Kambo

Harm Reduction Information

Also spelled kambô and kampô; the skin secretion of the giant monkey frog (Phyllomedusa bicolor)

Last updated 10/28/2026

Please Read First

This page is educational. It is not medical, legal or professional advice, and I am not a physician or an attorney. This information was gathered from published harm reduction organizations, medical and legal sources, and my own training and experience, and I may have made mistakes. You are responsible for confirming anything here before you act on it, with a qualified medical provider and, for questions of law, an attorney. Laws and knowledge about psychedelics change quickly, and some of what is written here may have changed since the date above. Nothing here encourages anyone to break the law. It exists to reduce harm for people who will make their own choices. I do my best to keep up with current law and research, but I cannot promise that anything here is current or complete.

It is advisable to meet with a psychedelic-informed physician for an assessment before using any psychedelic or related substance.

Where this information came from: The sources listed under References, and my own training and experience.

This document was drafted with the support of Claude, an AI assistant. I reviewed it, and AI and I can both be wrong, so check anything that matters to you before you act on it.

What Kambo Is

Kambo is the dried skin secretion of a South American tree frog, Phyllomedusa bicolor, also called the giant monkey frog, giant leaf frog and bicolored treefrog [1]. A practitioner makes a few small burns in the skin, usually on an arm or a leg, sometimes a shoulder, lifts the top layer, and presses moistened secretion into the open spots [2][3][4]. Kambo is mostly a body experience, and Swinburne's overview says it is not considered psychedelic, though some survey respondents reported mild psychoactive effects [5][4]. What It Feels Like gives the range. Retreat menus often list it beside ayahuasca and mushrooms, and the risks it carries are of a different kind: blood pressure, heart rhythm, blood sodium and the esophagus, far more than the mind.

You will see it spelled kambo, kambô and kampô. Sapo, the Portuguese and Spanish word for frog, is used for the same ritual in several places, and in Brazil you will hear vacina do sapo, the frog vaccine [6][3]. Kambo sticks are dried secretion on small sticks, the form sold online [1][3]. People come to it for cleansing, strength, spiritual growth and relief from illness

[1][5]. No randomized trial has tested it for addiction, depression, pain or cancer, and the reviews I read say so plainly [1][7].

Where It Comes From

The frog lives in tropical forests of the Amazon basin, and the secretion comes from large glands in its skin that work as a chemical defense [1]. It is rich in peptides, which are short chains of amino acids. One review counts 28 characterized peptide sequences [1]. The authors of the main review say the species is rated Least Concern by the IUCN (2021) and is not listed under CITES, and they also say that rating is overdue for an update [1].

How Indigenous Peoples Use It

The peoples named in the literature include the Matsés, Katukina, Yawanawá, Kaxinawá, Mayoruna and Yawahua, and ethnological records cover more than 15 groups from five language families across seven countries [1]. A shaman or elder, often an older hunter, burns small points into the skin with a smoldering piece of vine, then applies the secretion [1][8]. Among the Katukina it goes on the shoulder and chest of men and the calves of women [1]. The reasons given include purifying the body, building strength, raising sexual stamina and clearing panema, a word for bad luck and weakness, especially in hunting [1][8]. It is also given to hunting dogs [1]. For the Katukina it has become a symbol of ethnic identity, carried on their association's logo [8]. Many groups treat the frog as a spirit and release it after collection [9].

Swinburne's overview says traditional use is simpler, with fewer points and little ceremony, and that neoshamanic practice adds songs, incense, prayers and more burn sites [4]. What the elders do in the forest and what a weekend retreat sells are different things, and the research on risk comes almost entirely from the second.

How It Left the Forest

Rubber tappers in Acre took up the practice and carried it into towns, and from there it entered therapy clinics and Brazilian ayahuasca churches such as Santo Daime and the Uniao do Vegetal [1]. It then moved into urban neoshamanic and wellness circles in Brazil, Europe, North America and Australia, where sessions often add singing, incense, tobacco snuff and sananga eye drops [1][8][4]. Dried secretion is sold online as kambo sticks, and courses train urban applicators [1][10]. Nobody knows how many people use it. Swinburne's overview found closed Facebook groups with more than 6,000 members and no better count [4].

What Indigenous Voices Say

The Katukina protested misuse and the patenting of the frog's peptides in 2003, and the Frontiers review counts 11 international patents between 2002 and 2018, all granted in northern hemisphere countries [1]. A 2004 alliance between the Katukina and the Brazilian government, meant to share benefits, stalled over questions of ownership [1]. Brazil's health regulator suspended advertising of kambo as a therapy the same year,

saying no proof of efficacy or of quality and safety existed [1]. A Yawanawá leader, Joaquim Luz, has criticized online sales and warned that use without Indigenous preparation or permission puts people at risk [7]. ICEERS asks outsiders to acknowledge where the practice comes from and to weigh who benefits from a growing wellness market [9]. The Chacruna commentary asks readers to avoid judging traditional harvest through a Western moral lens and to ask whether benefits flow back to Indigenous communities [10]. A 2023 study is said to describe the erosion of Indigenous knowledge in the commercial kambo trade with the word bioepistemicide; I know that only from Wikipedia and did not read the study [11].

The Frogs: Welfare and Sourcing

Traditional collectors find the frog at dawn by its call, tie its limbs loosely to crossed sticks so it gives up secretion, scrape it off with a small wooden rod and let the frog go [10]. Ribeiro describes this as a brief stress without lasting harm, and notes the Noke Koi belief that hurting the frog invites retaliation from snakes [10]. The Frontiers review reports that some collectors use electric shocks and restraints, and says the effects of repeated collection on parental care and offspring survival are unknown [1]. An editorial adds that no standards exist for commercial harvest and that ethical harvesting has no regulatory definition, a weak source whose first half matches the review [12].

Near Cruzeiro do Sul, small farmers have begun collecting secretion for high profits [10]. Trafficking of Phyllomedusa frogs is probably underreported, and look-alike species can be confused with this one [1]. Wild collection is the norm in every source I read [1][10].

When you pay for kambo far from the Amazon, someone upstream collected it, and you cannot check how. A practitioner's word that the frogs were treated well is a claim and carries no proof. The questions worth asking are where the secretion came from, who collected it, whether the frog was released, and whether the people who hold this tradition took part in the chain. A practitioner worth your trust can answer those plainly.

About the Sources

Some papers I read in full and others only as abstracts or summaries; the reference list says which. The evidence base is mostly case reports, one qualitative systematic review that contradicts its own counts, two small surveys and one practitioner's records. The larger survey had 386 respondents, most of them well educated, and about two thirds had used ayahuasca [5]. The surveys and the practitioner's records come from people who chose kambo and chose to take part, so they tell us what satisfied users say and cannot tell us how often harm happens, because people who were badly hurt, or who died, are not in them [13][5][14]. Many web pages that rank high for kambo, including wellness sites and a travel site, carry claims with no source; I used them only where I say so. Law-firm explainers carry the legal points, and I note where they disagree.

What I did not find. A published purity analysis of kambo sticks, or peptide standards to test against. Any source on farmed or captive-bred frogs. A test kit sold for kambo, or a

drug-checking service I could confirm accepts frog secretion. Measured human blood pressure, heart rate or body temperature from a controlled setting. A settled answer on state law beyond Colorado. I could not search the FDA's own site for warning letters or import alerts about kambo.

