HRT Homebrew

A structured DIY transfemme hormone guide by """anon"""

Introduction

This is an update/rewrite of a guide I made back in 2020. I've removed a few areas that I felt weren't fully needed and added some new ones. This has come with a full update of all links and other such tweaks. If you would like to see the old guide, it's still available here.

Homebrewing your own HRT sounds unsafe and expensive at first, but upon looking further into it, one can see that's not truly the case. Costs from therapists, doctors, and marked up pharmaceuticals can really add up! There's also the issue of endocrinologists who rarely deal with transgender patients prescribing less effective regimens purely based on their experience with cis patients.

Yes, we will be getting some raw chemical components produced in China, but the same is true of the US pharmaceutical industry. Why not pay thousands of times less for the same medicine? Sure, we can't perfectly replicate lab conditions, but we can stick to key safety and sterilization methods that mitigates almost all risk.

Please note this guide should be seen as a base! This is one perspective on a process that can be done in many different ways. Feel free to substitute equipment or add/subtract your own steps as it best serves you. I'm also going to try to write this based on a personal-use scale.

Materials

APIs

It all starts with our APIs (active pharmaceutical ingredients). In the world of homebrewing, we often refer to APIs as raws. While it's legal to own what we're interested in here, these are difficult to source domestically and often not even produced domestically. This is why we use producers or wholesalers in China. You can find several on Alibaba or even more on Made-in-China. I used Hubei Vanz for my vendor, as they are an old/well-reviewed source. I've had their raws tested via HPLC before for purity with satisfactory results. According to some, they can be on the pricey end though.

Hubei Vanz Website: http://www.vanzpharm.com/en/index.html

better rate. When you consider these are shelf-stable for several years if stored in a low humidity, air-tight container away from light, getting a life-time supply isn't so unreasonable.

While ordering, you will be speaking to a representative directly via text. This process is simultaneously less and more formal than your average online shopping run. Remember that they are Chinese and speak little English outside of a limited business context. Make sure you clearly and plainly state your desired chemical name, CAS number, and your desired quantity. To find a CAS number, search "[chemical name] CAS number" in about any search engine.

How the process goes from there will vary on who you're chatting with, but most of the time they'll ask for a shipping address. This should go without saying, but be very formal in how the address is posted. Look to see how your address appears in GoogleMaps to double check your formatting. And make sure to always include a phone number along with this that you can be reached at.

Next comes payment. They often expect wire transfers as they're used to dealing with business to business transactions. The easiest and safest way to pay is to have the vendor initiate an order request on Alibaba. This also opens you up to paying directly with a debit card or PayPal and will have your funds often held in escrow, which makes them less likely to scam you. I can also allude to the fact that they sometimes modify details of the order to better bypass your local customs. Which is to say one can find themselves buying a lot of "FAMILY ENTERTAINMENT HD NEW ELECTRONIC SWITCHING NINTENDO CONSOLE DEVICE" during their time as a homebrewer for alleged resale :}

Below are some raws ordered back in 2021 along with the quantity and price. Please note that these are larger quantities, and that you can order much less.

- Bicalutamide, CAS 90357-06-5 (100 grams)
    - $150 total ($1.50 per gram)
- Estradiol, CAS 50-28-2 (30 grams)
    - $90 total ($3.00 per gram)
- Estradiol, CAS 50-28-2 (100 grams)
    - $230 total ($1.80 per gram + 50 shipping to US)
- Progesterone, CAS 57-83-0 (200 grams)
    - $160 total ($1.25 per gram)
- Progesterone, CAS 57-83-0 (500 grams)
    - $320 total ($0.64 per gram)
- Estradiol Cypionate, CAS 313-06-4 (30 grams)
    - $150 total ($5 per gram)

In addition to this list, here's a document someone in the homebrew community made detailing their experience with various vendors.

