

## 2 SYNOPSIS

<b>NAME OF COMPANY:</b> Holy Stone Healthcare Co., Ltd.	<b>INDIVIDUAL STUDY SYNOPSIS</b>	
<b>NAME OF FINISHED PRODUCT:</b> Mesalamine and Sodium Hyaluronate  <b>NAME OF ACTIVE INGREDIENT(S):</b> Mesalamine and Sodium Hyaluronate	<b>INDIVIDUAL STUDY TABLE REFERRING TO PART OF THE DOSSIER</b>  <b>Volume:</b>  <b>Page:</b>	<b>(FOR NATIONAL AUTHORITY USE ONLY)</b>
<b>Title of Study:</b> A Phase 2a, Multicenter, Randomized, Double-blind, Parallel-group, Placebo-controlled Trial of IBD98-M Delayed-release Capsules to Induce Remission in Patients with Active, Mild to Moderate Ulcerative Colitis		
<b>Investigators:</b> The list of Investigators is provided in Appendix 16.1.4 of the full clinical study report (CSR).		
<b>Study Sites:</b> A total of 9 investigative sites in Italy which received IEC/IRB approval to participate in this study enrolled at least 1 patient.		
<b>Publication (Reference):</b> None.		
<b>Studied Period:</b> 28 January 2016 to 02 July 2018	Phase of Development: IIa	
<b>Objectives:</b> The primary objective was to compare the percentage of patients in ulcerative colitis remission at Week 6 for each of the 2 IBD98-M dose groups versus placebo (remission was defined as having a modified Ulcerative Colitis Disease Activity Index [UCDAI] score of $\leq 1$ , with a score of 0 for rectal bleeding and stool frequency, no mucosal friability, and a sigmoidoscopy score not exceeding 1). The secondary objectives were as follows: <ul style="list-style-type: none"> <li>To compare clinical improvement rates at Week 6 among treatment groups (defined as a <math>\geq 3</math> point reduction from Baseline in the modified UCDAI score)</li> <li>To compare endoscopic improvement at Week 6 among treatment groups (defined as a <math>\geq 1</math> point decrease in modified UCDAI mucosal appearance subscore)</li> <li>To determine the change in symptoms (rectal bleeding and stool frequency) from Baseline to each study visit among treatment groups</li> <li>To evaluate the safety and tolerability profile of IBD98-M</li> </ul> The exploratory objectives were as follows: <ul style="list-style-type: none"> <li>To examine the effect of IBD98-M treatment on fecal calprotectin</li> <li>To examine any correlation between therapeutic response to IBD98-M and Baseline characteristics</li> </ul>		
<b>Methodology:</b> It was a Phase 2a, multicenter, randomized, double-blind, parallel group, placebo-controlled trial in patients with active, mild to moderate UC, conducted as an exploratory proof-of-concept study to investigate the clinical efficacy of IBD98-M delayed-release capsules (in a fixed combination) over a 6-week treatment period and a 2-week follow-up period.		
<b>Number of Patients:</b> It was planned to enroll a total of 51 patients. A total of the 87 patients were screened, 51 patients were randomized, 17 patients in the IBD98-M 0.8 g/day group, 16 patients in the IBD98-M 1.2 g/day group, and 18 patients on the placebo group. Overall, 37 patients (72.5%) completed the study.		
<b>Diagnosis and Main Criteria for Inclusion:</b> The patients having a score of $\geq 4$ and $\leq 10$ on the		