What It Feels Like

No one can promise you what a session will be. Kambo is the short, loud, bodily one: reports describe a fast reaction in the body, a hard stretch, then a calmer and clearer afterward, with little of the visions that other plant medicines bring. This section gives the range people report. Most of it comes from people who chose kambo and then chose to answer a survey or an interview or to talk to a journalist, so it leans toward people who found it worthwhile, and the researchers say so themselves [13][5]. The papers behind it are two surveys, one practitioner's records and a few case reports. Amounts and timing are left out here; How Long It Lasts, later in this sheet, gives what the sources say about length.

The Body and the Purge

The body speaks first, and fast. After the secretion goes onto the open spots, people describe facial flushing and heat spreading through the body, a rush to the head, a pounding or fast heart, dizziness, and tightness or a lump in the throat [4][15][16]. One woman compared the head rush to inhaling poppers [17], and an acupuncturist said a warm sensation spread through him before he reached for a bucket [18].

Nausea comes on fast, then intense vomiting, often with diarrhea or a sudden need to empty the bowels, abdominal cramps, swelling of the lips, eyelids or face, tearing, and sometimes loss of bladder control [15][4][16]. Practitioners and users treat the purge as the point and describe it as cleansing; that is a belief and not an established effect [4]. One woman could not vomit at all and described the feeling as her brain being punched from the inside [17]. An acupuncturist vomited violently and felt awful afterward [18].

In records from one practitioner (147 people, 241 sessions), facial swelling happened in 70.5 percent of sessions, sweating in 53.3 percent, an immediate bowel movement in 45.2 percent and fainting in 10.4 percent. More burn points and more body sites went with more swelling and sweating, and no severe adverse effect was recorded in that sample [14]. Those records show what a session can look like in one pair of hands, and they say little about rare disasters or about practitioners with less skill. Why the heart and blood pressure react as they do is under Heart, Blood Pressure and Body Temperature.

How the Session Moves

Onset is very fast, within minutes of the secretion going on [1][3]. The hard part is short: in the Berlin survey most people described the acute experience as under an hour [13], and Medsafe says the worst eases within about an hour and is followed by apathy and drowsiness [15]. How Long It Lasts has the figures.

Afterward people go listless and sleepy, and some sleep for long stretches [19][15]. Then many describe a clear, energized, reset feeling [19][20][18]. An acupuncturist lay covered in blankets, and soon after he began to smile and got up [18]. A retreat founder said she was ready to go about her day soon after the purge [20].

Seeing and Hearing

Mostly nothing of the kind. In the Berlin survey of 22 people, no psychedelic-type distortions of perception or thinking were reported, and scores for complex imagery, unity and spiritual experience were low [13]. The larger survey describes the acute effects as severe physical reactions and mild psychoactive effects [5]. Five of the 22 said kambo puts a person in an inebriated or high state [13]. A review article quotes one man's account of an awareness of his veins and arteries, urges to growl or move on all fours, and a feeling of animals moving through him, with no dreams or visions [19]. Some people describe sharper senses and intuition afterward [20].

Feelings

The Berlin survey describes a flat emotional picture during the hard part: positive and negative feeling were both lower than usual, similar to hypnosis or meditation, and people did not feel confused [13]. The authors read the fear that did come as a reaction to the physical effects, and no psychological crises were reported; insanity, isolation, fear of death and paranoia were not reported as features [13].

Afterward people describe relief and calm. A retreat founder felt as if toxins were leaving her body, her mind was clear, and she was grateful to be alive [20]. A biologist said she lay under a duvet in a deep calm, numb in a good way, and felt positive about the future for the first time in a while [17]. A gardener said it left him feeling empty [20]. One woman at a group ceremony felt a sense of togetherness with the others in the room [17].

Insight and Presences

Insight scored low during the hard part in the Berlin survey, and mystical-type experience scores were relatively low, with a few higher outliers [13]. Meaning comes later for some. In the weeks afterward, 6 of 13 people rated the session strongly spiritually significant and 7 of 13 placed it among their ten most meaningful experiences [13]; in the larger survey 64 percent rated it at least very much spiritually significant [5]. The Berlin group was recruited at a public drug-information event and through practitioners' clients, so expect a positive lean [13].

The presence people name is the frog: about 42 percent of the larger survey felt connected to the spirit of the frog, which the authors call the most surprising acute effect [5]. A practitioner who came to it as a skeptic said it showed her how differently she could live [18].

When It Is Hard

The hard part is physical: the purge, the swelling, a racing heart, fainting [13][14]. In the Berlin survey the challenging moments were mostly physical distress, with psychological challenges barely reported [13]. An acupuncturist vomited violently and said the time felt much longer than it was, and he warned that kambo is not something to enter lightly and does not promise a pleasant experience [18]. Serious harm is rare but documented; the cases are under Toxicity and the Mind and Reported Deaths, and the signs that need a call, including ones that start hours after a calm session, are under Warning Signs.

What Shapes the Session

Survey authors say expectation and setting may shape the effects and ask for research [13][5]. In the Berlin survey about two thirds of sessions were one-to-one with the practitioner and under a third were in a group, and about half took place in a healing place or temple, with others at home or in nature [13]. One woman's ceremony was held in a dimly lit living room with chanting, sage smoke and rainforest sounds, and the practitioner murmured encouragement [17]. Repetition changes it too: one person found the vomiting easier with repeated sessions [18]. What a person drinks beforehand matters for safety as well as comfort; see Vomiting, Fluids and Salt Balance.

The Days After

Most people in the surveys report positive effects that last. In the larger survey 87 percent said their well-being or life satisfaction improved [5], and the Berlin follow-up described a feeling of connection to nature and to inner life, with an afterglow weaker than what people report after LSD or psilocybin [13]. Some describe lighter, clearer, more energized days: a retreat founder reported heightened intuition and senses [20], and an acupuncturist said he felt less depressed right away and more clearheaded and focused months later [18]. One woman stayed sober after nights out at first, then wanted to drink again after a few weeks and took another session [17]. Another woman's face swelled like a puffer fish and stayed swollen for two days [17].

In the larger survey, 2.85 percent attributed lasting physical health problems to kambo and 1.81 percent lasting mental health problems [5]. Those are self-reports with no medical confirmation, and there is no way to tell kambo from everything else in a person's life.

How It Is Taken

Burn Points on the Skin

A practitioner burns a few small circular spots into the outer skin, with a smoldering vine in traditional use and with other hot tools in many Western sessions, lifts the burned layer, and presses moistened secretion onto the raw skin [1][3][4]. The systematic review describes burns on the upper arms of men and the lower legs of women [2]. The peptides

enter through broken skin and effects begin within minutes [3]. Traditionally the secretion is wiped off after a short time [11].

The risks of this route are burns that can scar [16], wound infection [3], the shared-equipment concern described above, and a fast onset that leaves little time to change your mind. Every body-wide risk in the section before comes on top of those.

Forms You May Meet

Dried secretion on sticks is the form most people meet online. The Frontiers review also mentions freeze-dried (lyophilized) extracts, and names species mix-ups and adulteration as risks [1]. A label on a stick says little about strength, since no standard measures the peptides in it [2]. Practitioners count burn points as the amount; in the practitioner records more points went with more swelling and sweating [14]. I give no point counts here, because no source can say what a safe number is.

