

Anatara Lifesciences Ltd

# Investor Presentation



ANATARA  
LIFESCIENCES



Oct 2022  
ASX: ANR

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# Specialising in the Gastrointestinal Tract

Evidenced-based solutions for gastrointestinal tract health issues



## About Anatarata

Anatarata Lifesciences Ltd (ASX:ANR) is focused on the validation and commercialisation of innovative, evidence-based products for gastrointestinal health with significant unmet needs.

The Company is currently involved in a human clinical trial (GaRP for irritable bowel syndrome).

Additionally, Anatarata's animal husbandry health products present commercial opportunities in their own right.

## Corporate Snapshot (12/10/2022)

|                         |                |
|-------------------------|----------------|
| ASX Code                | ANR            |
| Share Price             | \$0.06         |
| Shares on Issue         | ~71.4m         |
| Market Capitalisation   | ~\$4.2m        |
| Cash (30 June 2022)     | ~\$1.1m        |
| <b>Enterprise Value</b> | <b>~\$3.1m</b> |

## Investment Highlights

### Novel Technology

- Gastrointestinal Reprogramming (GaRP) technology aimed at restoring and maintaining gut health.

### Active pivotal clinical trial

- GaRP for irritable bowel syndrome** - Human trial commenced; interim results anticipated 1Q CY2023.

### Significant market opportunities

- US\$12.5B market for digestive health products in US.<sup>1,2</sup>
- >US\$1.0B market for irritable bowel syndrome in US.<sup>3</sup>
- >US\$1.0B market for mood and mental health with growth of 30%.<sup>4</sup>

### Significant unmet medical need

- Treatments for IBS/IBD are not effective in controlling symptoms.
- GaRP addresses the underlying factors of gastrointestinal disorders, providing multi-faceted symptomatic relief.

### GaRP Technology to provide pipeline of products

- Potential to apply GaRP to Inflammatory Bowel Disease (IBD), Paediatric applications & Functional Dyspepsia.



# Key Management & Board of Directors

Highly experienced Board & Management



**John Michailidis, COO**

- John is an executive with more than 30 years' of commercial pharmaceutical experience.
- His career has ranged from global franchise and regional executive leadership roles with F. Hoffman - La Roche to CEO experience with emerging biotechs.
- BSc in Genetics from LaTrobe University and exec. business qualifications from Harvard Business School and INSEAD.



**Dr David Brookes, Executive Chair**

- 30+ years international experience in the health and biotechnology industries
- Former Chairman of genomics solutions company, RHS Ltd (ASX: RHS); acquired by PerkinElmer Inc (NYSE:PKI)
- Medical Practitioner, Biotechnology Consultant
- MBBS, FACRRM, FAICD



**Simon Erskine, Chief Development Officer**

- 10+ years international pharmaceutical experience in Australia, Europe, Canada and USA
- Lead roles in product and clinical development, regulatory affairs and quality assurance, including IVD medical devices and molecular diagnostics
- MSc (Biotechnology), BSc (Biochemistry & Pharmacology)



**Sue MacLeman, Non-Executive Director**

- 30+ years pharmaceutical, biotechnology and medical technology experience in corporate, medical, commercial and business development
- Has served as CEO and Board member of several ASX and NASDAQ listed companies
- BPharm, LLM, MMkt, AICD, ATSE



**Dr Jane Ryan, Non-Executive Director**

- 30+ years international experience in the pharmaceutical and biotechnology industries
- VP Product Development & Strategic Marketing and Director of Business Development at Biota Holdings Ltd (Relenza)
- Led multiple successful fundraising campaigns and licensing initiatives including the awarding of a \$230m US Gov contract

## **Board renewal process underway**

- Sue MacLeman has signalled her intention to consider retirement around the time of the AGM
- The Company is considering appropriate potential new board additions

# Active Programs

## Gastrointestinal ReProgramming (GaRP)

GaRP is a multi-component complementary medicine, designed to address the underlying factors associated with chronic gastrointestinal conditions such as IBS and IBD including the homeostasis of the microbiome.

GaRP-IBS trial currently in Stage 1 with interim analysis of initial 90 patients anticipated 1QCY2023 and enrolment anticipated approx. 50% at Nov 2022 following extensive review of criteria & processes.

