

Extraction of DMT from *Mimosa hostilis*

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Introduction

Mimosa hostilis root bark (MHRB) is widely available in powdered form and contains up to 1% DMT. The powdered root bark is usually boiled and taken after a harmine or harmaline containing plant such as *Banisteriopsis caapi* or *Peganum harmala*. Harmine and harmaline are monoamine oxidase inhibitors which make the DMT active orally and are quite nauseating. Boiled root bark is also very nauseating so these combinations don't usually make for an enjoyable evening. Another option is mocllobemide, a more powerful pharmaceutical MAOI, which can be taken with extracted DMT (ideally as DMT fumarate) to avoid these problems. [Warning: using mocllobemide with MDMA \(Ecstasy\) can be lethal.](#)

Theory

Traditionally an acid-base extraction is used. The root bark is powdered and acidified to around pH 3, usually with HCl. The liquid is filtered off or decanted and the process repeated three times. The collected liquid is then basified to around pH 10 with NaOH and extracted with a non-polar solvent, usually at least three times - shaken, not stirred! The DMT freebase is highly soluble in the non-polar but virtually insoluble in the aqueous phase, so the non-polar is separated off and evaporated to give a crude extract. This extract can be purified for smoking, although smoking or snorting DMT is not recommended as it is very irritating to the mucous membranes, due to its alkalinity. (Heptane can be used for crystallisation and is available in the US as Bestine, a rubber cement thinner). The crude extract is quite adequate for oral use however, or for the preparation of DMT fumarate, so the crystallisation stage is omitted here. (Heptane is less suitable for initial extraction from basified MHRB as it gives only two-thirds the yield of naphtha.) In practice the acidification stage can be omitted and it can be basified to far beyond pH 10, which helps to get a good partition without any emulsion, and saves using a pH meter. DMT is highly soluble in warm naphtha (up to 50 °C - DMT boils at 67-68 °C) but barely soluble below zero, so the naphtha can be recycled and the precipitate dried rapidly. (Recycling solvents is advisable as some DMT will remain in solution below zero.) The crystals below are produced by evaporation. Freezing naphtha yields a powder (in weighing boat below) which is less sticky and a paler yellow than the crystals, but probably of higher purity and considerably quicker and cheaper to produce.

Chemicals and Equipment

Deionised Water (from any car accessory shop)
Sodium Hydroxide (Caustic Soda - for unblocking drains from DIY stores)
Naphtha (petrol lighter fluid)

Safety goggles and rubber gloves
Glass bottle with plastic screw cap
McCartney bottle or similar
Funnel
Pipette
Three-valve pipette filler (optional)
Poultry baster
Rectangular Pyrex dish
Single edge razor blade
Scalpel



MHRB powder

Chemicals

Equipment

Method

SAFETY GOGGLES AND RUBBER GLOVES MUST BE WORN AT ALL TIMES WHEN HANDLING CAUSTIC SODA

1. Add 200 ml deionised water to the screw cap bottle. Then add 5 g of caustic soda while wearing protective goggles and gloves. Allow enough space for shaking - the bottle shown is a pint vinegar bottle (568 ml). The caustic soda will need shaking to dissolve, or the bottle base will become very hot. Once dissolved add 20 g *Mimosa hostilis* root bark powder - a large bore funnel is useful. (Buy powdered root bark as the wooden stuff is likely to destroy your coffee grinder!) Wear a dust mask when handling the powder as it goes everywhere. Shake the bottle and leave the basified root bark overnight. To speed things up the sealed bottle can be placed in a saucepan of warm water up to 60 °C for an hour - plastic bottles are not recommended as they often develop cracks when heated.

2. Add 50 ml naphtha (35 g), recap the bottle and warm in a water bath to 60 °C. Loosen and retighten the cap to release any pressure - if the thread is weak a plastic wine cork should fit well, but ensure that it is held firmly during agitation. Remember that naphtha fumes are flammable. (If necessary wrap PTFE plumbing tape around the cork to get a tight fit.) The bottle must now be shaken vigorously for at least a minute while wearing protective goggles and gloves - the DMT shuffle! Leave the bottle to rest in the water bath at 60 °C after shaking. After a few hours there should be a clear partition between the caustic soda solution and the naphtha floating on top. Allow the bottle to cool, remove the cap or cork slowly and use a pipette to remove all the naphtha - you may need to tilt the bottle and use a long pipette - wear protective goggles and gloves in case of spillage and remember that naphtha is highly flammable. The poultry baster and long pipette fit together with plastic tubing (shown on the baster) so it can be inserted into the screw cap bottle. (The ¼" tubing fits over the end of the baster and inside the open end of the long pipette.) Alternatively a three-valve pipette filler can be fitted to a long pipette. These clever devices have pinch valves for Air, Suction and Empty and can be purchased cheaply on eBay. A McCartney bottle is useful to help separate the phases as this is impossible in a wide vessel. Use a pipette to remove all the naphtha from the McCartney bottle and empty it into a rectangular Pyrex dish. Place the Pyrex dish in a freezer for a few hours.