Other Routes

The medical sources I read describe only skin application. One news article says it is swallowed to induce vomiting, which the medical papers do not describe [21]. Anything beyond skin burns is untested, and an offer of it should raise your guard.

How Long It Lasts

Sources agree on a short main event and differ on the numbers. Swinburne's overview gives roughly 15 to 30 minutes for the physical peak, with effects that can last hours [4]. Healthline gives 5 to 30 minutes, rarely several hours [16]. Medsafe says the worst eases within about an hour and is followed by apathy and drowsiness [15]. Some people report energy or clarity afterward, sometimes euphoria, and a few report hallucination or sedation after the peak [1][5].

The dangerous problems can show up hours after the session, which is the part most people do not expect. In one Chilean case seizures began within about two hours; in the brain-death case severe headache and repeated vomiting began about five hours after the ceremony; in the liver case jaundice came on a few days later; and one reported woman had symptoms lasting 22 hours [22][23][24][1]. A session that ends calmly has not necessarily ended the risk. The signs to act on are under Warning Signs.

About Kambo and Its Effects on the Body

How It Works in the Body

The burns remove the top layer of skin so the peptides reach the blood quickly, and effects begin within minutes [1][3]. What follows comes mostly from animal and test-tube work and from case reports, and one overview notes there were no early-phase safety trials in people as of 2019 [11].

Phyllocaerulein. The most abundant peptide. It lowers blood pressure and causes nausea and vomiting, and with sauvagine it seems to explain much of the gut response [1].

Phyllomedusin. A tachykinin, a family of peptides that contract smooth muscle and widen blood vessels. In rats it raised stress hormones and blood sugar [1][3].

Phyllokinin. Related to bradykinin and more powerful than bradykinin at lowering blood pressure in dogs. It is linked with flushing and redness along with a faster heartbeat [1].

Sauvagine. A 40-unit peptide in the corticotropin-releasing family. In animals it causes a drop in blood pressure followed by a faster heart rate, with less urine and a lower body temperature [1]. The 2025 brain-death report proposes that sauvagine may trigger release of antidiuretic hormone, which would make the body hold on to water [23].

Dermorphins and deltorphins. Opioid peptides acting on mu and delta receptors, listed with nausea, vomiting, euphoria, pain relief and possible respiratory depression [1]. Deltorphin A was found in the blood of one man who died [25]. Sources disagree on whether these peptides reach the brain: the Frontiers review says deltorphins cross the blood-brain barrier in animal studies, Wikipedia says they are thought not to, and the brain-death report suggests their concentrations are too low to matter much [1][11][23].

Other peptides. Dermaseptins, adenoregulin and others kill microbes or affect cells in laboratory dishes, which fuels the medical claims. A result in a dish is far from a treatment in a person [1].

Reviewers have proposed several routes to serious harm: low blood pressure and a fast heart rate stressing a vulnerable heart, opioid-like effects, fluid shifts and swelling, and the sodium problem described below [2][23]. These are hypotheses. No mechanism of death has been proven in a person.

Heart, Blood Pressure and Body Temperature

The peptides lower blood pressure and speed the heart; that is the plain pharmacology of phyllokinin, sauvagine and phyllocaerulein in animals [1]. In people the reports are a racing heart, flushing, dizziness and faintness from low blood pressure. One ICEERS information page says heart rates as high as 190 beats per minute have been reported and describes large swings in blood pressure, with no source given [9].

The first published forensic death was a 42-year-old man with a thickened left heart chamber. Deltorphin A was found in his blood, tests for alcohol and other drugs were negative, and the authors could not state a definite cause [25]. Secondary accounts give differing details about his age and weight, and about the timing, so read this case as one report with loose edges [2][6]. In the brain-death case a heart-injury marker (troponin) was raised and potassium was low, and the authors tell clinicians to watch for dangerous rhythm problems when vomiting has drained electrolytes in people with heart disease [23].

The systematic review lists low blood pressure and fast heart rate, along with sudden cardiac death, as the leading heart concerns [2].

Sauvagine lowers body temperature in animals [1], the systematic review lists overheating among proposed mechanisms [2], and the brain-death patient was rewarmed, which suggests she had become cold [23]. The direction in people is unclear.

Vomiting, Fluids and Salt Balance

Low sodium (hyponatremia) and SIADH. This is the best-documented serious harm. Hyponatremia means too little sodium in the blood; SIADH is a state in which the body holds on to water it should pass. Reported cases come from Slovenia, Canada, Chile and the United States, and several people had seizures [1][2][26]. In the Chilean case a woman had drunk at least six liters of water over a few hours after an ayahuasca ceremony, then took kambo and had repeated vomiting, diarrhea, confusion and seizures, with a sodium of 120 and signs of SIADH, and she recovered after saline and fluid restriction [22]. The Slovenian woman drank about six liters [6]. In the brain-death case friends said the facilitator's protocol had her drink large volumes before the ceremony; her sodium was 123 and she developed brain swelling [23]. A 2025 report from a US hospital describes the same pattern and says clinicians must decide whether the low sodium comes from ritual water drinking or from a toxin-driven SIADH [26]. Whether the secretion itself causes SIADH, or whether water plus vomiting does it alone, is not settled, and the case reports cannot separate the two [26][22]. Ceremonies that push water and then trigger heavy vomiting set up both.

Toxicity and the Mind

Overdose and deaths. No safe or lethal amount has been established. Each batch is the secretion of different frogs, and peptide standards for testing do not exist, so there is no way to know how much active material is in a burn point [2]. The 2025 systematic review found only a few deaths in the published literature and could not give a rate, because nobody counts [2]. Swinburne's overview calls the documented harms rare relative to likely use [4]. My reading: most published deaths involve an existing heart condition or heavy water drinking, or forceful vomiting, and the cases that can be checked are a small slice of what happens.

Seizures. Seizures appear in the low-sodium cases and in a case where ayahuasca was also taken, and Healthline lists convulsions among risks [1][22][16].

Liver, kidney and muscle. A 34-year-old man developed jaundice and a liver enzyme (ALT) above 2,000 after repeated sessions over about two months; viral and autoimmune hepatitis and Wilson disease were ruled out, and he recovered in 10 days. He had also drunk about three beers a day in the two years before, so the link is plausible and unproven [24]. A 41-year-old woman in Chile had seizures, needed a breathing machine, and developed muscle breakdown (rhabdomyolysis) and kidney failure before recovering

within a week [2]. The Frontiers review lists liver and kidney damage, plus pancreas damage, as possible [1].

The esophagus and the lungs. Forceful vomiting can tear the esophagus, and kambo cases include a rupture with a collapsed lung and septic shock, a Boerhaave case in a man described as healthy, and the perforated esophagus in the 2021 death [1][2][21].

Swelling and immune-type reactions. Facial swelling is expected, as described under The Body and the Purge. New Zealand's safety center received a report of hypersensitivity vasculitis, an inflammation of blood vessels, linked to a kambo ritual [15]. A woman in Brazil developed dermatomyositis, an inflammatory muscle and skin disease, and recovered on prednisone over about eight weeks [2]. Throat tightness is common [16], and the signs that need a call are under Warning Signs.

