



# VERSAPRO™ CREAM BASE

## SCIENTIFICALLY PROVEN MOISTURIZER

*In Vitro* Skin Studies and  
BUD Results



With its great carrying capacity and excellent emollient characteristics, MEDISCA's VersaPro™ Cream Base is ideal for both pharmaceutical and cosmetic purposes. Its versatility relates in part to its increased pH stability and excellent compatibility with a wide range of active pharmaceutical ingredients. This unique oil-in-water emulsion is non-greasy, non-irritant and does not contain MI/MCI or parabens. VersaPro™ is a highly moisturizing cream formulated with excellent penetrating properties.

### FEATURES & BENEFITS

<b>Scientific Data</b>	<ul style="list-style-type: none"><li>– Increased permeation of Progesterone through the skin (DPSI, January 2010)</li><li>– Validated Beyond-Use-Dates (BUDs) available and more to come!</li><li>– Scientifically Classified as an All-Day Moisturizer</li></ul>
<b>API Compatibility</b>	For lipophilic and hydrophilic drugs (hormones, analgesics, etc.)
<b>Appearance</b>	White, smooth, shiny cream
<b>Intended Use</b>	<ul style="list-style-type: none"><li>– Pharmaceutical: Versatile and highly penetrating transdermal delivery vehicle</li><li>– Cosmetic: Non-comedogenic moisturizer containing Vitamin E and Aloe Vera</li></ul>
<b>pH Stability</b>	pH 2 to 12
<b>Tolerance to API Base &amp; Salt Forms</b>	Excellent
<b>Application to Mucous Membranes</b>	Yes
<b>Heat Sensitivity</b>	Stable at 40 °C (104 °F)
<b>Preservative Effectiveness</b>	Passes USP microbial challenge test <51>





## IN VITRO SKIN STUDIES ON MEDISCA NETWORK FORMULATIONS

Superior performance of VersaPro™ Cream Base compared to competitor's cream base

### Introduction

Realizing the critical role of drug penetration and skin retention involved in transdermal applications, MEDISCA has taken a unique approach towards formulation development by testing and comparing its products to today's leading cream bases. To achieve this goal, MEDISCA partnered up with Dow Pharmaceutical Sciences Inc. (DPSI), a topical product development company with 25+ years of experience interpreting *in vitro* data. DPSI specifically studied the *in vitro* percutaneous absorption of (<sup>14</sup>C)-Progesterone from nine transdermal delivery vehicles, including MEDISCA's own VersaPro Cream Base. The study was conducted by using the Bronaugh flow-through diffusion cell method (see Figure 1) and human excised skin from a single Caucasian female donor following elective abdominal surgery. In fact, results from *in vitro* studies using this particular tissue preparation are typically less variable and more reproducible than *in vitro* studies using human cadaver skin preparations.



Figure 1. Bronaugh Flow-Through Cells. 2010 DPSI. Available at [www.dowpharmasci.com](http://www.dowpharmasci.com)

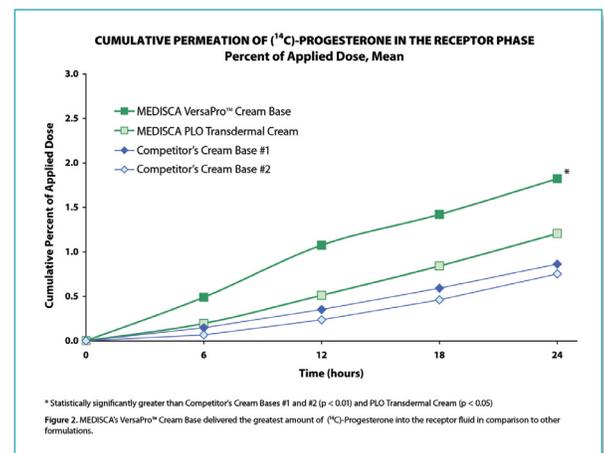
### Methods

All formulations evaluated in this study were equally spiked with sufficient (<sup>14</sup>C)-Progesterone to achieve a nominal formulation dose of 1.0μ Ci/3.2 mg per diffusion cell, which corresponds to a topical application of 5 mg formulation per cm<sup>2</sup> of tissue. This clinically relevant dose was dispensed onto dermatomed skin tissue (0.028 ± 0.004 inches), and was left undisturbed for a 24-hour exposure period. The 54 flow-through diffusion cells were maintained at a constant temperature of 32 °C by use of recirculating water baths. Fresh receptor phase buffered solution was continuously pumped under the tissue at a flow rate of 1.0 mL/hr and collected in 6-hour intervals. Over the 24-hour period, the amount of (<sup>14</sup>C)-Progesterone residing in the receptor phase samples was quantified using liquid scintillation analyzing techniques to determine the cumulative permeation of (<sup>14</sup>C)-Progesterone.

### Results

Following a 24-hour period, MEDISCA's VersaPro Cream Base delivered significantly more (<sup>14</sup>C)-Progesterone relative to the Competitor's Cream Bases and PLO Transdermal Cream (1.82 % of the applied dose).

In addition, VersaPro Cream Base displayed a more rapid rate of (<sup>14</sup>C)-Progesterone delivery over the exposure period.



### FOR MORE INFORMATION

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