Excipients

This list is more concerned with excipients, which is to say non-active ingredients. Most you can get off a mixture of online shopping or probably even the right local store. I'll be listing the exact links for what I'm purchasing, but feel free to deviate based on your price range and production scale:

- **Injections**
    - Benzyl Benzoate - Solvent for esterified hormones used in injections.
    - Benzyl Alcohol - Solvent and preservative for injections. Can be used as the lone solvent for non-esterified hormones, though take note that high concentrations, as well as non-esterified hormone injections, will cause a lot of skin irritation and pain.
    - Carrier Oils - The main vehicle that carries our desired Estradiol ester. I'll list three types below
        - MCT Oil - Clear and very low viscosity oil which makes for easier filtering and allows for use of very high gauge needles while injecting. Above-average shelf life.
        - Grapeseed Oil - Pale yellow oil that is more hypoallergenic. Still fairly-low viscosity. Lower shelf life than other alternatives.
        - Castor Oil - Amber oil with a higher viscosity but impressive shelf life if cold-pressed.
- **Transdermal**
    - 99% Isopropyl Alcohol - For dissolving Estradiol.
    - Isopropyl Myristate - A penetration enhancer that keeps skin wet and absorbing longer.
    - Polysorbate 80 - Emulsifier that helps create stability in our mixture.
- **Oral capsules**
    - Powder Filler - Inert substrate that helps evenly distribute our APIs throughout gelatin capsules. Lots of powders can be used, but here are some I've worked with:

work with.

■ Lactose Monohydrate NF (Spray Dried) - Cheaper and cleanest to work with. Doesn't mix as well as the above though and is not great for people with lactose intolerance.

■ White Rice Flour - Cheap and can be found at many grocery stores. Mixes well with micronized powders but can be a mess due to poor flow.

■ Coconut Flour - Cheapest and can be found at most grocery stores. Mix validation is easier, since its color should be different from your API.

○ Gelatin Capsules - Shell that holds both the filler and API. Transparent ones are good for starting out, so you can see how your tamps are doing. These are hypoallergenic by their nature and can be found at vitamin stores. This guide will assume size #1 gelatin capsules.

• **Suppositories**

○ Suppository base - Our main goal with a suppository base is a material that can be melted and worked with and go back to being relatively solid once at room temperature again. Here are a couple that I've used:

■ PolyBlend Rx - Expensive but perfect for those who want more solid and durable suppositories even in relatively high storage temps.

■ Coconut Oil - Cheap and easy to source at about any grocery store. Storage for coconut oil suppositories should be done in a fridge unless you want to keep them in the mold until use.

• **Sublingual Oil**

○ OraPenn SD Sweetened - Proprietary oil-based sublingual vehicle that's supposed to be """more palatable"". It's certainly expensive though. You could likely get similar results with your own MCT oil blend, but I lack the experience to give advice there.

○ Peppermint Burst OS - Mint flavoring used to help with bitter acid taste that our sublingual vehicle brings. Oil-soluble variant.

Tools

This list will cover tools and accessories used in our homebrew. Note that, like the last list, all of this can be gotten from online shopping and local stores:

- **General (These are used in every method)**
  - Scale - Used to measure out components of our mixture. It ideally should read down to 0.01 grams. If you're only working with 250ml at a time, you can likely find the right scale at a seedy gas station marketed as a jewelry scale. For 500ml and up, I recommend either a kitchen scale or looking into something more marketed toward a lab setting. What's important is that the scale's surface area is large enough to hold the beaker you plan to work with and is of sufficient capacity for your batch size.
  - 250ml Borosilicate Glass Beaker - For mixing and heating fluid. Can also be used to have a feel on measurements, though bear in mind we'll be using weight for our metrics. Feel free to instead grab a 500ml or 100ml variant based on your planned batch sizes. A mason jar or similar thermal-resistant container that's easy to fully clean will work just as well, especially when doing transdermal or sublingual Estradiol compounding. For injections, it's more important to use good glassware though.
  - Glass Stirring Rod - Used for stirring mixtures together. I prefer my stirring rods to have spade and button ends to help crush stubborn powder chunks while it dissolves.
  - Hot plate - Used to heat mixtures so as to better incorporate all ingredients. Basic isn't bad here, but again make sure the surface area is large enough to comfortably fit your beaker. The price jump between a standard kitchen hotplate and a lab one is pretty huge if you want a noticeable quality increase, so there's no shame in using something cheap.
- **Injections**
  - 10ml Glass Vials - For storing injection fluid. I prefer amber glass to slightly reduce phototoxicity in long term storage situations. Make sure these vials adhere to the size your stoppers and caps are. The most common is 20mm size for stoppers, caps, and crimpers.
  - Vial Stoppers - Used to create an airtight seal for your vial. I go back and forth on butyl rubber and silicone for the material, but both have worked for me.
  - Vial Aluminum Caps - Used to hold the stopper and vial together. I use flip-top caps, but solid aluminum seals may lead to less complications during sterilization if using dry heat. If you do decide to go with seals, make sure to get a crimper that goes with it.
  - Sterilization Pouches - Used to hold contents during steam sterilization and keep sealed after the fact. Pick whatever size works for you. They can be

they are, these are expensive pieces of equipment. The one I linked is a mid-range flip-top crimper. Again, please make sure you get a crimper that matches your cap type! Plastic flip top caps need flip top crimpers, pure aluminum seals need aluminum seal crimpers.