Fainting and falls. Fainting is common in the practitioner records, described under The Body and the Purge. It can injure a person who is standing or sitting on a hard surface, and the same authors warn of choking on vomit [14]. Low blood pressure and violent vomiting together explain why a person can be fine and then go down fast.

Psychosis, panic and lasting mental effects. A 33-year-old woman using kambo for chronic pain developed psychosis and recovered on risperidone over a nine-day admission [1][2]. Healthline lists psychosis and depression with anxiety among reasons to avoid kambo, with no study behind it [16]. In the large survey, 1.81 percent attributed lasting mental health problems to kambo; the Berlin survey found fear and paranoia rare [5][13]. A single report of psychosis cannot show how often it happens.

Burns, scarring and infection. The burns are open wounds that can scar, and the 2014 letter warns of wound infection [3][16]. The people most at risk of infection are those with weak immune systems, including those who had chemotherapy or radiation in recent weeks, per a weak source [27]. Equipment that breaks skin, such as a burning stick or a needle, can carry bloodborne infections, hepatitis B and C among them, if it touches more than one person. That is my reasoning from how those infections spread.

Reported Deaths

Deaths in the medical literature. A 42-year-old man in Italy, found dead after chronic use, with a thickened left heart chamber; the details are under Heart, Blood Pressure and Body Temperature [25]. A 52-year-old man in Brazil who died after an application, reported in a letter from a 2008 news item [6]. An Australian woman who died during a ceremony, with the cause under coroner investigation when it was reported [2]. A 58-year-old woman with bile duct cancer who died of a body-wide inflammatory response that looked like her cancer worsening [1]. A 62-year-old woman with a ruptured esophagus and a collapsed lung, in septic shock, whose outcome the review does not state [1]. A man described as healthy who developed Boerhaave syndrome, a tear of the esophagus from forceful vomiting [2]. And a 35-year-old woman, six months postpartum, who died of brain swelling from low sodium, described under Vomiting, Fluids and Salt Balance [23].

Deaths in news and court reports. A 39-year-old woman in Australia in 2019, who took part for chronic back pain [7]; the Australian regulator has said it believes kambo caused the death of a woman, which appears to be this case [28]. A 46-year-old man who died on 10/16/2021 at a retreat in northern New South Wales after ayahuasca and kambo, with a perforated esophagus; the coroner suspended the inquest after finding evidence that could support charges and referred it to prosecutors, and the retreat leader was barred from providing health services [21][29]. A 22-year-old who died in 2018 at a Florida retreat that combined ayahuasca and kambo, attributed to low sodium, followed by a $15 million jury award in 5/2024, per a law-firm explainer [30]. A 33-year-old woman in Mexico in 2024 and a 40-year-old man in the United Kingdom in 2026, after cleansing ceremonies [7]. The UK case is under investigation, and reports of an arrest come from an editorial I could not verify [12]. News reports are not medical records, and I read none of the inquest findings.

Legal Status

Last checked 10/28/2026.

Federal

Kambo is not on any of the five federal controlled-substance schedules, according to two legal explainers [30][31]. I checked the one place a peptide could land: the Schedule II list in 21 CFR 1308.12 names no frog peptide, and no dermorphin or deltorphin, and I could not open the Schedule I page, so my check is partial [32]. LegalClarity says the Federal Analogue Act could reach the opioid-like peptides in theory and that it knows of no case applying that idea; that is an unsourced statement from a site with probable errors [31]. Not scheduled does not mean approved or safe.

The FDA has approved kambo for no use. Selling it with health claims could make it an unapproved drug under the Federal Food, Drug, and Cosmetic Act, and advertising claims are a Federal Trade Commission matter, according to the same explainers [30][31]. One explainer says dried secretion counts as a wildlife product that needs a declaration to the US Fish and Wildlife Service at import, and that Phyllomedusa bicolor is not on the CITES lists; I could not check the first half [31][1]. Al Jazeera mentions a January 2025 advisory from the US embassy in Peru telling citizens not to use kambo, which I could not confirm [7].

Courts have been the main US response; the Florida award is under Reported Deaths [30].

Other states. I could not settle state law. One law-firm explainer says a handful of state and local actions have banned or restricted kambo after harm, and names none. Another says no state bans it by name, cites nothing for that, and points to unlicensed practice of medicine as the usual state-level exposure [30][31]. Both claims are unverified. Treat state status as unknown until you read your own state's rules.

Colorado

Colorado's Natural Medicine Health Act (Proposition 122, passed 11/2022) defines natural medicine as dimethyltryptamine, ibogaine, mescaline (excluding peyote), psilocybin and psilocyn, and the initiative text mentions no animals at all, frogs and secretions included [33]. The personal-use protections in that law therefore do not cover kambo. The Division of Natural Medicine home page, which lists items through October 2026 (rules effective 7/1/2026 and an emergency rule on sales licenses effective 8/12/2026), has no item about kambo [34]. No Colorado law that I found names kambo. Whatever Colorado does about psychedelic plants and fungi does not carry over to this frog.

Outside the United States

Australia classed kambo as a Schedule 10 poison, meaning sale, supply and use are prohibited, with the ban in force from 10/1/2021 [35][4]. Brazil banned its sale and marketing in 2004 [7], and the review describes that as a suspension of advertising for therapy [1]. Chile prohibits import [7]. The UK allows buying it and does not license it as a medicine [7]. New Zealand has not banned it and has not approved it as a medicine [15] [30]. Canada's status is unclear [36]. Laws differ and change, and a retreat abroad may be legal where it is held and carry the same medical risks.

Contraindications

This section names the medicines and conditions that make kambo riskier or unsafe for a particular person. Evidence key: CT means controlled trial data, CASE means case reports, REPORTS means self-reports, practitioner screening lists or community experience, and THEORY means expected from the pharmacology with no kambo report found. There is no CT entry anywhere, because no controlled trial of kambo in people exists. No study I found tested kambo against any named medicine, so each medicine below is either a caution from a weak source or my own inference from what the peptides and the vomiting do, and I mark which. Never stop a prescribed medicine on your own. Talk to the prescriber first, since stopping can carry its own risk.

Medications

Blood pressure medicines (ACE inhibitors such as lisinopril; ARBs such as losartan; calcium channel blockers such as amlodipine; beta blockers such as metoprolol and propranolol; alpha blockers such as doxazosin; clonidine; hydralazine; nitrates). Kambo's peptides lower blood pressure and speed the heart, fainting is documented, and a weak source names blood pressure medicine as a concern [1][14][27]. No interaction study. THEORY and REPORTS.

Diuretics (hydrochlorothiazide, chlorthalidone, furosemide, spironolactone). These push the body to lose sodium and water, and low sodium is the best-documented serious kambo harm. Thiazide-type diuretics are known to cause low sodium on their own. My inference, with no kambo source. THEORY.

Heart rhythm drugs (amiodarone, sotalol, flecainide, digoxin) and other medicines that lengthen the QT interval (azithromycin, levofloxacin, ondansetron, methadone, citalopram and several antipsychotics). Heavy vomiting drains potassium and magnesium, and the brain-death report's authors advise watching for dangerous rhythm problems from electrolyte shifts in people with heart disease [23]. Digoxin becomes more toxic when potassium is low, which is general pharmacology. THEORY.