## ANR-pf

ANR-pf is Anatar's proprietary enriched formulation for poultry in water, designed to allow the full delivery of key additives in a quick and flexible dosing method on-farm. UNE 2021 efficacy ANR-pf positive broiler subclinical NE challenge study.



| Program | Product | Indication                                | Population | Delivery      | Discovery | Pre-Clinical |         | Clinical         |         | Registration | Commercial Rights |
|---------|---------|---|------------|---------------|-----------|--------------|---------|------------------|---------|--------------|-------------------|
|         |         |   |            |               |           | In-Vitro     | In-Vivo | Proof of Concept | Pivotal |              |                   |
| Human   | GaRP    | Irritable bowel syndrome                  | Ages 18-65 | Oral Minitabs | ✓         | ✓            | ✓       | 1Q2023           | 3Q2023  |              | Global            |
| Animal  | ANR-pf  | Subclinical & clinical Necrotic Enteritis | Chicks     | Oral In-water | ✓         | ✓            | ✓       | ✓                |         |              | Global            |



# Human Health

GaRP progressing towards commercialisation



GaRP

## Gastrointestinal ReProgramming (GaRP) technology for 'gut health'

- Active Clinical trial – Irritable Bowel Syndrome
- Commenced Sept 2021; Interim readout 1QCY2023

## Safety Profile

- All components GRAS (generally regarded as safe by FDA)

## Intellectual Property

- Patent pending formulation with functional coatings of synergistic combination of components

## Manufacturing

- GMP clinical batches manufactured and released for clinical trial

## Commercialisation via partnering

- The Company is experiencing in-bound interest regarding the clinical validation of GaRP at interim analysis from Stage 1 GaRP-IBS trial. Ready for discussions with potential global partners with GMP product specifications and stability data .

## Pipeline Indications

- Evaluating new indications for GaRP technologies pipeline – in particular inflammatory bowel disease and paediatric applications.
- KOLs engaged



GaRP

## One product, multiple benefits



Scientifically designed to manage and control background IBS symptoms as well as episodic flare ups



Designed as an everyday option to manage the causes and relieve symptoms of IBS (pain, cramping, gas, bloating, diarrhoea & constipation)



Coated components released to the target areas for effective and sustained relief



Combines natural bromelain extract from pineapple stems in a patent pending formulation with other synergistic coated GRAS components



# Gastrointestinal ReProgramming (GaRP)

A potential breakthrough for gut health



Unique knowledge of bromelain's 'fingerprint'