- 2 Stainless Steel Bowls - These are used for the isopropyl alcohol washing process for the vials/stoppers. Do not use anything that has touched food unless you can guarantee its sterility.

- Cooling Rack and Tray - For holding our vials and stoppers while they dry. Again, do not reuse equipment from your kitchen unless you absolutely have to.

- Large Pyrex Cover Bowl - For covering our drying stoppers/vials from excess dust in an environment. Not really needed if using a still air box or laminar flow hood. Same as the last two on reuse.

- 1ml Syringes - Used to hold and send injection fluid in a precise and sterile manner. Some people opt for using insulin syringes that come with the needle attached to save on money and hassle. There are pros and cons to each.

- 25 Gauge Injecting Needles - Used to pierce one's body while injecting. Note that some may need longer or shorter needle heads to reach muscle. I'm lean enough to where 1 inch is about good at just under a healthy BMI. Also feel free to go for a higher or lower gauge needle while injecting. I think 25 gauge is a good balance of thin enough to cause less pain while still being easy to push fluid through. If you're really afraid of needles, look into 30 gauge ones, but make sure they're long enough to match your needs.

- 22 Gauge Drawing Needles - Used to draw liquid out of storage and into the syringe without dulling your injection needle. You can get away with a thicker needle here for a quicker draw, since it's not going into your body. Having a drawing needle in the first place though is more of a best practice thing, and I've known many people that just use their injecting needle to draw.

- 60ml Syringes - Used to push larger quantities of injection fluid through a syringe filter in a precisely-measured manner. Make sure these are sterile and have luer-lock tips, so as to fit most syringe filters.

- Syringe Filter - Used to filter mixed injection fluid. Make sure they're luer lock compatible with your desired syringes and are sterile/pre-packaged. 0.22um is preferred but will clog up quicker and take a good bit more strength/patience to push fluid through. With this in mind, some may prefer 0.45um for larger batches. In terms of choosing filter membrane material, this website is very helpful. In our case, Nylon works best, as it has compatibility data that clears it for use with benzyl alcohol and benzyl benzoate, our harsher chemical components.

- Sterilization Tools - Several useful items to aid in keeping the process sterile and safe. Remember that you're putting this fluid into your muscle, so extra caution should be taken!

    - Gloves - Used for holding objects without getting oils, sweat, etc. on them. Most disposable nitrile gloves will do fine and can be found at home

■ Alcohol Wipes - Used for preparing surfaces to come into contact with sterile objects. These can be found at almost any drug store. Could be replaced with most sanitizing wipes.

■ Still Air Box - An extra measure of protection that can be taken if you're working in a particularly dusty or carpeted environment. I recommend you make one yourself using the included guide, but you can always find one for sale.

■ Autoclave/Instapot - Used for wet heat sterilization. Autoclaves are expensive. If you are to spring for one though, do get one with a dry cycle. As for alternatives, an instapot max (or any 15psi pressure cooker) gives sufficient pressure and heat. Do note that most pressure cookers don't reach a sustained 15 PSI, so it's good to double check before buying one.

- **Transdermal**
  - 1oz Glass Spray Vials - Used For storing and administering sprays of our mixture. The spray nozzle allows for a more even and quick application.
- **Sublingual Oil**
  - 1oz Glass Dropper Vials - Used for storing and administering drops of oil. The dropper has gradations that allow for more precision when administering.
- **Gelatin Capsules**
  - Capsule Filler - Used for holding and securing gelatin capsule ends together while filling. Note that these can be regulated depending on your state or nation's laws. All this usually means is that vendors have you check a box that gives them the right to report that you bought the capsule filling machine to the appropriate authorities. The vendor I linked doesn't hassle you too hard compared to most.
- **Suppositories**
  - 10ml Borosilicate Glass Pipette - Used for dispensing base into molds. You may want to get extra of these on hand if you plan on doing large batches, since they sometimes clog while in use.
  - Silicone Mold Sheet - For molding base into shape. I like each mold to have around 1 to 2ml of volume so that there's enough base to properly hold our API. I linked a shape that's somewhat pointed as well for ease of intake.