Blood thinners (warfarin, apixaban, rivaroxaban, dabigatran, clopidogrel, aspirin). Healthline lists past brain hemorrhage or aneurysm, and blood clots as reasons to avoid kambo, and a person on blood thinners usually carries one of those histories [16]. Large swings in blood pressure and forceful vomiting are plausible bleeding triggers, and burns bleed more on blood thinners. THEORY and REPORTS.

Antidepressants (sertraline, fluoxetine, escitalopram, venlafaxine, duloxetine, amitriptyline, mirtazapine). ICEERS advises caution with psychiatric medicine, and a weak source names serotonin-related supplements [9][27]. By standard pharmacology, SSRIs, SNRIs and tricyclics can themselves cause low sodium (SIADH), which would stack with kambo's main documented risk. One of the reported serious cases was a woman with depression, whose medicines the review does not list [2]. THEORY.

Lithium. Lithium levels rise with dehydration and with vomiting and sodium loss, and lithium toxicity causes tremor and confusion, and seizures. General pharmacology, not a kambo report. THEORY.

Antipsychotics (risperidone, quetiapine, olanzapine, aripiprazole, haloperidol). Several lengthen the QT interval and lower blood pressure on standing. One kambo-related psychosis was treated with risperidone [2]. THEORY.

Seizure medicines (carbamazepine, oxcarbazepine, valproate, lamotrigine, levetiracetam, phenytoin). Seizures are among the reported serious events, mostly alongside low sodium [1][22], and carbamazepine and oxcarbazepine can lower sodium themselves. Do not stop them. THEORY.

Medicines that cause water retention (desmopressin; the chemotherapy drugs cyclophosphamide and vincristine; opioid pain medicines). They can cause or worsen SIADH, the same state seen in the kambo hyponatremia cases [26][22]. THEORY.

Opioids and opioid blockers (methadone, buprenorphine, oxycodone, morphine, naltrexone). Kambo contains opioid-receptor peptides whose real effect in people is disputed [1][23]. If they do act, they could add to opioid medicine's sedation and slowed breathing, and a blocker such as naltrexone could blunt them. THEORY.

Benzodiazepines and sleep medicines (lorazepam, diazepam, alprazolam, zolpidem). A weak source lists sleep aids as a concern [27]. Sedation and slowed

breathing would add to any opioid-like effect, and a sedated person who vomits cannot protect the airway. THEORY.

Stimulants and decongestants (amphetamine, methylphenidate, cocaine, pseudoephedrine) and nicotine. They raise heart rate and blood pressure while kambo swings both, and tobacco snuff is often part of kambo sessions [1]. THEORY.

Immunosuppressants, steroids, chemotherapy and radiation. Open burns raise the infection risk. Two weak sources advise against kambo within weeks of chemotherapy or radiation, or while taking immune-suppressing medicine [27][37]. Prednisone was the treatment in a kambo dermatomyositis case [2]. REPORTS and THEORY.

Diabetes medicines (insulin; sulfonylureas such as glipizide). Fasting and vomiting can drop blood sugar, and phyllomedusin raised blood sugar in rats [1]. THEORY.

Steroid replacement and thyroid medicine (hydrocortisone, fludrocortisone, levothyroxine). Addison disease (adrenal failure) is on Healthline's avoid list, and sauvagine belongs to the family that drives stress hormone release [16][1]. People who depend on replacement steroids can fall ill fast when vomiting keeps tablets from staying down, which is general medicine. THEORY and REPORTS.

Conditions

Heart disease, a thickened heart muscle, rhythm problems, a pacemaker or past heart surgery. The first forensic death involved a thickened left heart chamber [25], a Brazilian letter advises warning people with severe cardiovascular disease [6], and the systematic review names sudden cardiac death as a leading concern [2]. CASE and REPORTS.

High or low blood pressure. Both are on Healthline's avoid list, and kambo lowers blood pressure while forcing the heart to work [16][1]. The Brazilian letter specifically names syndromes of low blood pressure [6]. REPORTS and THEORY.

Past stroke, brain hemorrhage or aneurysm, or blood clots. On Healthline's avoid list with no explanation or study [16]. Rapid blood pressure swings and straining to vomit are the plausible reasons. REPORTS and THEORY.

Seizure disorders and epilepsy. Healthline lists epilepsy [16], and seizures are among the reported serious events [22]. CASE and REPORTS.

Kidney disease. Kidney failure followed rhabdomyolysis in a reported case [2], and vomiting plus water shifts stress failing kidneys. CASE and THEORY.

Liver disease, past hepatitis and heavy alcohol use. A reported toxic hepatitis, in a man with a history of regular beer drinking [24], and the Frontiers review lists liver damage as possible [1]. CASE.

Adrenal, thyroid and pituitary conditions, and any history of low sodium or SIADH. Addison disease is on Healthline's avoid list [16]. One Chilean woman had hypothyroidism, but her thyroid tests were normal during the emergency, so I count that as a note and not a finding [22]. Anyone who has had low blood sodium is the person the sodium cases most resemble. REPORTS and THEORY.

Eating disorders, fasting and dehydration before a session. Self-induced vomiting and fasting drain electrolytes, and kambo adds heavy vomiting; weak sources describe fasting as part of preparation [1][37]. THEORY.

Psychosis, bipolar disorder, severe depression, anxiety and trauma conditions. Healthline lists psychosis and depression with anxiety [16], a reported psychosis followed kambo [2], and a depressed woman is among the serious cases [2]. CASE and REPORTS.

Pregnancy, trying to conceive and breastfeeding. The ritual has been used in the Amazon to end pregnancies, and the Brazilian authors and the systematic review advise pregnant people to stay away [6][2]. Healthline lists breastfeeding [16]. REPORTS.

Children and people of low body weight. The dose relative to body mass is larger [6] [2]. REPORTS.

Cancer and recent cancer treatment. A woman with bile duct cancer died of an inflammatory response that looked like her cancer worsening [1], and a cancer survivor is among the recent news deaths [7]. Two weak sources advise waiting after chemotherapy or radiation [27][37]. CASE and REPORTS.

Esophageal disease, hiatal hernia, severe reflux, and recent chest or abdominal surgery. Forceful vomiting tore the esophagus in several reported cases [1][2][21]. A weak source advises against kambo while recovering from surgery [37]. The conditions that weaken the esophagus are my inference. CASE and THEORY.

Asthma, severe allergies, angioedema, autoimmune and connective tissue disease, skin disease at the burn site. Throat tightness and facial swelling are expected effects [16], hypersensitivity vasculitis and dermatomyositis have followed kambo [15][2], and a weak source names Ehlers-Danlos syndrome [27]. The asthma and allergy entries are inference. CASE and THEORY.

Active substance dependence. A weak source lists active addiction as a reason to avoid it [27]. REPORTS.

Other Substances and Combinations

Combinations of medicines get their own document with a large warning at the top; this section is the short version for kambo. The evidence here is case reports and community advice, and none of it is controlled.

