other online shops	0	,0%
No o online shop sends to my country the New Psychoactive Substance I was looking for	0	,0%
No specific criterion	0	,0%
Other	0	,0%

Population: only users, who ordered NPS during last 12 months

Where did you look for information about New Psychoactive Substance? (*several answers are possible*)

	Frequency	Percent
from an online shop	2	25,0%
from a web forum	4	50,0%
from friends / family / acquaintances	2	25,0%
I don't need any information	1	12,5%
from my dealer	1	12,5%
from TV/radio	0	,0%
from newspapers, magazines	0	,0%
I don't have any information	1	12,5%
Other	1	12,5%

Population: only users, who ordered NPS during last 12 months

11. Harm reduction advice provided by online peers (*n=5 references by 5 users*)

Harm reduction messages oscillate between advice and warnings about using the substance in a binge and harm made to the body (skeletal joint system, respiratory and digestive systems).

Warnings

The substance was reported as having negative effects on bones and joints by leaching calcium as well as leaching the body from other minerals and vitamins. It was also reported as causing problems with liver and kidneys and has a negative impact on lungs (may cause pneumothorax). To avoid these problems it's wiser to use the substance sporadically (only for a special occasion). It's also discouraged to use the substance in a binge due to tolerance growing rapidly.

*Advices (*n=1 references by 1 users*)*

To avoid bone and joint problems it was suggested that users should take collagen supplements in the course of using the substance.

12. References

David McQuade, Simon Hudson, Paul I. Dargan, David M. Wood (March 2013). "First European case of convulsions related to analytically confirmed use of the synthetic cannabinoid receptor agonist AM-2201". *European Journal of Clinical Pharmacology* 69 (3): 373–376. doi:10.1007/s00228-012-1379-2.

Jump up ^ ekaJ (20 February 2011). "The Night I Killed My Friends". Erowid.org. Retrieved 11 June 2012.

Jump up ^ Synthetic Drug Control Act of 2011. H.R. 1254, 112th Congress, 1st Session (2011).

Jump up ^ WO patent 0128557, Makriyannis A, Deng H, "Cannabimimetic indole derivatives", granted 2001-06-07

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