Methods

HRT Homebrew 2023

Injection homebrewing has the most steps and carries the most risk. This is something you have to try at your own risk, ideally in a sanitary environment with a good bit of workspace. You may want to first try out homebrew with an easier method, such as transdermal, if space, sanitation, and startup cost are of concern.

The below numbers will result in 5 vials that contain 10ml of 40mg/ml concentration estradiol Enanthate. Each vial would last you roughly a year depending on your preferred dosage and syringe/needle dead space. That means this is a ~5 year's supply of Estradiol Enanthate for monotherapy from just a few hours of work.

1. Preparation

    a. Don your nitrile gloves and wipe down and clear every inch of your work area with a disinfectant wipe of some kind. I generally use non-woven, pre-saturated isopropyl alcohol Kimtech wipes, but even Clorox will do. If you plan to use a still air box, now is the time to get it set up on your countertop space.

        i. Note that there are time skips where you may want to take a break. Make sure you get new gloves out every time you return to working and to alcohol swab them before beginning work again if possible.

    b. Prepare a deep stainless steel bowl of 99.9% isopropyl alcohol. This includes rinsing it with a modest amount of the IPA (isopropyl alcohol) and then filling them once all traces of particulate are cleared away. Make sure they're filled enough to fully submerge your vials. Beside it, place an empty catching bowl of similar size. The catching bowl doesn't need a prep rinse.

    c. Set up an area for your drying rack, tray, and cover bowl. You may like to put some kind of absorbent wipe under the drying rack but above the tray. I would recommend larger 2-ply Kimtech wipes for this, but this can be pricey. You're generally fine without any catching wipes though, especially with small batches.

    d. Take 5 vials from their packaging and submerge them right side up into the IPA bath. Make sure they get filled entirely. Take the filled vials and dunk all IPA into your empty catching bowl. After a quick shake, place them right side down onto your cooling rack. Then do the same to 5 vial stoppers and place your cover bowl over them. You don't need to do this to your caps, but it won't hurt it if you'd like to.

    e. Once contents are dry (this can take a while), quickly uncover them and place into sterilization pouches. Make sure to seal them from the middle first and then crease outward to the side. The better the seal, the less moisture will get into your pouch during the steam sterilization process.

    f. Place pouches into your autoclave or instapot with. Always make sure there's about an inch or so of water, though this can depend on the device. Make sure the device is set for 15 psi and goes for at least 15 minutes at this pressure. Even plastic flip top caps shouldn't melt, since temperatures shouldn't exceed 250 degrees fahrenheit. Once done, take the pouches out and place onto your cooling

rinse and let dry on your cooling rack setup while covered. If desired, you can depyrogenate your glassware in the oven while covered after letting it dry a bit. 30 minutes at around 475 fahrenheit should do. I personally wouldn't do this if you have a dirty oven though and just take the thorough IPA rinse and dry. We'll be filtering the oil right into the vials anyway and doing terminal sterilization.

2. Measure

a. Add Estradiol Enanthate. Our recipe makes 50ml at 40mg/ml. This means to get our API measurement we do 50*40 to get 2000mg (2g). After taring, weigh out these 2 grams of Enanthate in your mixing beaker.

b. Add benzyl benzoate. 25% of our carrier substrate is BB (benzyl benzoate). Since we're making 50ml total for the mixture, that's 50*0.25 to get 12.5ml. To measure out 12.5ml of BB by weight, we need its density. Since it has a density of 1.12 g/cm³, this means you'd do 1.12*12.5 to get 14g. Pour said 14g of BB in carefully.

c. Add benzyl alcohol. 2% of our mixture is benzyl alcohol. That's 50*0.02 to get 1ml. I find this is easiest to do with a sterile injecting syringe and needle, since benzyl alcohol normally comes in a small, sealed vial. Draw a full 1ml syringe and squeeze it into your mixture.

d. Add MCT oil. 73% of our mixture is MCT oil. That's 50*0.72 to get 36.5ml of MCT oil. With a density of 0.95g/cm³ (you may want to check your source's tech sheet if possible), we do 0.95*36.5 to get 34.675g. I would round up to 34.68g while weighing, but it's not the end of the world if you're slightly off.

