Formulation Record

Name: Tri-estrogen Capsules
Strength: 1.25 mg/cap
Dosage Form: Capsule
Route of Administration: Oral

Date of Last Review or Revision: 01/28/07
Person Completing Last Review or Revision: Robert Shrewsbury

Formula:

Ingredient	Quantity	Physical Description	Solubility	Therapeutic Activity
Estriol	80%	white to cream powder	insoluble in water, soluble in alcohol and vegetable oils	endogenous estrogen
Estrone	10%	white to cream powder	insoluble in water, 4 mg/ml in alcohol	endogenous estrogen
Estradiol	10%	white to cream powder	insoluble in water, 35.7 mg/ml in alcohol	endogenous estrogen
Lactose, hydrous	qs	white powder	1 g/5 ml water, slightly soluble in alcohol	bulk diluent

Additional Information:
- A #2 capsule will hold between 300 – 360 mg of hydrous lactose.
- Colored capsules may be used for aesthetic appeal or to differentiate dosages.

Example Calculations:
- The low dose of tri-estrogen requires that a triturate be made. Make a triturate using hydrous lactose such that 150 mg contains 1.25 mg of tri-estrogen (i.e., 148.75 mg of hydrous lactose and 1.25 mg of tri-estrogen). An additional 200 mg of hydrous lactose will be used to bulk fill the #2 capsule to 350 mg.
- Calculate the formula for 2 extra capsules to account for losses during compounding.

Equipment Required:
- prescription balance
- mortar and pestle

Method of Preparation:
1. Accurately weigh the stock triturate and the hydrous lactose used for bulk filling.
2. Triturate the powders using **geometric dilution**.
3. Hand punch the required number of capsules.
4. Verify the weight variation.
5. Verify the content analysis.

Description of Finished Product:
White powder mixture.

Quality Control Procedures:

Weight Variation:
Determine the following information for 4 randomly selected capsules. Use an empty #2 capsule on the right pan as a tare. Each capsule should be within 5% of the average. Note: this information can be collected as the capsules are made.

Number	Weight of Contents in Capsule
1	
2	
3	
4	

Average "Weight of Contents in Capsule"	

Percent Difference in Average and Weight of #1	
Percent Difference in Average and Weight of #2	
Percent Difference in Average and Weight of #3	
Percent Difference in Average and Weight of #4	

Content Uniformity:
Record the following information for 4 randomly selected capsules. Dissolve the contents of a capsule in 10 ml distilled water. Read the absorbance at 274 nm with a spectrophotometer using methacrylate cuvettes. Use the standard curve and blank solution provided in the lab to determine the weight of drug in the capsule contents.

Number	Absorbance @ 274 nm	Concentration of Estrogens (mg/10 ml)	Weight of Estrogens in Capsule Contents (mg)
1			
2			
3			
4			

Packaging Container:
Package in plastic prescription vials

Storage Requirements:
Store at room temperature

Beyond-Use Date Assignment:
USP Guidelines:

Nonaqueous liquids and solid formulations:
If the source of the ingredient(s) is a manufactured drug product, the beyond-use date is not later than 25% of the time remaining until the original product's expiration date, or 6 months, whichever is earlier. If the source of the ingredient(s) is a USP or NF substance, the beyond-use date is not later than 6 months. Assign 6 months.

Label Information:
Possible drug-food interaction with grapefruit juice.

Source of Recipe:
Pharmaceutics Laboratory web site: http://pharmlabs.unc.edu

Literature Information:
Allen's Compounded Formulations: The U.S. Pharmacist Collection, 1995-1998, p. 76-77, © 1999.