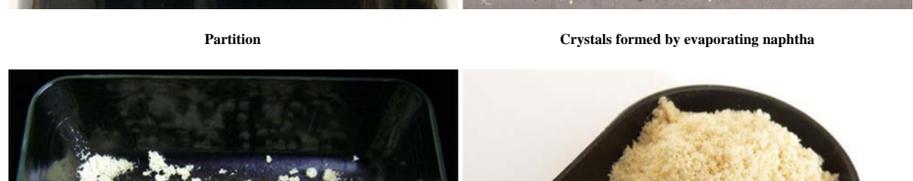
3. Remove the Pyrex dish from the freezer. Tilt it so that the naphtha can be removed from a corner with a pipette and place it in the screw cap bottle, making up the volume with fresh naphtha if necessary. (Pouring the naphtha from the Pyrex dish will remove crystals.) Invert the dish to keep dust out and leave at room temperature until all the remaining naphtha has evaporated. You should be left with deposits of tiny crystals which can be scraped up with a single edge razor blade. The crystals can be scraped off the razor with a scalpel into a Rizla paper - keep the scalpel blade in a wine cork when not in use. Repeat the process until no more precipitate appears - remember to loosen and retighten the bottle cap to release any pressure before shaking. To save elbow grease a laboratory shaker can be used for the agitation - for best results it needs to be run at full throttle and on the floor for safety. Vigorous agitation will create an emulsion which can take a few hours to resolve in a warm water bath, but gives a much greater yield than gentle agitation. If emulsion remains in the naphtha, the phases should separate in a McCartney bottle. If smaller or larger quantities of caustic soda are used the emulsion will not clear as well - the ratio of 5 g caustic soda : 200 ml deionised water : 20 g MHRB powder gives optimum results.

4. To purify the extract, add to naphtha in a sealed jar or McCartney bottle. Place on a hotplate stirrer until warm and thoroughly stirred. Once dissolved, decant off the naphtha from any crud with a pipette and freeze precipitate as before. This will give a fine yellow powder shown in the weighing boat below. Freebase DMT should be stored in an airtight container in a freezer.



Partition

Crystals formed by evaporating naphtha

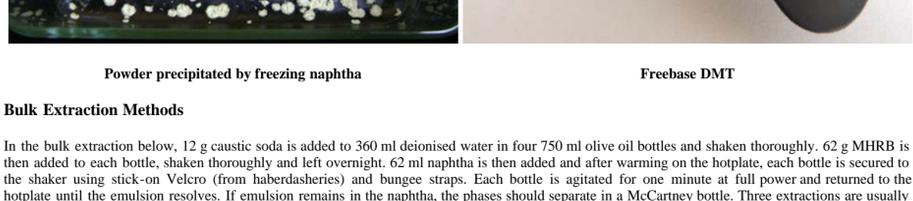


Powder precipitated by freezing naphtha

Freebase DMT

Bulk Extraction Methods

In the bulk extraction below, 12 g caustic soda is added to 360 ml deionised water in four 750 ml olive oil bottles and shaken thoroughly. 62 g MHRB is then added to each bottle, shaken thoroughly and left overnight. 62 ml naphtha is then added and after warming on the hotplate, each bottle is secured to the shaker using stick-on Velcro (from haberdasheries) and bungee straps. Each bottle is agitated for one minute at full power and returned to the hotplate until the emulsion resolves. If emulsion remains in the naphtha, the phases should separate in a McCartney bottle. Three extractions are usually required. Both hotplate and shaker are operated at ground level for safety.