3. 3. Mix

a. Move your beaker off of the scale and onto your hotplate and turn on the heat mid-way. We only need enough heat to fully dissolve the API, and settings will vary based on hotplate and batch size. Use your best discretion here.

b. While the mixture heats up, stir regularly. Do not remove the stirring rod during this process.

c. You can safely stop stirring once there are no traces of API. The oil often has to get hot enough to have a "heat wave" look about it but it varies based on your preferred concentration. When the oil gets to this state, you may remove it from the heat. For good measure, you can keep the mixture heated like this for about 15 minutes, but filtering and terminal sterilization should be enough to where it's optional.

d. Make sure to remove the oil from the heat for about 15 - 30 minutes to cool. It's best to keep it covered. A watch glass that matches your beaker is best for this, but you could always use our pyrex bowl depending on sizes.

4. Filter

a. Fill a fresh 60ml syringe with 50ml full of the mixture once it cools down for a good 5 minutes or so. I make sure to affix a thicker needle to it to make the

middle part while screwing it on.

c. Open your sealed vials and stoppers, but make sure to only grab one out at a time. Make sure there is no visible moisture on your vials/stoppers before undoing the seal.

d. Make sure the luer slip filter output is over current vial and push down on syringe until 10ml of fluid has gone through. As soon as a vial gets filled, immediately put the stopper on it to prevent particles from getting in.

i. Just a note, this could take upwards of an hour, as these things put up a lot of resistance. Syringe filters are slow, and if you have similar noodle arms, you may need to get a lab partner to switch out with every so often.

ii. Another note! I find it best to switch syringe filters out ever 25ml in most cases. Check your filter's throughput value to decide when to switch.

e. Repeat until every vial is filled. Note that you will lose a small bit of fluid to the syringe filter(s), so the last vial may end up being closer to 9 or 8ml.

5. Crimp/Sterilize

a. Rest a cap on each placed stopper. Make sure that the cap is sitting evenly before moving on to crimping.

b. Slowly move the crimper over the vial, making sure to touch the cap as little as possible. Squeeze the crimper handles tightly together.

i. I would recommend testing your crimper out on empty bottles and tightening the head if needed. This can be done by squeezing the crimper together, and twisting the prongs on the head when they're together. I would do at least 5 test crimps before trying it on the real deal.

c. Take each crimped vial and place into a sterilization pouch.

d. Like we did with the vial components before, run an autoclave/instapot canning cycle that goes to at least 15psi for 15+ minutes.

6. Intake

This is for intramuscular (IM) injections! If you prefer subcutaneous, it's best to get insulin syringe/needle sets, as those are often cheaper and and more generally available than buying separate needle tips and syringes.

e. Screw a 22 gauge needle to your syringe. This is called your drawing needle. Make sure both are right out of sterile wrapping.

f. Pull back plunger to desired dose and leave it that way.

g. Pierce the vial's stopper and flip it upside down, making sure the needle is submerged.

h. Quickly push air out of the syringe. This is known as aspirating.

j. With the vial still upside down, push the plunger until it's right at your desired dose. Flick away any air bubbles while you do this. This is an extra step to make sure that you're injecting the precise amount, and that no air is in your syringe.

k. Replace drawing needle with a 25 gauge needle. This will be our injecting needle. Note that higher is better, but 25g is about the highest gauge needle I see that's a full inch long for sale. Though if you're doing subcutaneous injections, you wouldn't have to worry about that and could go for needles under an inch without any worries.

l. Sanitize injection area with an alcohol swab. This can be the thigh, buttocks, arm, etc. I recommend the vastus lateralis muscle (outer side of the middle thigh).

m. Look for any veins. White light is good for this. Once you've found an ideal spot, you can pinch around it if you have trouble twitching from the pain. I also recommend resting your thigh on a hard surface, such as a wooden chair.

n. Quickly press the needle in, making sure it connects with your skin at a 90 degree angle. It's easier when you have someone else do this and the next step for you. Slowly push down on the plunger until all fluid is injected and slowly remove the needle.

o. Once the needle is pulled out, sanitize the area with an alcohol wipe swab. There is often a small amount of bleeding from the injection site. This happens occasionally, so don't fret too hard unless it's a continuous and hard flow. Internal bruising may also occur from time to time.

Transdermal

I'd say this is the cheapest, easiest, and quickest method out of the bunch. Sterilization isn't as much of an issue, as the alcohol in the solution largely takes care of that for you. Downsides are the time it takes to apply and inconsistency of dosing. The below recipe should make 200ml of 20mg/ml transdermal estradiol solution. Its shelf life is nearly indefinite, so feel free to make a bigger batch.

