

The study has been designed to include participants that fulfill a select inclusion and exclusion criteria. You are eligible to participate in this study if you:

- 1. Are aged 18-55 years old at the inclusion of the study.
- 2. Sign the Informed Consent and are willing and able to comply with study procedures.
- 3. Are willing to maintain your diet and physical activity levels during the study.
- 4. Are able to swallow a size-00 capsule (23mm length and 8mm width).
- 5. Meet the diagnostic criteria (Rome IV) for functional abdominal bloating distension, functional diarrhea, or IBS-D
- 6. Meet the criteria for bloating severity.
- 7. Meet the diagnostic for SIBO as measured with the Glucose Breath Test.

You will not be eligible to participate in this study if you:

- 1. Have had prior gastrointestinal disease, surgery, or radiation treatment which, in the Investigator's opinion, would lead to intestinal structuring or obstruction with a risk of capsule non-excretion (e.g., achalasia, eosinophilic esophagitis, any IBD), or previous esophageal, gastric, small intestinal, or colonic surgery. Appendectomy or cholecystectomy more than 3 months before the on-site study visit is acceptable.
- 2. Have any known structural gastrointestinal abnormalities such as structures or fistulas leading to mechanical obstruction.
- 3. Patients with central venous catheters.
- 4. Have any history of abdominal radiation treatment.
- 5. Have used any medications in the week prior on-site study visit, unless part of regular treatment, that could substantially alter gastrointestinal motor function (e.g., opioids, prokinetics, anticholinergics, GLP-1 analogues); laxative use is allowed if it is kept unchanged in the week prior to the study visit. Proton pump inhibitors (PPIs) are allowed provided a wash-out period of 48 hours is respected before swallowing the SIMBA capsules and PPI treatment is resumed only 4 hours thereafter.
- 6. Suffer from organic motility disorder, including gastroparesis, intestinal pseudo-obstruction, systemic sclerosis, Ogilvie's syndrome.
- 7. Suffer from celiac disease (treated or untreated),
- 8. Have any significant heart, liver, lung, kidney, blood, endocrine or nervous system disease, which in the opinion of the investigator, would adversely affect study safety or outcome.
- 9. Have had a cancer diagnosis or treatment within the past year (non-melanoma skin cancers are acceptable).
- 10. Suffer from gastrointestinal inflammatory diseases, including ulcerative colitis, Crohn's disease, microscopic colitis.
- 11. Participants with IBS presenting with alarm symptoms such as: rectal bleeding, unexplained weight loss, iron deficiency anemia, nocturnal symptoms, and a family history of organic diseases including colorectal cancer, inflammatory bowel disease and celiac spruce
- 12. Participants over the age of 50 who have not had a colonoscopy in the last 5 years.
- 13. Have epilepsy diagnosis.

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- 14. Have a history or diagnosis of immunological diseases, infectious diseases or immune-compromised conditions, which in the opinion of the investigator, would adversely affect study safety or outcome. Such as, but not limited to, hepatitis, tuberculosis, HIV, Parkinson's, multiple sclerosis, AIDS, lymphoma, and long-term corticosteroid treatment.
- 15. Have a history of oropharyngeal dysphagia, or other swallowing disorder with a risk of capsule aspiration.
- 16. Have a diagnosis of IBS-C.
- 17. Have used antibiotics (except for topical use) in the previous 12 weeks. You may be eligible to participate once a 12-week washout is completed.
- 18. History of less than 3 bowel movements per week.
- 19. Regular use of probiotics, prebiotics or symbiotics (including food and drinks containing added probiotics and/or probiotic yogurts with live, active cultures). You may be eligible to participate once a 1-month washout is completed.
- 20. Have had a Fecal Microbiota Transplantation at any time in the past.
- 21. Currently pregnant or breastfeeding.
- 22. Are planning to become pregnant.
- 23. Suffer from alcohol or drug abuse.
- 24. Allergy to the components present in the probiotic and placebo capsules.
- 25. Are non-English speaking.
- 26. Are scheduled for an MRI at any time during the study. Potential participants may be eligible to participate once their MRI procedure is completed.

If you suffer from consistent and severe fever, vomiting, bloody diarrhea or abdominal pain, please indicate so to the investigator at any time during the study. The investigator will evaluate whether it is safe for you to continue in the study.

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