I3.1

Effective relief of the Irritable Bowel Syndrome (IBS)

THE SCOPE

Irritable Bowel Syndrome (IBS) is a condition characterized by abdominal pain, discomfort, bloating and altered intestinal motility and transit, where symptoms are not explained by structural abnormalities. IBS is one of the most common gastrointestinal disorders, affecting between 8 and 15% of the adult population in western countries, and 6 to 12% in Asian countries, although less than 50% of the sufferers are routinely diagnosed.

The pathophysiological model of IBS is multifactorial and includes a prominent role for anxiety and altered central stress responses. The IBS market is largely underpenetrated, and there are currently no well-established therapeutic options, both because of limited efficacy and untoward side effects. Also, current therapies address specific bowel symptoms, while targets related to visceral sensations are less clear.

THE PRODUCT

Patented probiotic strains by WO2011/092261

Pediococcus acidilactici CECT 7483

Lactobacillus plantarum CECT 7484

Lactobacillus plantarum CECT 7485

THE EVIDENCE

Animal

The terapeutic effects of i3.1 have been demonstrated in two experimental models of colitis, a dextran sulfate sodium (DSS)-induced colitis model and an interleukin (IL)-10-deficient mice model, and in a randomized, double-blind, placebo-controlled clinical trial. Thirty two eight-week-old Balb/c mice were allocated to one of four experimental groups:

a) I3.1 ($1x10^9$ CFU daily)

b) VSL#3 ($1x10^9$ CFU daily)

c) DSS-control;

d) healthy-control.

Experimental colitis was induced by administering 3% (w/v) DSS in drinking water for 5 days. Thirty six six-week-old C57B6J IL-10 (-/-) mice were allocated to one of three experimental groups:

a) I3.1 ($1x10^9$ CFU daily)

b) VSL#3 ($1x10^9$ CFU daily)

c) Control

Body weight was recorded daily. Mice were euthanized and colon samples were harvested for histological examination and cytokine measurements. I3.1 had no change in body weight between the end of DSS administration and sacrifice whereas VSL#3-treated mice had a moderate weight loss. The global reparative, fibrosis and re-epithelization scores were higher in the I3.1 group compared with the healthy control one. Treatment with I3.1 was able to normalize IL-6 to levels similar to that of healthy controls. I3.1-treated mice in the IL-10-deficient mice model had markedly lower levels of INF- compared to the other groups.

Human

A total of 84 patients with IBS and diarrhea according to Rome-criteria were randomly allocated in a multicenter, randomized, double-blind, placebo-controlled intervention clinical trial to receive one capsule a day for 6 wk containing:

1) I.31 high dose;

2) I.31 low dose;

3) placebo.

At baseline, and 3 and 6 wk of treatment, patients filled the IBSQoL, Visceral Sensitivity Index (VSI), and global symptom relief questionnaires. After 6 wk of treatment, IBS-QoL increased by 18 ffl 3 and 22 ffl 4 points in the high and the low dose groups, respectively ($P = 0.041$ and $P = 0.023$ vs placebo), but only 9 ffl 3 in the placebo group. The 55% of probiotic-treated subjects achieve an improvement of ³15 points, while only 17% of placebo-treated do (Chi-square $P < 0.01$, NNT = 2.6) (Figure 1). Gut specific anxiety, as measured with VSI, also showed a significantly greater improvement after 6 wk of treatment in patients treated with probiotics (by 10 ffl 2 and 14 ffl 2 points, high and low dose respectively, $P < 0.05$ for both vs 7 ffl 1 score increment in placebo).