



Human Gut Health Assessment and Enhancers

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Invention Description

The human gut hosts millions of bacteria, which help balance the immune system, digest food, produce vitamins and promote gastrointestinal (GI) motility. Imbalances in the gut microbiome may contribute to immune and neurological disorders as well as GI problems. Given the crucial role of gut microorganisms in maintaining GI health and the increasing evidence of GI problems in autistic children, it is highly likely that there is a link between autism and gut microbiota.

While there have been reports to identify and characterize intestinal microflora, limited data are available to elucidate autism-related gut microbe composition, and none have successfully elucidated a link between gut microbiota and autism. This is important for accurate diagnosis as well as for treatment of autism-related GI problems and possibly other autistic symptoms. Especially, previous reports overlooked potentially beneficial gut flora that autistic children are missing.

Researchers at the Biodesign Institute of Arizona State University have developed a novel but simple method of assessing human gut health using microbial biomarkers present in stools. These microbial biomarkers may be used not only to assess human gut health, but to test and detect autism spectral disorders (ASD) in early stages. Moreover, these microorganisms may be used as probiotics to enhance human gut health and provide a beneficial enhancement for ASD treatment.

This technology provides for a versatile and simple method to gauge human gut health and detect early stage ASD. Plus, it presents a novel probiotic as a treatment for ASD or poor gut health.

Potential Applications

- Assessment of human gut health
- Early stage detection of ASD
- Supplement to modify the gut microbiota in a beneficial way for patients with ASD or poor gut health
- Assessment of probiotic treatment

Benefits and Advantages

- Early stage ASD detection – individuals with ASD may have under-developed communication skills; biomarkers provide easier detection means
- Assessment of gut health – using stool samples vs. more invasive means
- May reduce ASD symptoms – using probiotic to build up healthy gut biome
- May help with other gut disorders in the same fashion