Ingredients are GRAS



Well-characterised proprietary mix



Synergistic effects



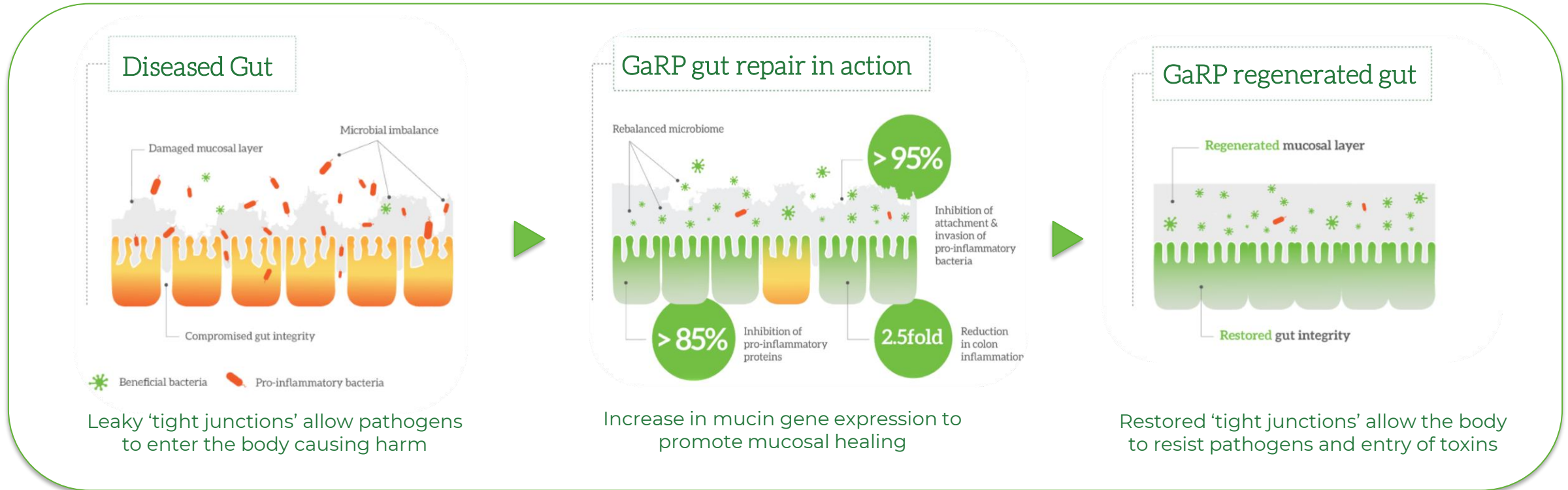
Gut-Brain Connection

|                  | Function within formulation and potential impact on symptoms |  |                                      |   |                                       |                        |                  |                         |  |  |
|------------------|--|--|--------------------------------------|---|---------------------------------------|------------------------|------------------|-------------------------|--|--|
|                  | Inhibitor of attachment / translocation of harmful bacteria  | Restores homeostasis of gut microbiome | Influences metabolites of microbiome | Anti-inflammatory (T-cell & mast cell mediated factors) | Protection and regeneration of mucosa | Reduction of diarrhoea |                  |                         | Modulates visceral sensitivity & intestinal motility | May positively influence gut-brain axis & assist immune pathways |
|                  |  |  |                                      |   |                                       | Inflammation           | Non-inflammatory | Serotonin induced (IBS) |  |  |
| Bromelain        | ✓  | ✓                                      |                                      | ✓   |                                       | ✓                      | ✓                | ✓                       |  |  |
| GARP Formulation | ✓  | ✓                                      | ✓                                    | ✓   | ✓                                     | ✓                      | ✓                | ✓                       | ✓  | ✓  |



# GaRP – Grounded in scientific evidence

GaRP addresses the underlying factors of gastrointestinal disorders



# Snapshot: IBS and IBD

Gastrointestinal disorders are highly prevalent and poorly managed

**IBS affects**

**11%**

**of the global population<sup>6</sup>**

**IBD affects**

**>5m**

**people globally, with accelerating incidence<sup>7</sup>**



## **Debilitating Symptoms**

Patients experience symptoms such as pain, bloating and diarrhoea



## **Limited Treatments**

Pharmacological options remain limited and often **leave patients with poorly controlled symptoms<sup>8</sup>**



## **Frustrated Patients**

**45%** of IBS-D patients agreed with the statement “I’m willing to try anything to help manage my IBS”<sup>9</sup>



## **Patients seek alternative options**

Up to **50%** of IBS/IBD patients use dietary supplements, complementary & alternative medicines<sup>10,11</sup>



## **Doctors recommend supportive treatments**

Health-care practitioners increasingly recommend the use of such supportive treatments<sup>12</sup>



## **Iberogast recommended**

For example, **source of recommended use of Iberogast: Healthcare provider 39.4%**<sup>13</sup>

# Market Opportunity

The gut health market is significant, lacking effective, evidence-based solutions

>US\$12.5 billion spend on OTC and digestive remedies alone <sup>2,3</sup>

>US \$1 billion market in IBS alone <sup>4</sup>

## Probiotic supplements



Align® (P&G) sales  
(USA) 2018:

**US\$172m<sup>4</sup>**

## Gastrointestinal supplements



Iberogast® (Bayer)  
sales (Germany) 2018:

