

GA-MAP™ DYSBIOSIS TEST

Case study from a professor of medicine and gastroenterology

Dysbiosis is an imbalance of microbial organisms within the body that is closely linked to a number of medical conditions, including inflammatory bowel disease (IBD), irritable bowel syndrome (IBS), obesity and diabetes. The GA-map Dysbiosis Test is the first CE-marked gut microbiota DNA analysis tool that can identify and characterise dysbiosis in patients from a stool sample. It is a high throughput, easy-to-use test, and based on 54 DNA probes that target more than 300 species of gut bacteria to build a more reproducible and precise profile of the microbiota than alternative methods.



**Emeritus Professor
Peter Malfertheiner**

Former Director of the Clinic of Gastroenterology, Hepatology and Infectious Diseases at the University Magdeburg, and currently Senior Professor at the Ludwig Maximilian University, University Clinic in Munich.

Peter Malfertheiner, Senior Professor at the Ludwig Maximilian University in Munich, has a special interest in the significance of the microbiome in healthy populations, as well as in patients suffering from a range of diseases, and is leading several research projects to look more closely at its clinical relevance. The team in Munich is using the GA-map Dysbiosis Test and analysis service to identify dysbiosis in individuals and in wider population groups, and to monitor the effect of a range of different treatments on gut microbiota.

Healthy ageing and the microbiome

“Dysbiosis can be attributed to a whole range of factors, from an individual’s genetics, age, diet and immunity, to stress levels, medication and infection,

all of which influence the diversity and abundance of the different microbiota colonising the gut. Although imbalance is common, it can be quite tricky to diagnose the root cause because the ‘normal’ picture can vary between individuals. The variance that we see from one person to another is something that is being investigated in detail in a current project by the team in Magdeburg, looking at the role of the gut microbiome in healthy ageing. We are using the GA-map Test to compare microbial balance in individuals who have a healthy ageing process with others who are unwell; it is very important to understand what happens to bacterial profiles as we age, and to establish what is truly normal. Another major focus is the effect of *Helicobacter pylori* infection and discovering what happens to the gut microbiota when patients take antibiotics to treat this.”

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BIOHIT HealthCare

Innovating for Health

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There is still so much to learn about the microbiome, we are only just beginning to discover its importance, and the GA-map Test will help us do just that.



Manipulating the microbiome

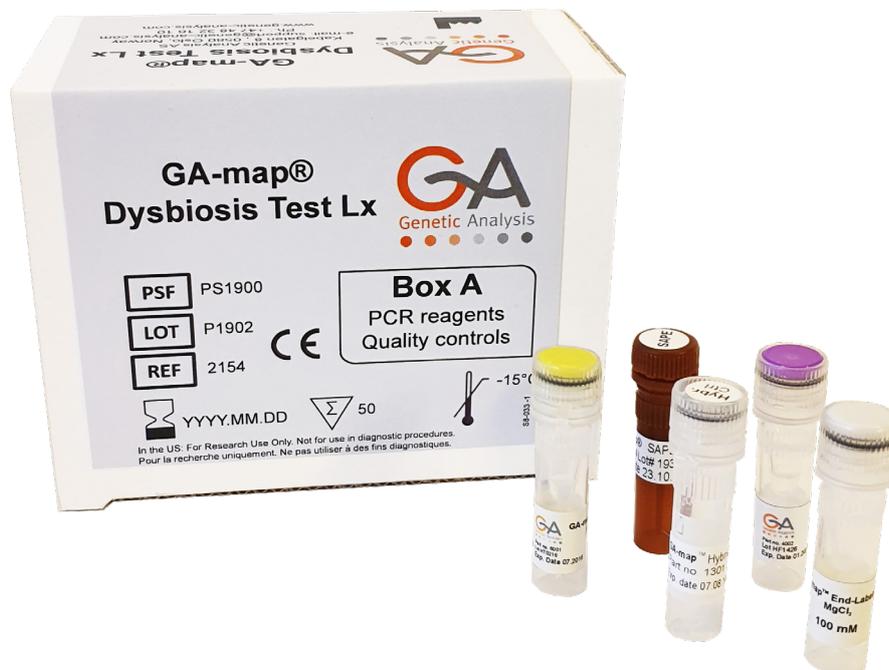
“Our eventual goal is to use the results of the GA-map Test as a base line and, from there, we can formulate individualised probiotic compositions – whether from single, dual or multiple bacterial strain mixtures, or even fungi – to try to restore the patient’s microbial balance. After four weeks, retesting will show us how the microbiota have changed, and this can be correlated with the patient’s symptoms.”

Overcoming current testing challenges

“Until now, the alternative methods for studying dysbiosis have included breath tests and small bowel culture techniques, but these are not well validated and do not give an accurate picture of the gut microflora. In contrast, the GA-Map technology is standardised and consistent, and also gives a numerical value – a dysbiotic index that is calculated against a normal control population. From a practical point of view, it is also non-invasive and faecal samples are easier to store.”

The future

“Targeting and altering the gut microbiota using new molecular diagnostic technologies has the potential to open up a new era of personalised treatment for gastrointestinal diseases, but that is only the start. More work is needed to look at how the GA-map Test could be used to establish whether the composition of an individual’s gut microbiome correlates with their risk or susceptibility of developing certain diseases, for instance, cancer of the colon. There is still so much to learn about the microbiome, we are only just beginning to discover its importance, and the GA-map Test will help us do just that.”



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