Olive Oil Bottles on Hotplate

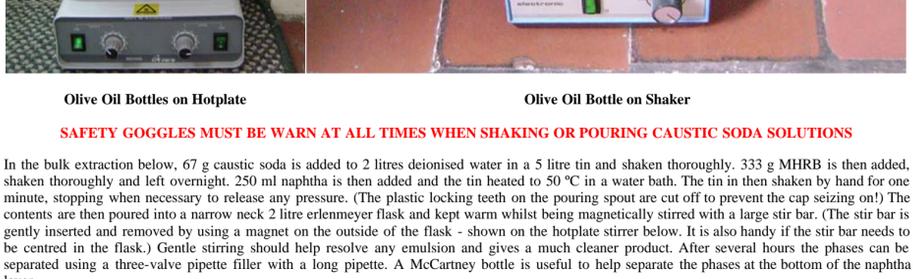
Olive Oil Bottle on Shaker

SAFETY GOGGLES MUST BE WORN AT ALL TIMES WHEN SHAKING OR POURING CAUSTIC SODA SOLUTIONS

In the bulk extraction below, 67 g caustic soda is added to 2 litres deionised water in a 5 litre tin and shaken thoroughly. 333 g MHRB is then added, shaken thoroughly and left overnight. 250 ml naphtha is then added and the tin heated to 50 °C in a water bath. The tin is then shaken by hand for one minute, stopping when necessary to release any pressure. (The plastic locking teeth on the pouring spout are cut off to prevent the cap seizing on!) The contents are then poured into a narrow neck 2 litre erlenmeyer flask and kept warm whilst being magnetically stirred with a large stir bar. (The stir bar is gently inserted and removed by using a magnet on the outside of the flask - shown on the hotplate stirrer below. It is also handy if the stir bar needs to be centred in the flask.) Gentle stirring should help resolve any emulsion and gives a much cleaner product. After several hours the phases can be separated using a three-valve pipette filler with long pipette. A McCartney bottle is useful to help separate the phases at the bottom of the naphtha layer.

The flask below is used using cling film with an elastic band, although polyethylene based DuraSeal would be more durable (paraffin based Parafilm M does not resist solvents). Film is more convenient than a rubber bung as the aperture can be almost covered when drawing off the naphtha, reducing evaporation. Three extractions are usually required. The final extraction may be waxy and can be improved by magnetically stirring on a hotplate in a small sealed jar with naphtha, then separating and freeze precipitating as before. Heptane is more selective and will leave any brown gum in the bottom of the jar, although more care is required as it attacks any rubber seals and pipette bulbs!

High density polyethylene (HDPE) containers are not suitable for bulk extractions as the naphtha dissolves some of the material making the extract sticky, particularly when heated in a water bath (which is necessary to achieve a good yield). A demijohn could be used instead of the tin below, provided that the bung is removed regularly when heating and shaking, to release any pressure. An alternative extraction method is to use an Erlenmeyer flask on a hotplate stirrer alone, but this produces a far lower yield than is obtained by shaking beforehand.



Water Bath

Erlenmeyer Flask on Hotplate Stirrer

Separation of Phases

Preparation of DMT fumarate

DMT fumarate is preferred for oral use after an MAOI as it is water soluble and causes less gastrointestinal disturbance, and can be stored indefinitely without refrigeration.

Add 1 g freebase DMT from the above extraction to 50 ml anhydrous acetone in a jar and place on a hotplate stirrer until warm and thoroughly stirred - use cling film to seal as acetone removes enamel from lids! Keep the first jar warm on the hotplate and add 310 mg fumaric acid to 50 ml anhydrous acetone in a second jar and place on the hotplate stirrer until warm and thoroughly stirred. Once both have dissolved, mix together and place on a hotplate stirrer until warm and thoroughly stirred. Swirl the jar and pour quickly into a rectangular Pyrex dish, replace cover and place in a freezer. (If necessary add more acetone and repeat to remove any residue in the jar.) After a few hours, decant off the acetone with a poultry baster and dry thoroughly on a hotplate. This will give an off-white crystalline powder which can be scraped up with a single edge razor blade. (Mixing all the ingredients together at once is effective but gives the product a yellow lumpy appearance.) The yield should be around 1200 mg, suggesting that the freebase could be 90% pure (1200 x 76%). The beauty of this method is that any excess fumaric acid dissolved in the acetone does not precipitate out when frozen!

Discard the used acetone by pouring onto concrete or tarmac, away from children or animals (it will evaporate very quickly). In this experiment the acetone was dried with anhydrous magnesium sulphate - produced by baking [Epsom Salts](#) in an oven above 200 °C. This produces a white cake which is powdered with a mortar and pestle. It is then magnetically stirred in a sealed bottle of acetone - a pint vinegar bottle is ideal. The acetone is then filtered off into a second pint vinegar bottle. Magnesium sulphate is a convenient drying agent to use as its appearance changes as it absorbs moisture. Drierite desiccant (CaSO₄) impregnated with cobalt chloride indicator is no longer recommended due to toxicity concerns with cobalt.