Ayahuasca. The pairing is common in retreat settings, and the Frontiers review reports hospitalizations after combined use [1]. Both cause vomiting, so fluid and electrolytes go out twice. The Chilean sodium case followed ayahuasca and heavy water drinking, a seizure case involved concurrent ayahuasca, and the 2021 New South Wales death and the 2018 Florida death both followed ceremonies that combined the two [22][1][21][30]. Healthline advises against combining them [16]. CASE.

Other plant and animal medicines (the Sonoran Desert toad, jurema and similar). Healthline advises against pairing kambo with them [16].

Rapé or hapé, and sananga eye drops. Often used near kambo sessions, and the Frontiers review does not assess them as interactions [1][4]. Tobacco snuff carries nicotine, which raises heart rate and blood pressure; that is my inference. Hapé has its own sheet.

Ibogaine. A weak source says kambo is often paired with it [37]. Ibogaine has its own sheet, with its own heart warnings.

Cannabis. One reported woman tested positive for cannabinoids and recovered quickly [2], and the man with hepatitis sometimes smoked cannabis [24]. These are co-use notes, with no evidence either way about interaction.

Opioids, benzodiazepines and sleep medicines. See Contraindications. THEORY.

Large amounts of water. See Vomiting, Fluids and Salt Balance.

Addiction and Misuse

Physical dependence has not been shown, and no withdrawal syndrome after kambo has been reported, though no study has followed regular users to look for one. The Frontiers review lists possible dependence among the effects of the opioid peptides in general [1]. Tolerance has not been studied.

Claims that kambo treats addiction are common in the ceremony world, and no controlled trial supports them [1][7]. Using it to get through withdrawal from another drug would put dehydration and vomiting, plus blood pressure swings on a body that is already under strain; that is my reasoning, with no study behind it.

Compulsive repeated use is the more realistic worry: sessions every week as a detox, a pull toward the purge itself, or a belief that suffering is the same as healing. In the liver case a man held weekly rituals for about two months, and gave up alcohol and tobacco to purify himself [24].

Addiction means loss of control and craving, with use that continues despite harm, often with withdrawal. Misuse means use that raises risk or causes harm: going without a screening, combining it with other plant medicines or sedatives, drinking water to excess, skipping medical care for a serious illness, or repeating it to chase a feeling of purging. Kambo can be misused without any dependence at all. That is my clinical lens.

Testing and Purity

What Is Really in the Product

Confirming what is in a secretion takes liquid chromatography with mass spectrometry, which is not widely available, and peptide standards do not exist and peptides degrade quickly [2]. In the 2017 forensic case a laboratory isolated phyllocaerulein, phyllokinin and deltorphin A from the sticks found at the scene, so confirmation is possible and amounts to research-laboratory work [25].

The Frontiers review lists species mix-ups and adulterated freeze-dried extracts as risks, noting that several Phyllomedusa species live together near Manaus [1]. The 2019 Brazilian letter worries that new practitioners might substitute secretion from another animal, such as the cane toad (Rhinella marina), and the systematic review says the worry is not documented in any specific case [6][2]. ICEERS says accidents have happened when the secretion came from the wrong frog species and names no cases [9]. Healthline links to a report of sticks coated with egg yolk and sold as kambo, which I could not open [16]. From general toxicology, and not from a source I opened for this page: toad secretions contain heart-active steroids, so a toad swap could add a heart risk the frog does not carry. Taken together, fake and mixed-up sticks are reported, no rate is known, and a stick cannot tell you which it is.

Because each batch comes from different frogs, collected in different ways and stored for different lengths of time, two sticks from one seller can differ; that is my inference from how the secretion is made, and the systematic review's point that no peptide standard exists fits it [2].

Test Kits

Color reagent kits are built for small molecules such as MDMA and LSD. A reagent could not tell you the species or the peptide content, or what else is mixed in. The protection that exists is in who you trust and what plan they have, because testing of the product cannot give you a green light.

Preparation and Integration

No dosing or timing numbers are given here. Those are left to a medical provider.

Before

Read Contraindications first, especially heart and blood pressure history, past low sodium, every medicine you take, and any history of stroke, aneurysm, seizures or psychosis. Take that list to a physician who works with plant medicines and ask: does my heart and blood pressure history make this unsafe, do any of my medicines raise the risk, and does it make sense to check my sodium and my kidney and liver blood tests first? Those questions are my suggestions and do not come from a published protocol. Do not stop a medicine yourself.

Ask the practitioner every question under Choosing a Facilitator. Be wary of anyone who waves off your medicines or conditions, promises a cure, treats a bad reaction as a lesson, or pushes you to drink water beyond comfort. The sodium cases are under Vomiting, Fluids and Salt Balance. Sources give conflicting water advice, from a liter or two beforehand to avoiding large amounts quickly, so settle it with your physician and not with a ceremony script [1][37].

Keep the day free of ayahuasca and other purges and plant medicines (see Synergistic Effects). If the draw is a cure for cancer, hepatitis, diabetes or another serious illness, the evidence does not support it [1][7]. Keep your treating doctors in the loop. Arrange for a sober person to stay with you and to drive you home, and plan to have someone near for the hours after, because the sodium problem has shown up hours later [23].

Choosing a Facilitator

Kambo practitioners are not licensed by any medical board in the US. The International Association of Kambo Practitioners is a self-governing group, and its certificates are not medical credentials [30]. Courses train applicators in cities far from the Amazon [10], certificates come from private bodies [12], and the systematic review points to non-traditional practitioners, unknown numbers of practitioners and unregulated internet sales as concerns [2]. In the small Berlin survey, 15 of 22 sessions were given by alternative health practitioners or neoshamans, 2 by Indigenous shamans and 3 by laypeople [13].

Where the training is thin, the plan for the bad hour is thin too. My questions for any practitioner, which are not a published checklist: Do you take a written health history and ask about every medicine? What will you do for faintness, severe vomiting, a seizure or a swollen throat? Is a phone in reach to call 911? Will you stop when I say stop? Do you tell people to keep drinking water? Can I leave without an argument? How do you get the secretion, and from whom?

During the session. Sit or lie low and keep a bucket within reach; fainting is common enough in one practitioner's records to plan for [14]. A sober person should watch you throughout, with a phone in reach. If you feel faint and need to vomit, lying on your side is better than sitting up. Drink only to thirst and do not follow a schedule that makes you force fluids. That advice is my reading of the sodium cases, not a tested rule [23][22]. Say stop early if you feel any of the warning signs listed under Warning Signs. A practitioner who argues has told you what you need to know.

After

Rest, eat light food and drink to thirst. Watch yourself and let someone else watch you for the rest of the day and the night; the signs to act on, including ones that come hours or days later, are under Warning Signs. Keep the burns clean and leave scabs alone; that is ordinary wound care and my suggestion, not a kambo protocol. Tell your physician you used kambo and what was in your ceremony.

For integration, talk through the experience with a person you trust, and a therapist if it opened something heavy. Contact a clinician or the Fireside Project if fear or intrusive images, or unusual beliefs, persist [38].

If You Need Help Now

In a medical emergency, call 911. If you are in emotional crisis, you can call or text 988. Fireside Project has trained volunteers who talk with you by phone or text during and after a psychedelic experience, and DanceSafe sells kits for testing what you hold.