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modified UCDAI and a score of $\geq 1$ on the endoscopy mucosal appearance subscore were enrolled in the study		
<b>Test Product:</b> IBD98-M 200 mg <b>Dose:</b> 0.8 g/day or 1.2 g/day <b>Mode of Administration:</b> Oral <b>Batch Numbers:</b> 24501001-01D002, 24501001-02D004, 24501001-02D007, 24501001-03B001, 24501001-05B001, 24501001-06B001, 24501001-01D003, 24501001-02D006, 24501001-03B002, 24501001-05B002, and 24501001-06B002		
<b>Duration of Treatment:</b> Each patient received 3 capsules twice a day for a period of 6 weeks.		
<b>Reference Therapy:</b> Placebo <b>Dose:</b> Not applicable. <b>Mode of Administration:</b> Oral <b>Batch Numbers:</b> 24501001-01D001, 24501001-02D005, 24501001-03B003, 24501001-05B003, and 24501001-06B003		
<b>Criteria for Evaluation:</b> <u>Efficacy:</u> The primary variable was the percentage of patients in remission at Week 6. <u>Safety:</u> The incidence and severity of all treatment emergent adverse events (TEAEs) and serious adverse events (SAEs) throughout the study and systemic tolerance were assessed.		
<b>Study Endpoints:</b> <u>Primary:</u> The primary endpoint was the percentage of patients in remission at Week 6. Remission was defined as having a modified UCDAI score of $\leq 1$ , with a score of 0 for rectal bleeding and stool frequency, no mucosal friability, and a sigmoidoscopy score not exceeding 1. <u>Secondary:</u> <ul style="list-style-type: none"> <li>Proportion of patients with clinical improvement at Week 6 (defined as a <math>\geq 3</math> point reduction from Baseline in the modified UCDAI score)</li> <li>Proportion of patients with endoscopic improvement at Week 6 (defined as a <math>\geq 1</math> point decrease in modified UCDAI mucosal appearance subscore)</li> <li>Change in symptoms (rectal bleeding and stool frequency) from Baseline to each study visit</li> <li>Incidence and severity of all TEAEs</li> <li>Incidence and severity of SAEs</li> <li>Systemic tolerance (physical examination, vital signs, electrocardiograms [ECGs], and laboratory assessments of safety parameters)</li> </ul> <u>Exploratory:</u> The exploratory endpoint was the analysis of the reduction in fecal calprotectin.		
<b>Statistical Methods:</b> Analyses were done on the intent-to-treat (ITT) population and the per-protocol population. The primary outcome, the percentage of patients in remission at Week 6, was calculated for each treatment group. An analysis of variance approach was used.		

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<b>SUMMARY OF RESULTS</b>		
<p><b><u>Efficacy Results:</u></b></p> <ul style="list-style-type: none"> <li>The primary efficacy endpoint for the study was the percentage of patients in remission at Week 6. No statistically significant difference was observed between the placebo group and the IBD98-M 0.8 g/day (<math>p &gt; 0.999</math>) group or the IBD98-M 1.2 g/day (<math>p &gt; 0.999</math>) group for ITT population. Results for Per Protocol (PP) population and for sensitivity analysis were similar to the ITT population.</li> <li>No statistically significant difference was observed between the placebo group and the IBD98-M 0.8 g/day group or the IBD98-M 1.2 g/day group for clinical improvement at Week 6 for ITT population or for PP population.</li> <li>Higher reduction from Baseline was observed in the UCDAI score for the IBD98-M 1.2 g/day group (4.20) compared with the placebo group (1.80), and the IBD98-M 0.8 g/day group (1.17), at Visit 6, in the patients categorized as improved.</li> <li>No statistically significant difference was observed between the IBD98-M 0.8 g/day group or the IBD98-M 1.2 g/day group and the placebo group for endoscopic improvement at Week 6 for ITT population and PP population although higher reduction in endoscopic score was seen in IBD98-M 0.8 g/day group.</li> <li>No statistically significant difference was observed between the IBD98-M 0.8 g/day group (<math>p = 0.837</math>) or the IBD98-M 1.2 g/day group (<math>p = 0.335</math>) compared to the placebo group for mean change from Baseline to Visit 6 in UCDAI score. However, there was a change in the median score from Baseline to Visit 6 in UCDAI score which was larger in the IBD98-M 1.2 g/day versus IBD98-M 0.8 g/day versus placebo, although no statistical significance was seen.</li> <li>No statistically significant difference was observed between the IBD98-M 0.8 g/day group (<math>p = 0.133</math>) or the IBD98-M 1.2 g/day group (<math>p = 0.832</math>) compared to the placebo group for mean change from Baseline to Visit 6 in endoscopic score.</li> <li>No statistically significant difference was observed between the IBD98-M 0.8 g/day group or the IBD98-M 1.2 g/day group compared to the placebo group for rectal bleeding, stool frequency, and fecal calprotectin. However, no patients in the IBD98-M 1.2 g/day group had severe rectal bleeding and who shifted from mild to moderate or to severe rectal bleeding compared to the other groups.</li> <li>For UCDAI scores without including endoscopic score, higher reduction was observed in the IBD98-M 1.2 g/day group (-1.85) compared to the placebo group (-1.25), and the IBD98-M 0.8 g/day group (-0.36), in the patients categorized as improved.</li> <li>Changes in UCDAI scores without including endoscopic score and physician global assessment including withdrawn patients with completed UCDAI, higher reduction was observed in the IBD98-M 1.2 g/day group (-1.21) compared to the placebo group (-0.14) and the IBD98-M 0.8 g/day group (-0.15).</li> <li>Difference between the placebo group and the IBD98-M 0.8 g/day group or the IBD98-M 1.2 g/day group was not statistically significant for the Inflammatory Bowel Disease Questionnaire shift from Baseline to Visit 6 and for mental health summary score and</li> </ul>		