DMT is C₁₂H₁₆N₂ = 188 g/mol, mp 40-59 °C

Fumaric acid is C₄H₄O₄ = 116 g/mol, mp 287 °C

(H=1, C=12, N=14, O=16)

DMT fumarate = 2 x 188 + 116 = 492 g/mol, mp 152 °C (contains 76% DMT)

Acetone Boiling Pt. 56 °C, Density 0.791, Flash Pt.-18°C, Drying agents K₂CO₃; Molecular sieve 0.3 nm; CaCl₂



Dried DMT fumarate

DMT Fumarate

Using DMT Orally

The usual caveats apply with any psychedelic about being in a safe environment and having someone with you, particularly if you are inexperienced. Particular caution is needed here with the use of MAOIs (such as *Peganum harmala* or *Banisteriopsis caapi*) which may be dangerous when combined with certain foods or medicines containing tyramine or other naturally occurring amines, which can cause a severe rise in blood pressure. Fasting is recommended but do avoid cheese, pickled herring, broad bean pods, yeast extract, chianti wine, and phenylalanine supplements. There have been fatalities resulting from combining MAOI antidepressants with serotonin reuptake inhibitors and with MDMA (Ecstasy) - see [Serotonin syndrome](#). Antidepressant MAOIs remain in the body for 2 weeks after use, except moclobemide which is eliminated within 2 days, while harmine and harmaline are eliminated within hours. SSRIs also remain in the body for some time, in particular fluoxetine (Prozac) which should be stopped at least 5 weeks before using any MAOI.

Dosing a half hour before with caapi is recommended. Simmer 20 g of shredded caapi in tap water for half an hour, strain off and repeat once. The cooled liquid is best drunk slowly. DMT fumarate can be taken dissolved in water, or in an enteric coated capsule to avoid the unpleasant taste and stomach irritation - taking with milk also reduces stomach irritation. Best to start with around 50 mg. Effects begin about twenty minutes later and last 4-5 minutes. My personal preference is for moclobemide (150 mg) after a light meal, followed by an enteric coated capsule of DMT fumarate (150 mg) 50 minutes later. This combination should only cause mild nausea, although "moclo" tends to cause insomnia and is considerably more powerful than harmine or harmaline. Lying down will help to reduce nausea. [Warning: using moclobemide with MDMA \(Ecstasy\) can be lethal](#) (There is also evidence that combining 5-MeO-DMT with MAOIs can be dangerous - see [5-MeO-DMT Health Issues](#)) If used outdoors it's useful to carry a plastic water bottle as a pleasant comedown, a problem. If sleep is difficult the sedating antihistamine cyproheptadine (Periactin), or diphenhydramine (Nytol, Pavidorm) can give a pleasant comedown, without the hangover of benzodiazepines. Zaleplon, Zolpidem and Zopiclone are more powerful sleeping tablets, but can be habit-forming if used regularly. (Diphenhydramine is available from pharmacies and z-drugs can be procured online, with the bonus of endless interesting email for potions to keep up your sex life!)

If preferred, harmine, harmaline and tetrahydroharmine (THH) can be obtained in purified form from [FlowingVisions](#). Harmine and harmaline are supplied as freebase and will dissolve in citric acid solution, while tetrahydroharmine is supplied as HCl salt which is soluble. 100mg of harmaline, 150mg of harmine or 200mg of THH is sufficient to potentiate DMT (allow at least a half hour before dosing). All three cause mild sedation and some gastrointestinal disturbance, although they are certainly preferable to caapi or harmala.

With regard to my experience of health effects, I would say without doubt that harmine, harmaline and tetrahydroharmine have some adverse effect on immunity, as do caapi and harmala. I find moclobemide taken in alone to be neutral, while the combination of moclobemide and DMT fumarate most definitely has immune stimulating properties - certainly assists in recovery from infections, although it can also be tiring (see [www.asthma.20m.com](#)).

In case of adverse effects, have drinking water handy in a plastic cup or bottle. Absolutely no glass. Caffeinated drinks should be avoided as should alcohol, cannabis or any other drugs. Psychotic symptoms can be overwhelming but should improve over time if the person is kept calm, ideally with the minimum of illumination. In this event any future experimentation should be undertaken at a reduced dose.

DMT and the Law

In Britain DMT is classified as a Class A Controlled Drug under the Misuse of Drugs Act. Its possession is punishable by up to 7 years' imprisonment. Producing DMT or supplying it (including possession with intent to supply) carries a maximum term of life imprisonment. Sadly our government has little interest in civil liberties and ignores the overwhelming evidence that psychedelics are less harmful for most users than tobacco or excessive drinking. In the current political climate I think it would be prudent to adopt a strategy to minimize our risk exposure. Here's mine:

- Avoid synthetic psychedelics as the risks to the manufacturers and distributors are enormous
- Never sell DMT to anyone - encourage them to produce their own
- Only produce and store small quantities
- Be aware that communications can be monitored - use PGP encryption (see [PGP Guide](#)) or a [Hushmail](#) account for sensitive emails

Resources

[Erowid DMT Vault](#)

[Erowid Ayahuasca Vault](#)

[Ayahuasca.com](#)

[Ayahuasca Forums](#)

[Mimosa Hostilis UK](#)

[R & D Laboratories](#)

[United Pharmacies \(UK\)](#)

[Moclobemide monograph](#)

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David Barlow

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