# Episode 42: 2C-B vs Tucibi (Pink Cocaine) - What's the Difference?



**Transcript**

Hi everyone, welcome back to the Tox Lab. I'm Rebecca. I'm Rob. This week we're going to be looking at two things which have got the same name but are actually very very different. Rebecca, words that are the same but have different meanings.

Do you have a favourite? I can't actually think of any examples, it's way too early for my brain to be engaged. Oh come on, there's hundreds. Yeah, I know.

Bank and bank. Yeah. And bank actually. I'm so confused.

Riverbank. Yeah. Plain banking. So many meanings.

Yes. I don't think I have a favourite. That is reasonable. Obviously this is a toxicology podcast, so you've possibly already guessed.

This week we're going to be looking at 2C-B and tuci, as it's sometimes known, pink cocaine. We're going to be looking at both of those, a little bit at why they've got such a similar name and just how vastly different the two things are. Before we jump into today's episode, if you want to stay up to date with our content, you can find us on Instagram at @the_tox_lab. We also have a LinkedIn page which we're quite active on and for those of you who don't use social media but still want to get in touch with episode suggestions or comments about our episodes, you can email us at thetoxlab@gmail.com.

First we wanted to have a look at the compound 2C-B, and this was one of a number of compounds which form part of what's called the 2C family. 2C-B was actually first synthesised in 1974 by Alexander Shulgin. He's a very famous Californian chemist who synthesised a very large number of novel drugs back in the 70s, and we haven't done an episode about him yet, but I feel like we should definitely put him on the list actually, similar to when we talked about Albert Hofmann.

Shulgin really is a character that has shaped the drug landscape over the years and its full name is 4-bromo-2-5-dimethoxyfanthilamine and Shulgin synthesised this compound, he tested it on himself and he reported that lower doses enhanced tactile sensation, mild euphoria and at higher doses it caused psychedelic visuals altered thinking. So it was considered similar to a drug like MDMA and it actually went under the radar for quite a few years after these initial experiments and fun fact, I've only learnt this this morning actually, in the 80s and the 90s it was actually sold legally as a pleasure enhancer for couples.

You could go and buy it from the shops in this discreet little packaging, particularly available in the Netherlands and Germany I'm told.

But it did then spread into rave culture, particularly people taking higher doses moved into the scene after MDMA was banned and then in 1995 the drug was eventually scheduled in the US banned across Europe and the UN recommended global control in 2001 and from that point it moved from what was a grey market scene to entirely black market and it emerged in the 2000s as a research chemical or an alternative to MDMA and it is still found occasionally in samples submitted to drug checking services but it has actually become a relatively rare compound, not something we see an awful lot of.

We have managed to find a paper where they looked at some of the toxic effects of people attending hospital following 2CB use. So Rebecca why don't you take us through this paper? So this paper is looking at the severity of poisonings after exposure to low and moderate doses of 2CB which they've classed up to 20 milligrams and high doses which is greater than 20 milligrams.

This study was actually quite interesting they were using calls to the Dutch poison information centre on suspected 2CB exposures then taking details and following up with patients interviewing them seeing if there were any leftover samples that they could test to analytically confirm the presence of 2CB. So this study covers the period between January 2016 and December 2018 and 59 patients met the study criteria and follow-up was successful in 32 cases.

For 11 of these cases both the patient and the physician were interviewed for 15 of them only the physician was interviewed about the particular case and then for 6 only the patient was interviewed. And the median time between exposure and follow-up was about 8 days. In this cohort 81% were male with a median age of 22 years, 84% of exposures were oral. There were two cases where the individuals had smoked 2CB and one case where they'd snorted it.

84% of them involved the use of tablets and on average people were taking about two powders were used in 13 cases and the median dose of 2CB was estimated to be about 35 milligrams. In terms of co-use with other drugs nine cases reportedly only used 2CB and nothing else and in those who consumed other substances seven patients had more than two standard drinks and 20 patients used other illicit drugs including cannabis, MDMA, amphetamine, LSD, GHB, ketamine, cocaine and then some other NPS drugs in a few.