Warning Signs

Call 911 for unresponsiveness, a seizure, trouble breathing, swelling of the tongue or throat, chest pain, a heart that races and does not slow, or fainting that does not clear quickly. For a seizure, do not put anything in the mouth, move hard objects away, and note the time.

Low sodium can show up hours after the session. Warning signs are a severe headache, repeated or worsening vomiting, confusion, unusual sleepiness, weakness on one side of the body, and a seizure [23][22]. Tell the emergency team that you used kambo, how much water you drank, and whether ayahuasca was involved, and ask for a blood sodium test. Hospital teams correct sodium carefully under monitoring, and a person with these signs should not be given more water [23][26]. The authors of the brain-death report note that dot-like burns on the skin are a clue that clinicians may miss, so show them [23].

Call 911 for pain in the chest, neck or upper belly after forceful vomiting, vomiting blood, trouble swallowing, fever or shortness of breath, which can mean a tear in the esophagus [1][2].

See a doctor the same day for yellow eyes or skin, or severe itching with dark urine in the days after [24], for muscle pain and weakness with dark urine [2], and for burns that spread red, ooze pus or come with fever [3]. A rash, or joint pain with muscle weakness appearing in the weeks afterward also deserves a visit, since vasculitis and dermatomyositis have been reported [15][2]. Get medical help for confusion or odd beliefs, or fear that does not settle after the physical effects have passed [2].

While you wait for help, stay with the person. Keep an awake, breathing person sitting up or on their side, and place a drowsy or vomiting person on their side. Give nothing more to drink or eat, and gather the stick and any container, plus the practitioner's contact details to show responders. If breathing stops, start CPR as the 911 dispatcher directs [38][39]. These are standard first aid steps. No kambo-specific protocol or antidote exists; naloxone has been tried in reported cases with no evidence that it helps, and the brain-death authors float an untested prehospital pen only as an idea [2][23].

For suicidal thoughts, call or text 988, any hour [40]. Poison Help at 1-800-222-1222 is free and confidential [39]. Fireside Project at 62-FIRESIDE (623-473-7433) is open daily

from 11 a.m. to 11 p.m. Pacific time, which is noon to midnight Mountain time. Its volunteers are trained peers rather than clinicians, and it is not a medical service or a suicide line [38]. Fireside can help with fear or distress that does not settle.

Where to Find More Information and Support

Amounts, timing and combinations are best checked against these sources and with a medical provider, because they are updated more often than this sheet. Erowid, TripSit and PsychonautWiki include user reports and community writing, so read them as experience as well as research.

Erowid: https://erowid.org

DanceSafe: https://dancesafe.org

TripSit: https://tripsit.me

PsychonautWiki: https://psychonautwiki.org

Zendo Project: https://zendoproject.org

Fireside Project: https://firesideproject.org

MAPS: https://maps.org

Poison Help: 1-800-222-1222

For Kambo Questions

Frontiers in Pharmacology review of the kambo frog (open access): https://www.frontiersin.org/articles/10.3389/fphar.2022.997318/full

Cureus systematic review of kambo and sudden death (open access PDF): https://assets.cureus.com/uploads/review_article/pdf/330599/20250119-2593069-ozrr5m.pdf

ICEERS, on kambo as a traditional remedy: https://www.iceers.org/kambo-a-traditional-remedy/

Chacruna Institute, on kambo conservation: https://chacruna.net/kambo_conservation/

Medsafe (New Zealand) safety bulletin: https://medsafe.govt.nz/profs/PUArticles/March2023/Kambo-leave-it-with-frogs.html

Better Health Channel (Victoria, Australia): https://www.betterhealth.vic.gov.au/health/conditionsandtreatments/Kambo

Colorado Division of Natural Medicine: https://nmd.colorado.gov/

Mailing Lists

Erowid Monthly, a free email list: https://www.erowid.org/about/about_announcements.shtml

Erowid Extracts, the members' newsletter: https://erowid.org/membership/

MAPS email newsletter: sign up at https://maps.org

References

1. Nogueira TAC, Kaefer IL, Sartim MA, et al. The Amazonian kambo frog Phyllomedusa bicolor (Amphibia: Phyllomedusidae): current knowledge on biology, phylogeography, toxinology, ethnopharmacology and medical aspects. Frontiers in Pharmacology, 10/6/2022;13:997318. A review. Read from the publisher text; the first pass was cut off partway, so not every section was read. https://www.frontiersin.org/articles/10.3389/fphar.2022.997318/full
2. Sacco MA, Gualtieri S, Spiliopoulou C, Sakelliadis EI, Verrina MC, Aquila I. Kambo administration and its association with sudden death: clinical and forensic perspectives from a systematic review. Cureus, 1/18/2025;17(1):e77646. A qualitative systematic review that searched two databases in two languages; its stated count of nine studies conflicts with 15 table entries. Full PDF read. https://assets.cureus.com/uploads/review_article/pdf/330599/20250119-2593069-ozrr5m.pdf
3. den Brave PS, Bruins E, Bronkhorst MWGA. Phyllomedusa bicolor skin secretion and the kambo ritual. Journal of Venomous Animals and Toxins including Tropical Diseases, 9/2/2014;20:40. A letter to the editor with no new data. https://jvat.biomedcentral.com/track/pdf/10.1186/1678-9199-20-40
4. Williams M. Illegal, occasionally deadly, and not much fun: what is the frog toxin kambo and why do people use it? Swinburne University of Technology news, 5/2023. A university explainer. https://swinburne.edu.au/news/2023/05/iIllegal-occasionally-deadly-and-not-much-fun-what-is-the-frog-toxin-kambo-and-why-do-people-use-it
5. Majic T, Sauter M, Bermpohl F, Schmidt TT. Connected to the spirit of the frog: an Internet-based survey on kambo, the secretion of the Amazonian giant maki frog (Phyllomedusa bicolor): motivations for use, settings and subjective experiences. Journal of Psychopharmacology, 2021;35(4):421-436. A self-selected survey of 386 people; abstract read through a university repository. https://refubium.fu-berlin.de/handle/fub188/41232?show=full
6. da Silva FVA, Monteiro WM, Bernarde PS. Letter on kambo. Revista da Sociedade Brasileira de Medicina Tropical, 2019;52:e20180467. A letter to the editor. https://neip.info/novo/wp-content/uploads/2019/04/da_silva_et_al_Kambo_Revista_Medicina_Tropical_2019.pdf
7. Al Jazeera. Kambo: what is the frog poison spiritual ritual killing detoxers? 5/29/2026. A news article. https://aljazeera.com/news/2026/5/29/kambo-what-is-the-frog-poison-spiritual-ritual-killing
8. Lima EC, Labate BC. Kambo among the Katukina (translation of a chapter from Povos Indigenas no Brasil 2001/2005). Erowid, v2.0, 5/31/2012. Anthropology, a secondary account. https://www.erowid.org/animals/phyllomedusa/phyllomedusa_article2.shtml
9. Carchedi E, Bouso JC. Kambo: a traditional remedy. ICEERS (International Center for Ethnobotanical Education, Research and Service), 5/30/2019, page modified 3/24/2026; and ICEERS kambo basic information page. An organization's articles; the heart-rate figure comes from the basic information page and has no source. https://www.iceers.org/kambo-a-traditional-remedy/ and https://www.iceers.org/?p=5563
10. Ribeiro F. The challenges of kambo conservation. Chacruna Institute, 5/28/2021. A commentary by a researcher. https://chacruna.net/kambo_conservation/
11. Wikipedia. Kambo (drug). A tertiary source, used only where the claim is flagged. https://en.wikipedia.org/wiki/Kambo_(drug)