**€136m<sup>4</sup>**

## OTC digestive supplements

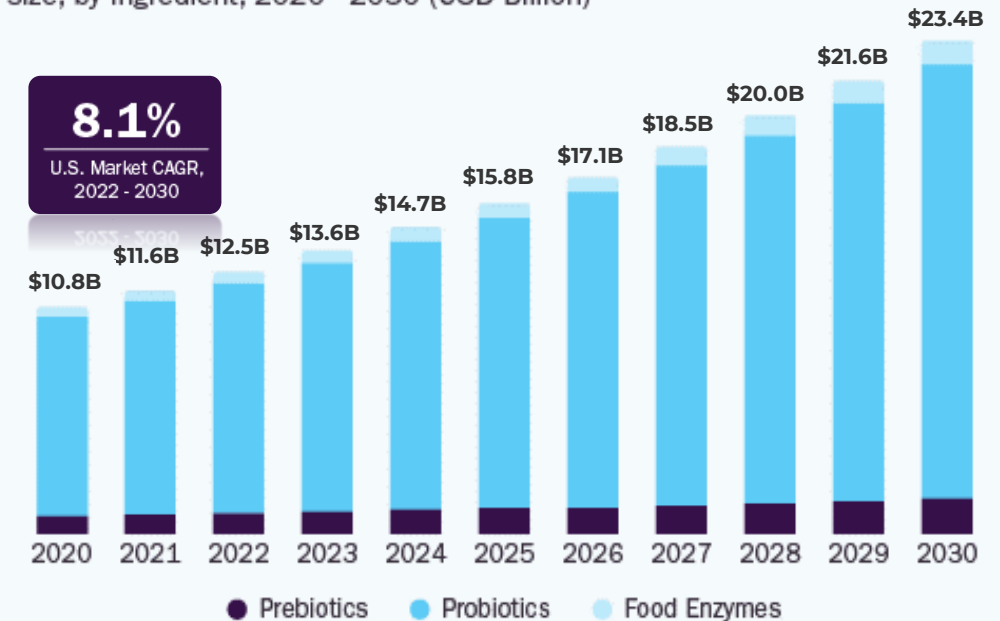


Buscopan® (Sanofi)  
sales (Global) 2020:

**€177m<sup>5</sup>**

## U.S. Digestive Health Products Market

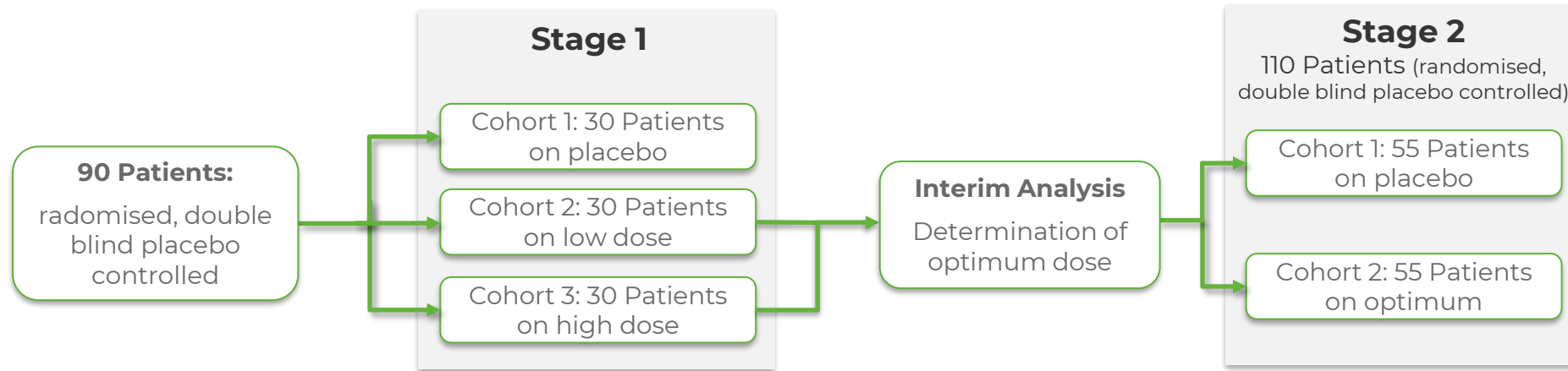
size, by ingredient, 2020 - 2030 (USD Billion)



Source: <https://www.grandviewresearch.com/industry-analysis/digestive-health-products-market>

# Clinical trial – Irritable Bowel Syndrome

Robust clinical trial to validate the effectiveness of GaRP



**Final results readout**  
Trial is sufficiently powered to yield statistically significant result vs placebo

**Title:** Dose Determination and Efficacy Evaluation of the Gastrointestinal ReProgramming (GaRP) Dietary supplement in IBS patients: A Randomized, Double-blind, Placebo controlled virtual clinical trial

**Population:** Males and females 18-65 years of age with irritable bowel syndrome (IBS-SSS score of 175-350 and categorised as IBS on ROME IV criteria), two stages with interim analysis between stages with 90 in stage 1 and 110 in stage 2.

**Key Milestones & Messages:** Recruiting now; Safety expected as GRAS components; Interim readout 1Q2023; study completion 3Q2023.

## Endpoints

- ✓ Treatment-Related Adverse Events
- ✓ Safety markers
- ✓ Change in IBS quality of life (IBS QoL) points compared to baseline
- ✓ Change in IBS-Severity Scoring System between test and placebo groups compared to baseline
- ✓ Stool consistency (IBS) using the Bristol Stool Form Scale
- ✓ IBS Adequate Relief (IBS-AR) compared to baseline
- ✓ Hospital Anxiety and Depression (HAD) Scale comparing to baseline

## Exploratory Endpoints

- ✓ Plasma levels of specific inflammatory markers
- ✓ Changes in WPAI:GI\* compared to baseline
- ✓ Alterations in gut microbiota with respect to diversity, perceived balance and correlation to IBS symptoms including overall wellness



# Advisory Board and DSMB members

Highly accomplished Advisory Board to guide ANR through to commercialisation

Advisory Board members are internationally recognised for their expertise in IBS and IBD with experience ranging from preclinical drug development through to translational research and clinical trials.

