

STABILITY ASSESSMENT OF COMPOUNDED PREPARATIONS



Bracketed Bi-est in VersaPro™ Cream Base

Estradiol 0.025-0.5%, Estriol 0.1-2%

Menopause is characterized by various symptoms, such as hot flashes, vaginal dryness, insomnia, irritability, as a result of a decline in endogenous hormone production, namely Estrogen and Progesterone. Women generally begin hormone restoration therapy at the onset perimenopause or menopause and may continue treatment for several years thereafter. Recent studies have provided clear evidences that a compounded hormone regimen is effective in reducing menopausal symptoms and improving overall quality of life.^{1,2} Formulations containing combinations of bioidentical hormones, such as estrogens, progesterone and testosterone can be applied topically at a variety of strengths, hereby providing personalized treatment for patients in need.³ Determining the stability of a compounded medication is considered best practice and is highly sought after analytical data.

In this study, we evaluated the physical and chemical stability overtime of a Bi-est formulation at low and high concentrations:

- Estradiol (0.025% and 0.5%) and Estriol (0.1% and 2%) compounded in VersaPro™ Cream Base (MEDISCA).

The formulations underwent forced degradation studies to develop validated, stability-indicating methods. The stability of these bracketed formulations was evaluated in tightly closed, light-resistant containers at room temperature (25°C). Physicochemical characteristics were analyzed at predetermined time points (0, 30, 60, 90, 120, 150 and 180 days) and each formula tested had the organoleptic properties inspected, the pH and viscosity measured, and all hormone concentrations assayed using a validated stability-indicating HPLC method. Our results showed

that the concentration of the bracketed APIs within the hormone combinations remained within the *United States Pharmacopeia* specification (90 to 110%) for at least 180 days at the tested conditions. No changes in organoleptic properties were observed and there was no significant change in pH or viscosity (Table 1). In conclusion, the bracketed concentrations of the above studied hormone mixture in VersaPro™ Cream Base was found to be pphysically and chemically stable for up to 180 days when stored at room temperature in tightly-closed light resistant containers. Therefore, an extended beyond-use date of 180 days can be assigned for this bracketed range of combined hormone concentrations if the same vehicle and conditions are respected.

Table 1. Stability of Estradiol, Estriol Combinations in VersaPro™ Cream Base at 25 °C for 180 days.

Time Points	Estradiol (E2), Estriol (E3) Combination LOW Concentrations		Estradiol (E2), Estriol (E3) Combination HIGH Concentrations	
	E2	E3	E2	E3
	0.025%	0.1%	0.5%	2%
Hormone Concentrations (%)^a				
Initial	100 ± 0.18	100 ± 0.00	100 ± 1.19	100 ± 0.00
30 days	103.13 ± 0.26	101.99 ± 0.05	100.81 ± 0.02	103.68 ± 0.02
60 days	101.01 ± 0.84	101.25 ± 0.00	98.17 ± 0.17	101.48 ± 0.02
90 days	100.90 ± 0.09	100.38 ± 0.04	98.71 ± 0.36	101.40 ± 0.05
120 days	100.49 ± 0.35	100.87 ± 0.12	96.17 ± 0.10	99.15 ± 0.16
150 days	99.02 ± 0.27	98.97 ± 0.03	96.64 ± 0.91	99.45 ± 0.04
180 days	101.86 ± 0.28	100.84 ± 0.02	95.19 ± 0.04	97.41 ± 0.05
pH				
Initial	5.07		5.10	
30 days	5.05		5.05	
60 days	4.97		4.96	
90 days	5.04		5.02	
120 days	4.98		5.04	
150 days	5.18		4.99	
180 days	5.00		4.94	
Viscosity (cPs)				
Initial	841,866		834,218	
30 days	874,245		818,575	
60 days	867,429		831,073	
90 days	858,908		809,202	
120 days	862,316		837,321	
150 days	865,724		806,078	
180 days	857,203		802,954	

^a Reported as Mean ± SD of duplicate determinations.

MEDISCA Network Formula:

F 008 993 Estradiol 0.025%-0.5%, Estriol 0.1%-2% Topical Cream (Emulsion, 200g). www.medisca.com/studies/buds?tab=bud-databank

References:

- 1 Martins V, Legroux N, Lascar M, Gluck M. Compounded bioidentical HRT improves quality of life and reduces menopausal symptoms. *J Presc Pract.* 2020. 2(7):384-390.
- 2 Deleruyelle, L.J. Menopausal Symptom Relief and Side Effects. *Int J Pharm Comp.* 2017. 21(1):6-16.
- 3 Harvey B, Spangler M. Compounded Bioidentical Hormone Therapy. *US Pharm.* 2020. 45(9):27-29.

FOR MORE INFORMATION

USA 1-800-932-1039 | CAN 1-800-665-6334 | WWW.MEDISCA.COM



DISCLAIMER: The information presented is not geared toward any indication whatsoever and is solely at the discretion and judgment of the duly licensed medical practitioner. It is the responsibility of the licensed pharmacist or other appropriately licensed professional to determine if the products referenced herein are appropriate for the specific use. MEDISCA cannot be responsible and shall not be responsible for customer's use of the information contained in this suggested product information sheet.