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<p>reported health transition score components of SF 36. For physical health summary score component of SF-36, statistically significant difference was observed between the IBD98-M 0.8 g/day group (<math>p = 0.010</math>) and the placebo group and between the IBD98-M 1.2 g/day group (<math>p = 0.032</math>) and the placebo group, from Baseline to Visit 6.</p>		
<p><b>Safety Results:</b></p> <ul style="list-style-type: none"> <li>Ten patients (58.8%) in the IBD98-M 0.8 g/day group, 11 patients (68.8%) in IBD98-M 1.2 g/day, and 15 (83.3%) patients in the placebo group reported at least 1 AE during the study.</li> <li>Overall, 33 patients (64.7%) reported at least 1 TEAE. The proportion of patients with at least 1 TEAE was higher in placebo group (72.2%) compared to IBD98-M 1.2 g/day (62.5%) and IBD98-M 0.8 g/day (58.8%) group.</li> <li>TEAEs of nausea and headache were reported as related TEAE for 2 patients (3.9%). TEAEs of dyspepsia, diarrhea, pyrexia, and dizziness were reported as related TEAE for 1 (2.0%) patient, each.</li> <li>No TEAE with severe intensity was reported during the study.</li> <li>No death was reported during the study.</li> <li>Only 1 SAE was reported in a screen failure subject.</li> <li>No SAE was reported during the study.</li> <li>No serious TEAEs were reported during the study.</li> <li>Overall, 6 patients (11.8%) were reported with at least 1 TEAE leading to study drug discontinuation. Of these, study drug discontinuation was reported for 4 (23.5%) patients in IBD98-M 0.8 g/day group and 2 patients (11.1%) in the placebo group.</li> <li>All clinically significant laboratory abnormalities were reported as TEAEs.</li> <li>None of the patients reported with abnormal clinical significant finding for vital signs, ECG, or physical examinations.</li> <li>None of the patient was reported to be positive for the pregnancy test.</li> </ul>		
<p><b>Conclusions:</b></p> <ul style="list-style-type: none"> <li>In this proof-of-concept study, treatment with IBD98-M delayed-release capsules (0.8 mg/day and 1.2 mg/day) did not meet the primary endpoint as measured by percentage of patients in remission.</li> <li>Mean change from Baseline to Visit 6 in UCDAI score was higher in the IBD98-M 1.2 g/day group compared with the IBD98-M 0.8 g/day group and the placebo group. For physical health summary score component of SF-36, statistically significant difference was observed between the placebo group and the IBD98-M 0.8 g/day group (<math>p = 0.010</math>) and between the placebo group and the IBD98-M 1.2 g/day group (<math>p = 0.032</math>).</li> <li>The patients disease severity distribution in IBD98-M 1.2 g/day and 0.8 g/day included UCDAI score of 9 to 10 which was not the case for placebo, improvements in UCDAI score reduction and endoscopic improvement was seen, respectively, compared to placebo. Despite this distribution, IBD98-M 1.2 g/day group showed improvements in UCDAI score reduction; and IBD98-M 0.8 g/day showed endoscopic improvement, compared to</li> </ul>		

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<p>the placebo group.</p> <ul style="list-style-type: none"><li>• No statistical significance was demonstrated in this study due to the limited number of patients per study arm.</li><li>• IBD98-M delayed-release capsules (0.8 mg/day and 1.2 mg/day) were found to be safe and well tolerated in this patient population. No new safety signals or unexpected safety findings were observed during the study.</li></ul>		
<b>Date of Report:</b> 20 May 2019		