75% of the patients in this cohort had experiences with other illicit drugs and more than half of the patients had admitted 2CB use before the event. And on the whole the majority of these were recreational use, a couple of them were accidental exposures, a couple of them were for the purposes of suicide and all patients across the cohort had experience symptoms. So nine patients had taken a low to moderate dose so they classed that as anything less than 20 milligrams of 2CB and the severity scale for these patients was classed as moderate.

Eight presented to the emergency department with two being admitted one of which was admitted to the ICU but both were discharged within 24 hours. And in this group symptoms included visual hallucinations, agitation, anxiety, tachycardia was quite a common symptom across these patients and a couple of them did have prolonged QT intervals as well. 17 individuals had taken a higher dose of 2CB so anything greater than 20 milligrams and the median dose within this group was 72 milligrams. 14 individuals were classed as having moderate effects, 3 were classed as having mild effects.

16 presented to the emergency department, 8 were admitted one of which being admitted to the ICU and all were discharged within 24 hours. And despite the higher dose the symptoms across this cohort seemed quite similar so drowsiness, visual hallucinations, agitation, tachycardia, increased temperature all being very common symptoms. They also had a category for unknown exposures so those where they weren't sure how much 2CB they'd taken and there were six cases in this group all classed as moderate and severity. Five had presented to ED, two were admitted but were discharged in 24 hours.

So in terms of the clinical presentation very general stimulant toxicity, tachycardia, agitation, increased body temperature is often associated with particularly serotoninergic stimulant drugs like MDMA. An awful lot of polydrug use in this cohort as well though, right? Like a lot of people not having just taken 2CB but also taken MDMA and cocaine and other things. And it did appear that there was a high proportion of patients in the lower dose group that had exposure to other drugs which might potentially account for how similarly each group presented.

They all have fairly similar symptoms, they were kind of graded very similarly. Okay so the people who were taking the higher dose were more likely to have just taken 2CB? Yes, yeah. As opposed to other people that were maybe taking a little bit alongside a little bit of other things.

Yeah. That makes sense. Biological samples from five patients were available for testing to analytically confirm the presence of 2CB. In one case blood and urine were present, for two cases there was only blood available and for another two cases there was only urine available.

And the time between exposure and the samples being taken was between 1.5 and 9 hours after exposure. All three urines that were tested were positive for 2CB. The case where we have paired blood and urine had 2CB present in the urine at a concentration of 342 nanograms per millilitre but was not detectable in blood. Out of the three blood samples available 2CB was not detectable in any of them.

In two of the urine-only samples they did detect a metabolite of 2CB, 4-bromo-2-5-dimethoxy-fern-ethyl-alcohol. And they did have leftover tablets available from two of these cases which were tested and found to have 2CB present at a concentration of about 10 milligrams. And it is important to remember with this data set that it was only cases that were reported to the Dutch Poison Information Service so it's likely that these cases were slightly more severe in effect because otherwise they probably wouldn't have attended a medical facility and therefore been reported.

So there could well have been a lot of people having taken 2CB in this time period that didn't contact the Dutch Poison Information Service, that's completely fair. And even though these weren't all analytically confirmed, 96% of 2CB tablets that were surrendered to drug testing facilities in the Netherlands did contain 2CB. So they are making the assumption that those self-reporting 2CBs were reliable self-reports. It's an interesting set of data isn't it?

So some evidence of some toxic effects on the background of a lot of polydrug use. Most people actually recovered relatively quickly without too much medical intervention and possibly some correlation here with the dose effect reports of Schulgin when he first tested this compound, higher doses leading to more psychedelic and more full-on stimulant effects. Interesting. So now let's look at 2C, also known as 2CB, spelt phonetically, also known as pink cocaine.

There is a bit of history as to why this is called 2C or 2CB. In the early 2000s in part of Colombia there were some very wealthy nightclubs and 2CB, actual genuine 2CB from Europe, was available to clubgoers. It was considered a rare European import drug at the time and eventually that supply dried up and so the people who were supplying these nightclubs instead started selling a mix of powders ketamine and MDMA and calling it 2CB. And then this spread across Colombia, most of South America and eventually made its way to Europe and to the US.