You may be familiar with Estradiol patches that you leave on your skin for long periods. While this works on a similar principle, what we're making here is more of an Estradiol spray that you shoot onto your skin and quickly let dry. Dosing will be different than patches for this reason even if it is the same base type of intake. One spray pump to a highly absorbent area of the skin (armpit or scrotum) is often good enough. This assumes a ~0.1ml pump. This dose of 20mg/ml solution done twice daily at even intervals combined with an anti-androgen should be sufficient for many people.

1. Prepare

b. Rinse stirring rod and 250ml beaker with 99.9% IPA (Isopropyl Alcohol) to purge particles.

c. Preferably let air dry, but since IPA is in our mixture, it won't hurt if some is around.

2. Measure

a. Weigh out 4 grams of Estradiol (note non-esterified beta-17 Estradiol) directly into your beaker. We get this number from 200ml being our target total with 20mg/ml being our concentration. 200*20 = 4,000mg = 4g

b. Weigh out 62.8g of 99.9% IPA. 40% of our mixture is IPA. To get our volume, we do 200*0.4 = 80ml. To get the weight of this, we take the density of IPA (0.785 g/cm^3) and do 80*0.785 = 62.8g.

c. Weigh out 68g of IPM (Isopropyl Myristate). 40% of our mixture is also IPM, which means our volume is once again 80ml. To get the weight of this, we take the density of IPA (0.785 g/cm^3) and do 80*0.785 = 68g.

d. Weigh out 22.04g of Polysorbate 80. 10% of our mixture is Polysorbate 80, so 200*0.1 = 20ml for volume. To get the weight of this, we take the density of Polysorbate 80 (1.102 g/cm^3) and do 20*1.102 = 22.04g.

3. Mix

a. Place your filled beaker on a low heat hotplate/burner of some sort. Turn up heat as needed but start low.

b. Take your stirring rod and evenly mix until all API has been dissolved. Stirring for a few minutes after this can't hurt though.

4. Bottle

a. Remove the beaker from heat and let it sit until the glass is cool enough to leave your hand on it.

b. While cooling, it's a good time to get your 30ml boston round bottles out and ready with the spray tops nearby. I find it good practice to have paper towels or something similar under the bottles for this next step.

c. If your beaker is small enough, this is quicker to do by directly pouring the mixture into each bottle, perhaps making use of a small metal funnel to assist with precision. If working with a larger batch then say 250ml, you may find it preferable to use a large glass pipette to transfer the mixture in a controlled manner.

d. After bottling, screw on the spray tops, and they should be good to go. Make

a. Apply a single spray ~0.1ml (2mg) dose to scrotum or armpit. Let dry for around a minute before covering the area. Apply this same dosage every 12 hours. Note that the armpit isn't as effective and may require two sprays depending on the individual.

Sublingual Oil

Sublingual oil is made for taking under your tongue for easy yet effective absorption. This achieves higher E2 bioavailability and reduces strain on your liver. Many take the popular blue pharma Estradiol tablet under the tongue as well, but sublingual oil is arguably more efficient and, more importantly, easy to homebrew.

We'll be making enough for 3 30ml boston round dropper bottles. That is to say, we're making 90ml total. At our concentration 40mg/ml, that's 3,600mg total. Each drop is around 0.025ml which factors to around 1 mg of Estradiol. I got this number from seeing how many drops it took to total up to 1ml in a small graduated cylinder. In my case it was around 40 drops, which gets us the 0.025ml per drop figure. Our concentration of Estradiol will be 40mg/ml, so 0.025*40 is 1. If you have trouble with getting your API to fully dissolve and stay fully dissolved, you can try 20mg/ml for more stability.

1. Prepare

    a. Don gloves and sanitize your workspace.

    b. Rinse off a glass stirring rod and 250ml beaker with 99.9% IPA (Isopropyl Alcohol). If using funnels and/or a glass pipette to assist with bottling, give those a thorough rinse as well.

    c. Let rinsed materials dry fully! IPA in our final product here is not acceptable, since this will be going in our mouth.