12. The Ethos. How amphibian medicine became the wellness industry's most dangerous status symbol. 5/2026. An editorial; many claims in it are unsourced. https://the-ethos.co/how-amphibian-medicine-became-the-wellness-industrys-most-dangerous-status-symbol/
13. Schmidt TT, Reiche S, Hage CLC, Bermpohl F, Majić T. Acute and subacute psychoactive effects of Kambô, the secretion of the Amazonian giant maki frog (Phyllomedusa bicolor): retrospective reports. Scientific Reports, 12/2020. A survey of 22 people for the acute part and 13 for the later part. Full text read at the publisher. https://doi.org/10.1038/s41598-020-78527-4
14. Use of Phyllomedusa bicolor secretion during kambo ritual: observational responses, dosage, and risk of adverse events. Toxicology Communications, 12/2022. Records from one practitioner (147 people, 241 sessions). Only the abstract page was read, and it did not list authors. https://doaj.org/article/b97d32fcea3d41619d168deaa07f17ce
15. Medsafe (New Zealand Medicines and Medical Devices Safety Authority). Kambo: leave it with the frogs. Prescriber Update, 3/2023. A government safety bulletin. https://medsafe.govt.nz/profs/PUArticles/March2023/Kambo-leave-it-with-frogs.html
16. Santos-Longhurst A, medically reviewed by Wilson DR. Kambo. Healthline, 1/9/2020. A consumer health site. https://www.healthline.com/health/kambo
17. Daly M. How Amazonian tree frog poison became the latest treatment for addiction. VICE, 5/9/2016. A news article with accounts from people who took part in ceremonies. https://www.vice.com/en/article/kambo-ceremony-alcoholism-purging-uk/
18. Vinopal L. The rise of kambo: a toxic frog fluid wellness detox. MEL Magazine, 3/7/2022. A news feature with accounts from a person who took part in a session and from a practitioner. https://melmagazine.com/en-us/story/what-is-kambo
19. Quigley T. Kambô: another psychedelic amphibian? Psychedelic Science Review, 6/10/2022. A review article; it relays one man's account and cites papers I did not read. https://psychedelicreview.com/kambo-another-psychedelic-amphibian/
20. Weiss S. People are putting frog venom under their skin as a type of cleanse. VICE, 8/22/2018. A news article with accounts from people who used kambo and comments from two researchers. https://www.vice.com/en/article/kambo-frog-venom-healing-cleanse
21. AusDoc (Australian Associated Press). Man died of perforated oesophagus after ingesting kambo frog poison, inquest hears. 2/16/2024. A news article. https://www.ausdoc.com.au/news/nsw-man-died-of-perforated-oesophagus-after-ingesting-kambo-frog-poison-inquest-hears/
22. Severe hyponatremia secondary to exposure to Phyllomedusa bicolor venom (kambo frog): clinical case [Spanish]. Revista Medica de Chile, 2019. A case report; authors taken from the table in the 2025 systematic review (Campodonico et al.), and the text was read through a summary. https://revistamedicadechile.cl/index.php/rmedica/article/download/7259/5089/92319
23. Tran CQ, Houston R, Marino MA, Schiraldi M, Miulli DE. Shamanic kambo frog hyponatremic toxicity leading to brain death: a case report. Cureus, 5/12/2025;17(5):e83963. A case report. Full PDF read. https://assets.cureus.com/uploads/case_report/pdf/362342/20250512-516578-ma3ego.pdf
24. Pogorzelska J, Lapinski TW. Toxic hepatitis caused by the excretions of the Phyllomedusa bicolor frog: a case report. Clinical and Experimental Hepatology, 2017;3(1):33-34. A case report. https://termedia.pl/Toxic-hepatitis-caused-by-the-excretions-of-the-Phyllomedusa-bicolor-frog-a-case-report,80,29137,1,0.html

25. Aquila I, Gratteri S, Sacco MA, et al. The biological effects of kambo: is there a relationship between its administration and sudden death? Journal of Forensic Sciences, 9/8/2017. A case report; abstract read through the Erowid reference page. https://erowid.org/references/refs_view.php?ID=9229
26. Kelly T, Saponaro A, Longenbach J, et al. Severe hyponatremia and syndrome of inappropriate antidiuretic hormone secretion after kambo ritual. Clinical Case Reports, 10/2025;13(10):e71069. A case report; only the abstract page was read. https://researchdiscovery.drexel.edu/esploro/outputs/journalArticle/Severe-Hyponatremia-and-Syndrome-of-Inappropriate/991022121595904721
27. ScienceInsights. What is kambo therapy? Effects, uses, and risks. No author named and few citations, so a weak source. https://scienceinsights.org/what-is-kambo-therapy-effects-uses-and-risks/
28. AusDoc. Frog poison therapy faces ban due to serious cardiovascular risks (news article, undated in my read); and Watchdog bans frog poison detox therapists, 4/9/2019. https://www.ausdoc.com.au/news/frog-poison-therapy-faces-ban-due-serious-cardiovascular-risks
29. Australian Associated Press, via Yahoo News. Charges possible as inquest into kambo death suspended. A news article; the page read had no date. https://au.news.yahoo.com/shaman-retreat-leader-testify-kambo-173000981.html
30. Mind Medicine Law. Kambo legal guide. A law-firm style explainer, last reviewed 4/24/2026 per the page. https://mindmedicinelaw.com/guides/kambo
31. LegalClarity. Is kambo legal in the United States? 4/7/2026, modified 5/20/2026. A legal explainer; a summary of it flagged unsourced claims and probable errors, so I use it only where I say so. https://legalclarity.org/is-kambo-legal-in-the-united-states/
32. 21 CFR 1308.12, Schedule II. Read through Cornell Law School; the Schedule I page was not read. https://www.law.cornell.edu/cfr/text/21/1308.12
33. Colorado Secretary of State. Natural Medicine Health Act (Proposition 122) initiative text as filed, sections 12-170-103 and 12-170-104. Not the current compiled statute. https://www.coloradosos.gov/pubs/elections/Initiatives/titleBoard/filings/2021-2022/58Final.pdf
34. Colorado Division of Natural Medicine, Department of Revenue. Home page, read 10/28/2026. https://nmd.colorado.gov/
35. Better Health Channel (State Government of Victoria, Australia). What is kambo? A government health page. https://www.betterhealth.vic.gov.au/health/conditionsandtreatments/Kambo
36. PsychedelicLaw.ca. Kambo. A Canadian legal explainer. https://psychedeliclaw.ca/kambo
37. The Third Wave. The ultimate guide to kambo. A wellness guide, partly footnoted and partly not; a weak source. https://thethirdwave.co/kambo/
38. Fireside Project. Psychedelic support line, 62-FIRESIDE. https://firesideproject.org/psychedelic-support-line
39. Poison Help, America's Poison Centers. 1-800-222-1222. https://www.poison.org/
40. 988 Suicide and Crisis Lifeline. https://988lifeline.org/