And it's become a bit of a thing, hasn't it, in the media. There's been a lot of celebrity involvement with 2C. So 2C has been mentioned in the media quite a bit recently. It's been mentioned multiple times in the trial of Sean Diddy Coombs, a New England Patriots wide receiver, Stefan Diggs was caught on video holding pink powder, Cardi B's been photographed in a boat with pink powders and it's also mentioned in Liam Payne's toxicology report following his death.

So it's almost become a drug of choice for celebrities and that sort of lifestyle. And that in itself has driven the marketing, hasn't it? We haven't mentioned the pink part actually, we should. We should.

It's not pink. Traditionally, if it's a mixture of MDMA and ketamine, that should be a white powder, but it's actually dyed pink. And what we're actually looking at here is clever marketing. I've also heard that sometimes it's like scented with strawberries or bubblegum as well.

Okay. That's my fun fact. I don't know how to respond to this scented drugs. Either way, it's become almost a desirable celebrity drug that people sometimes aspire to.

And so we're now going to look at some toxicology data coming out of Miami-Dade looking at toxicology results in cases where colored powders or 2C were mentioned. So Rebecca, why don't you take us through this? So as Rob said, this is a series of post-mortem cases out of the Miami-Dade medical examiner toxicology lab. And these cases are from January 2009 to October 2024.

To kind of narrow down these cases, they were reviewed for the presence of ketamine and then referenced to the use of or presence of colored 2C powder in the case history, the law enforcement report, or seen photos. Across this time period, 296 cases were positive for ketamine. Up to about 2017, they were seeing less than 10 cases a year involving ketamine. And then that's increased from 15 being positive in 2017 to 68 being positive in 2023.

And it's important to note that medically administered ketamine remained consistent throughout this time period, about 25% of all of their ketamine positive cases. So out of the 296 positive ketamine cases, eight involved the ingestion of a color powder referred to as 2C or pink cocaine. Powders were tested using GCMS and some cases have multiple powders present at the scene. So 14 in total were tested.

Most were light or bright pink, but I think there are a couple that are more purple in color. They were often strawberry or bubblegum scented. And in terms of the drugs found in these powders, ketamine was found in all. Ketamine precursor A was found in about eight out of the 14 cases.

And MDMA was also quite a common drug found within these and was found in 12 cases. Additional drugs that were found in these powders included MDA, methamphetamin, cocaine, caffeine, oxycodone, alprazolam, loratidine, and diphenhydramine. Three powders contained ketamine and MDMA only. And two powders were ketamine positive but did not have MDMA in them.

So one of these was ketamine, deschloroquetamine, cocaine, and uterine. And the other was ketamine and MDA. And it's important to note that 2CB was not found in any of these cases. So across the eight cases, ketamine and MDMA were quantitated in the blood sample.

So ketamine was found at concentration ranging between 0.38 and 8.8 milligrams per liter. Its metabolite nor ketamine was found at concentrations ranging from 0.16 milligrams per liter to 3 milligrams per liter. And MDMA was present at a concentration of 0.096 milligrams per liter to 3 milligrams per liter. And MDA was present at less than 0.01 to 0.265 milligrams per liter.

Quite a range of different drugs in those cases, isn't there? Some of which. The ketamine is erring on the side where you might think it might have played a significant role. On the other hand, sometimes it was the MDMA veering towards the fatal end of the range.

So we do have case details from these eight cases. Five of these cases were ruled as accidental deaths and three of these cases were ruled as suicides. So one of these cases involved a 35-year-old male who was known to abuse drugs. He was observed partying and using LSD, ketamine and fentanyl.

After returning home, he experienced shortness of breath and then became unconscious and a small clear bag of pink powder was found at the scene. Findings at autopsy showed that he had hypertensive and atherosclerotic cardiovascular disease, cardiomegaly, pulmonary congestion, left pleural effusion, hepatomegaly, splenomegaly and obesity. And on toxicology, he tested positive for fentanyl, norefentanyl, heroin, oxycodone, ketamine and its metabolite, MDMA, MDA, MDEA, methamphetamine, amphetamine, paracetamol, aprazolam, 7-amino, clonosopam, ceterazine, noxone, noscopine, LSD and piperine. So quite a cocktail.