2. Measure

    a. Weigh out 3.6 grams of Estradiol directly into your beaker. 90ml total times 40mg/ml concentration is 3,600mg = 3.6g.

    b. Weigh out 79.38g of OraPenn SD Sweetened. 90% of our mixture is OraPenn, so we do 90*0.9 to get 81ml. Since its density is 0.98 g/cm³, we do 81*0.98 to get 79.38g.

    c. Weigh out 8.46g of Peppermint Burst OS. 10% of our mixture is Peppermint Burst, so we do 90*0.1 to get 9ml. We then use its density of 0.94 g/cm³ to do 9*0.94 to get 8.46g.

3. Mix

heat with our 40mg/ml concentration.

4. Bottle

    a. Remove from heat and let cool until the mixture reaches a comfortable working temperature. For me, it's usually when I can leave my hand on the beaker.

    b. Get out your bottle and dropper tops while cooling takes place.

    c. Pour the contents of your beaker carefully into each bottle as evenly as possible. Again, a glass pipette and/or funnel may help.

    d. Screw on dropper tops soon after bottling. Keep in mind these are plastic, so make sure your oil is not too hot so as to melt them.

5. Intake

    a. Always shake your bottle well before using! Some of the API will always settle toward the bottom, which makes one half more opaque. After shaking, it should be even.

    b. Fill your removable dropper bottle top about half-way.

    c. Place your desired dose under your tongue. Remember that each drop is ~1mg of Estradiol. I like using my tongue to cover the drops as closely as possible.

    d. I would stay away from any food or drink until contents are fully absorbed.

Suppositories

This section covers how to make your own Progesterone suppositories. In my previous guide, this section instead used gelatin capsules filled with coconut oil. Having used both methods, I will say that both work, but this method I prefer. I'm only going to go over 100mg suppositories, but the same principles can be used for a 200mg, though you'll have to work with higher individual mold volumes (2 - 3 ml).

In regards to the batch sizing, it's all based on this specific silicone sheet of 150 ~1.2ml heart-shaped molds. These and similar mold sheets can be found all over Amazon and similar websites sold as homemade chocolate or dog treat molds. This batch will be enough to fill one entire sheet, though keep in mind that transfer waste may cut you down a few molds. That is to say we'll be attempting to use 180ml total to fill 150 suppository molds.

1. Preparation

    a. Don gloves and wipe down your workspace. This can be a messier process than

b. Thoroughly rinse out a 10ml glass pipette, stirring rod, 500ml beaker, and silicone mold sheet with 99.9% isopropyl alcohol. If you need an instrument to scoop your suppository base, make sure this is also rinsed. Let dry fully.

c. Place your beaker onto your hotplate/burner and turn to medium heat. It's best to start this while you measure as the melting process can take a while depending on your base. This method will assume PolyBlend Rx, which takes a good bit of heat/time.

2. Measure

a. I haven't been able to find the official density of PolyBlend Rx, even on its tech sheet, so we'll be using volumetric measurements here. Our goal is to make our powder and fully-melted base together sit right at the 200ml line.

b. We start by scooping the PolyBlend pellets into the warming beaker until it piles up roughly to the 300ml mark. Don't worry, this will melt down in volume!

c. After our first base addition is finished melting, add more base pellets until the liquid surface sits right under 200ml.

d. Add 15g of Progesterone in small increments while stirring. We get this, since we have 150 molds to fill with 100mg of Progesterone. 150*100 = 15,000mg = 15g.

3. Mix

a. Keep stirring at a steady pace until all traces of powder have been dissolved. This can take a while but can be sped up by upping your heat.

b. Take your beaker off the heat and let cool until it's at a more workable temperature. That is to say a temperature where the mixture is still liquid and easy to transfer but cool enough to have the viscosity needed to keep from dripping while in the pipette. This step is very much one of trial and error and preference.

4. Mold

a. Return your beaker to your hotplate and place on low heat. You may have to adjust this up or down if the base starts to get too solidified or liquid. It can be a pain :{

b. Using your 10ml glass pipette, carefully fill each mold with base as evenly as possible. Perfection will be difficult here, but a small over or underdosed suppository won't be the end of the world.

c. After filling each mold let the sheet sit at room temp long enough for it to solidify enough to carry it to a refrigerator. Let it sit in the fridge for around 20 minutes.

5. Intake

    a. Wet suppository with warm water.

    b. Insert into your rectum at least 2 inches in to reach your mucus lining. This is a loose metric though. If it's not popping back out easily, you've probably gone far enough in.

    c. Note that this can be easier to fit into a schedule if you do it at night, as it can take a while for it to dissolve, and it may be odd to feel it while moving about during the day.

