Phase 3 trial demonstrates that MC2-01 cream has improved treatment efficacy compared to calcipotriene plus betamethasone dipropionate topical suspension in patients with mild to moderate psoriasis vulgaris

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INTRODUCTION:
MC2-01 cream is a novel topical treatment of psoriasis containing the active ingredients calcipotriene and betamethasone dipropionate (0.005% / 0.064% w/w, CAL/BDP). MC2-01 cream is based on PAD™ Technology contributing high penetration of the actives combined with excellent cosmetic elegance. Data from a phase 3 trial is presented comparing efficacy of MC2-01 cream to vehicle and to the comparator CAL/BDP topical suspension (“CAL/BDP TS”) in adults with mild to moderate psoriasis vulgaris on the body. The trial enrolled 796 patients at 55 clinical sites across the United States.

Figure 1: Rationale for MC2-01 cream

Calcipotriene (CAL) 
Betamethasone dipropionate (BDP)

- Dual additive efficacy of CAL and BDP
- Improved safety profile compared to the individual actives alone
  - BDP counteracts potential skin irritation of CAL
  - CAL mitigates potential skin atrophogenic effect of BDP
- PAD™ Technology uniquely enables stable aqueous cream combining CAL and BDP

REQUIREMENTS:
- Requires pH 8 for stability
- Requires pH 4-6 for stability
- Potent corticosteroid

METHODS:
The phase 3, randomized, multicenter, investigator-blind, parallel-group trial evaluated the efficacy and safety of MC2-01 cream compared to MC2-01 vehicle and CAL/BDP TS (sourced as Taclonex® Topical Suspension) in adult patients with psoriasis vulgaris on the body. The 796 enrolled patients were distributed in three arms: MC2-01 cream (n=343), CAL/BDP TS (n=338), MC2-01 vehicle (n=115). Patients applied trial medication once daily for eight weeks. Eligible patients were ≥18 years with a clinical diagnosis of psoriasis vulgaris of at least 6 months duration with mild to moderate disease severity according to the 5-point Physician’s Global Assessment (PGA) scale, involving 2-30% body surface area (BSA) and with a mPASI of at least 2. The primary efficacy endpoint was the proportion of subjects with treatment success at Week 8, defined as a minimum two-point decrease from baseline in PGA score. Table 1 demonstrates that patient demographics and baseline disease characteristics (ITT population) were comparable across the treatment groups.

Figure 2: Phase 3 trial design

Table 1: Summary of Patient Demographics and Baseline Disease Characteristics (ITT population)

|                | MC2-01 cream (n=343) | CAL/BDP TS (n=338) | MC2-01 vehicle (n=115) | Total N=794
|----------------|----------------------|--------------------|------------------------|--------
| Mean age (SD)  | 52.0 (14.4)          | 52.8 (13.7)        | 50.4 (14.3)            | 52.0 (14.1)
| Gender         |                      |                    |                        |        
| Female         | 40.6                 | 34.4               | 38.3                   | 37.7   
| Male           | 59.4                 | 65.6               | 61.7                   | 62.3   
| Race           |                      |                    |                        |        
| White          | 84.8%                | 88.7%              | 88.7%                  | 87.0%  
| Black or African Americans | 9.6%    | 5.9%              | 9.6%                   | 8.2%   
| Asian          | 2.9%                 | 3.0%               | 0.9%                   | 2.6%   
| Other          | 2.4%                 | 2.4%               | 0.9%                   | 2.2%   
| Duration of psoriasis years (SD) | 17.7 (13.4) | 15.0 (12.7) | 16.3 (13.7) | 16.3 (13.2) 
| Baseline PGA   |                      |                    |                        |        
| Mild (%)       | 19.9                 | 16.9               | 17.4                   | 18.3   
| Moderate (%)   | 80.1                 | 83.1               | 82.6                   | 81.7   
| Baseline mean mPASI (SD) | 7.3 (3.5) | 7.7 (4.1) | 7.1 (4.1) | 7.4 (4.5) 
| Baseline mean BSA % (SD) | 7.3 (6.0) | 8.4 (7.0) | 7.5 (6.1) | 7.8 (6.5) 

*Ten patients (one in each active arm) were excluded from the ITT population since they did not open the medication

Figure 3: Primary efficacy variable: % PGA Treatment Success

Table 2: Primary endpoint – PGA Treatment Success at Week 8

<table>
<thead>
<tr>
<th></th>
<th>MC2-01 cream (n=302)</th>
<th>CAL/BDP TS (n=275)</th>
<th>MC2-01 vehicle (n=88)</th>
</tr>
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<tbody>
<tr>
<td>PGA Treatment Success Rate % (CI 95%)</td>
<td>40.1 (34.5 – 45.6)</td>
<td>24.0 (19.0 – 29.0)</td>
<td>4.5 (0.2 – 8.9)</td>
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*The primary analysis for non-inferiority compared was conducted on the per-protocol analysis set

EFFICACY RESULTS:
The phase 3 trial met its primary objective to demonstrate non-inferiority of MC2-01 cream versus CAL/BDP TS on PGA treatment success at Week 8 using PGA treatment success as primary endpoint and is superior to CAL/BDP TS without compromising the safety profile of the currently marketed CAL/BDP fixed combinations.

Figure 4: Secondary efficacy variable: % change from baseline in mPASI

CONCLUSION:
MC2-01 cream demonstrated in the phase 3 trial a substantial improvement in overall efficacy and onset of action for topical treatment of psoriasis compared to CAL/BDP TS without compromising the safety profile of the currently marketed CAL/BDP fixed combinations.