That is one heck of a toxicology report. Yeah. And while this is only one of the cases in this series, all of them tested positive for multiple drugs. Presumably, there's not some suggestion that all of those drugs came from one bag of pink powder.

No. So two very, very different drugs effectively. Two CB, a single molecule, relatively predictable in terms of effect and dose, 2C, 2CB, pink cocaine, actually just a mix of sometimes sounds like whatever anybody could get their hands on. Typically, ketamine, sometimes MDMA.

Some of those other drugs, there was mentions of oxycodone, diphenhydramine, benzodiazepines, essentially a real mix of what could potentially be anything. Interestingly, one of the other names who sort of said this is pink cocaine. I've certainly heard it referred to as pink cocaine before. Most of these powders didn't contain cocaine, despite pink cocaine being one of its names.

It's really quite concerning, isn't it, that you've got this celebrity-driven marketing plus what your marketing is not even consistent, and people really don't know what they're getting into? I think this is a lesson I have to keep teaching myself, and that's that not everybody is a toxicologist because you look at this and you just think, why? Why are you doing this? Even if you wanted to take ketamine and MDMA at the same time, at least take them separately so you know what relative proportions of which you're taking.

What's your view on the celebrity culture and 2C's popularity? I think it's always worrying when celebrities are seen in the media with certain drugs because there will always be people that want to emulate that and then will seek out those specific things. With 2C or pink cocaine, you don't know what you're going to get, so that adds an extra layer of danger to it. It definitely adds an extra layer of risk, doesn't it?

We've talked so often about how with street drugs, dosing can be inconsistent because you don't know the purity of what you're taking. In the case of 2C, not only is the purity in question, but actually what's in it is in question sometimes. I think this does show possibly the need for more drug checking services for people to be able to actually test their powders and get some information on what they're being sold or what they're possibly going to take and help users make slightly more informed decisions. I don't know what the user perception is either.

I don't know whether people who buy 2C on the street are aware that it is a mix of multiple substances or whether they think it's 2CB or whether they think it's something else completely. I'm not sure if anybody's done survey data or anything like that. That would be really interesting to find out. Yeah, it would be.

I wouldn't be surprised if a lot of people thought that what they were buying was cocaine because of its alternative name as pink cocaine. Very different effect profile though, right? Taking ketamine and MDMA compared to taking cocaine. Yeah, but if you think you're buying something called pink cocaine, chances are you think you're going to get some cocaine.

That is fair, yeah. I guess one question, and this is possibly a bit out there, as toxicologists and we do our toxicology analysis and we write our toxicology report and we report ketamine and we report MDMA, do we need to be thinking more in terms of products rather than just chemicals? Are we missing public health nuance in just reporting the presence of ketamine and MDMA? Obviously, we don't always have the information.

We don't know necessarily that it was sold as a pink cocaine mix. I'm just thinking that we measure chemicals, we don't measure what's sold on the street and whilst they interact, are we missing some key data? I think there's an argument where it's feasible that it could be helpful reporting that like, oh, this was found at the scene and we've got these chemicals that could be related. It's just quite tricky,

especially when you're not testing the powders and the tablets and things to know what's in what, but having that information could be important and help inform users and things like that.

Yeah, I don't necessarily have all the answers. I'm just thinking it's a level of nuance here that is maybe being missed. Yeah, I think it's so hard from our perspective where we're just testing biologicals and not the actual substances seized at the scene, but pairing those together could be useful. Yeah, for sure.

So in conclusion, 2CB and 2C, same sounding names, but very different realities. 2CB, a single compound, clear pharmacology and a history. 2C, street level branding, unpredictable, variable mixes. And it does really highlight the importance, I think, of testing and the availability of testing to users.

Celebrity and cultural branding can make drugs appear more appealing. And as toxicologists, I do think it's important for us to understand the culture behind a drug and its name, as well as just understanding its mass spectrum. I'm particularly concerned by the bubble gum scenting. Yeah.

That was a slight shock to me. So I hope you've enjoyed listening to us this week. Do give us a like or a follow. Share the episode with a friend of yours who might think that pink cocaine is actually cocaine.

And do get in touch if you've got thoughts and cases relating to this. We really like to hear from you all. Hope you all have an amazing week, and we'll see you next time. Bye!