Gelatin Capsules

Aside from spooning raw powder into your mouth, gelatin capsules are the cheapest way to compound higher-dosed pharmaceuticals. That isn't to say that it's the least work though. The process is tedious and messy, so come into it prepared with time and a large work area!

I will use bicalutamide in this recipe, as it doesn't suffer from oral intake and is of a higher dose. This will make ~100 50mg pills. I will assume size 1 gelatin capsules. This is a roughly 3 month supply.

1. Prepare

    a. Don gloves and wipe down your entire workspace. I recommend a large tabletop for this. Somewhere where you can sit down is important for what can be a lengthy process.

    b. I normally would tell you to give all components a 99.9% IPA (isopropyl alcohol) rinse. While this is certainly best practice if possible, do note that most affordable gelatin capsule filling plates are made of plastic that can be slowly degraded by repeated exposure to IPA. When you consider this and the fact that the end product will be undergoing oral intake, a good wash with soap and water beforehand is plenty good for your mixing container, powder spoon, and capsule filler components.

d. I like to have clean trays for catching powder under all of the capsule filler components. This allows us to catch and reuse powder that would normally go to waste during the messy process of filling our capsules.

2. Measure

a. Place 5g of Bicalutamide into a container that you can cover tightly. A larger mason jar is perfect for this. We get 5g from our batch size times API dose, so 100*50 = 5,000mg = 5g. Consider this our fixed variable.

b. Place 22.5 grams of coconut flour in the same container. This number is not a fixed variable. Based on your preferred numbers for tamps, dose, excipient type, and capsule size, this can vary a good bit, and only through trial and error can you find the right excipient to API ratio for you and your process. I detail how I got this number in a note below after the intake section.

3. Mix

a. There are several ways to mix together our powders, but a mason jar and a good few minutes of shaking should work well enough. I've heard of people using magic bullets, whisks, and even expensive lab equipment if you want alternatives.

4. Fill

a. Prepare your capsule filling machine as per instructions it comes with, though I'll give a quick rundown on how most work. This involves placing a base plate on a spring-loaded stand, making sure the bottom of each gel cap goes into said base plate, and the tops go into a separate top plate. Note the bottoms are the larger part of the capsule while the tops are the smaller parts.

b. Pour mixed powder onto your base plate and spread out with a card/spatula. Pack down powder with a tamping tool, and pour more powder in to spread out. Usually you need to use the tamping tool 2 or 3 times to get a good tight fill. This changes based on your excipient and API consistency.

c. Join the top plate together with the base plate carefully. Do not apply pressure until it's precisely aligned. When all is flush, use all the weight you can muster to press the top plate into the base plate. Apply pressure from the middle outward. It may require several presses.

d. Remove your top plate and pop out your capsules. I do this over a tray or large bowl of some sort

e. Repeat the Fill steps until all your powder is used up. Note that excess powder from each fill can be reused.

5. Intake

don't even need water.

Keep in mind that the ratios I present here are not an exact science. These numbers were based on the powder density for coconut flour. But if you were a denser excipient, you would need to drastically alter your filler ratio. The same goes if you use a different size gelatin capsule. This table is a helpful reference on average capacity for each gelatin capsule size. Note that coconut flour has a low average tapped powder density, which places more toward the light end on that table. That gives us a ballpark estimate in which to start formulating our filler ratio.

The best way to approach this is to fill a few test capsules with your intended ratio of powders. Compare the weight of these capsules with your empty capsules, and you'll get your powder fill dosage. For example, if I'm working with size 1 gelatin capsules that weighs 100mg empty, a filled capsule that weighs 375mg would mean 275mg of powder is inside said capsule. Not every capsule will be filled equally, but this was the average I got for the pills using the methods and materials described above. This number is our baseline for the math used to arrive at our ratios. If we want to make 100 50mg capsules that can hold 275mg of powder each, we multiply 50mg of our API by 100, and end up with 5,000mg (5g). After that, all we have to do is multiply 225mg, the leftover mass to be filled, by 100 to get our 22,500mg (22.5g) number.

Helpful Links

- Injection Dosage Simulator
  - https://transfemscience.org/misc/injectable-e2-simulator/
- HRT Regimen Guide
  - https://diyhrt.wiki/transfem
- /HRTGen/ Picture Guide
  - https://hrt.coffee/assets/img/hrtgen-v2.5-detailed.png
- HRT Source Index
  - https://hrt.coffee/