



## Style Retention Study

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**Tradename:** ProCutiGen® Hold

**Code:** 20831

**CAS#:** 999999-99-4 & 1686112-10-6 (or) 9015-54-7

**Test Request Form #:** 3294

**Lot#:** NC170117-M

**Sponsor:** Active Concepts, LLC; 107 Technology Drive Lincolnton, NC 28092

**Study Directors & Principal Investigators:** Hillary Phillis & Tia Alkazaz

### Introduction

**ProCutiGen® Hold** is capable of modifying hair shape while protecting it from styling damage. Rather than focusing on repairing broken bonds that occur during physical and chemical stress, **ProCutiGen® Hold** consists of bivalent cationic peptides that create a *de novo* cuticle on the hair to prevent damage from happening in the first place. The formation of this biomimetic cuticle helps to retain style while offering protection from harsh styling treatments to promote healthy hair.

The purpose of this study is to determine the style retention properties of **ProCutiGen® Hold** on both styled hair.

### Methods & Materials

This study was conducted using two sets of hair, Sensationnel Bare & Natural Brazilian 100% Virgin Remi Unprocessed Human Hair (Hair Zone Moonachie, NJ).

The humidity chamber was equilibrated two hours prior to testing at 25°C and 90% Relative Humidity. Then two swatches were washed and allowed to dry under ambient conditions. The swatches were then combed 30 times each to remove tangles. The virgin straight hair set; one of the swatches was treated with the unloaded vehicle (water) and the second swatch was treated with the vehicle containing 2.0% **ProCutiGen® Hold**. Both hair swatches were then curled with a curling iron. After completing the respective hair treatment, the tresses were hung on the support stand in the humidity chamber. The length and width was measured of each swatch. Pictures were taken immediately after hanging the swatches, 6 hours, 8 hours, and 24 hours later.

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## Results



**Figure 1. Curled Hair at T=0**  
L- Untreated, R-Treated



**Figure 2. Curled Hair at T=6hrs**  
L- Untreated, R-Treated



**Figure 3. Curled Hair at T=8hrs**  
L- Untreated, R-Treated



**Figure 4. Curled Hair at T=24hrs**  
L- Untreated, R-Treated



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Swatch	Percent Difference Style Retention 6hrs	Percent Difference Style Retention 8hrs	Percent Difference Style Retention 24hrs
Untreated Curled	17.1%	19.9%	21.6%
2.0% <b>ProCutiGen® Hold</b> + Curled	9.6%	18.1%	18.6%

\*\*Percent difference calculated based on tresses at T=0

### Discussion

Based on the results, it is clear from viewing the swatches that **ProCutiGen® Hold** is capable of retaining curls better than the unloaded vehicle comparison. In fact, 2.0% **ProCutiGen® Hold** retained curls by two times better in a 6 hour period. **ProCutiGen® Hold** held significantly better in the 6 hours time period and held evenly for the remaining 24 hours. It is important to also note, not only the percent difference calculation, but how the hair took the curl initially took. It is evident that the treated swatch curled better with a more uniform, tame curl. As time lapsed, the untreated swatch does increase in width demonstrating that **ProCutiGen® Hold** may also protect against frizz in humid environments. For this reason, we can conclude that **ProCutiGen® Hold** is an ideal ingredient to add to hair care applications designed to provide curl retention over a longer period of time.