The role of the Advisory Board is provide advice on Anantara's research and product development programs in gastrointestinal health.

Members include those pictured; noting the Data Safety Monitoring Board (DSMB) members are Professors Gibson and Rolan and Assoc. Prof. Begun.

Convened 1<sup>st</sup> September 2022 to review progress GaRP trial including inclusion/exclusion criteria and other potential opportunities in GI health.



Dr Tracey  
Brown



Associate Professor  
Rebecca Burgell



Professor  
Simon Keely



Dr Jeremy  
Rosenbaum



Associate Professor  
Jakob Begun



Professor  
Peter Gibson



Professor  
Paul Rolan

# Licensing discussions & portfolio diversification

Progressing licensing discussions with global consumer health companies for GaRP



## Global

Anatara is experiencing inbound interest from global leaders in the GI field due to the strong evidence based design of the GaRP trial.  
Discussions with global pharma companies are ongoing.

## Local

Partnerships with regional leaders in 'gut' health to leverage local knowledge in registration and marketing of consumer health products and establishing market position and infrastructure.

### Partnership Opportunity: Interim Results

Potential for an earlier partnership if interim results for GaRP IBS study, anticipated in 1Q2023, indicate a strong trend towards a statistically significant benefit.

### Partnership Opportunity: Post Trial

Following the anticipated completion of our IBS human trial in 3Q2023, Anatara expects to be in a strong position to announce a commercial partnership.

**GaRP trial powered for significance**

**Revenue anticipated within 12 months from licensing**



# Animal Health

Progressing towards commercialisation



## Detach®, ANR-pf and BONIFF

- Orally administered, non-antibiotic products. Know how for products with extracts from pineapple stems for potential delivery in water or on feed mix.
- Unlike antibiotics and zinc oxide, will not contribute to antimicrobial resistance.

## Transition away from zinc oxide

- Medicinal use of zinc oxide has recently been banned in EU (June 2022<sup>19</sup>); indications others to follow (recent announcements in Canada<sup>20</sup> and Chile<sup>21</sup>).
- More than one-third of UK pig farmers are still routinely using zinc oxide in pigs after weaning, and 60% have no plan in place for when it is banned in 2022.<sup>22</sup>

## Validation Trials

- Poultry trials conducted with a leading Australian producer using ANR-pf (poultry) in broilers (chickens for meat production). This most recent trial delivered mixed results that suggested to both parties that a commercial product pathway requires further investigation. (UNE Jan 2021 positive study on efficacy ANR-pf performance broilers subject subclinical NE challenge).
- Murdoch University June 2021 trial report: Pigs fed the BONIFF-SMEC diet performed similarly to pigs fed the SMEC (semi-moist extruded creep transition feed) only diet comprising commercially relevant levels of ZnO and organic acids and phytogenic product.

**Actively discussing with producers and animal feed/nutrition companies**

<sup>19</sup> <https://www.ema.europa.eu/en/medicines/veterinary/referrals/zinc-oxide#:~:text=What%20is%20zinc%20oxide%3F,post%2Dweaning%20diarrhoea%20in%20pigs>

<sup>20</sup> [https://www.pigprogress.net/Piglets/Articles/2021/8/Canada-follows-the-EU-with-zinc-oxide-777113E/?utm\\_source=tripolis&utm\\_medium=email&utm\\_term=&utm\\_content=&utm\\_campaign=pig\\_progress](https://www.pigprogress.net/Piglets/Articles/2021/8/Canada-follows-the-EU-with-zinc-oxide-777113E/?utm_source=tripolis&utm_medium=email&utm_term=&utm_content=&utm_campaign=pig_progress)

<sup>21</sup> [https://www.pigprogress.net/World-of-Pigs1/Articles/2021/1/Chiles-meat-sector-deal-for-antibiotics-usage-697251E/?utm\\_source=tripolis&utm\\_medium=email&utm\\_term=&utm\\_content=&utm\\_campaign=pig\\_progress](https://www.pigprogress.net/World-of-Pigs1/Articles/2021/1/Chiles-meat-sector-deal-for-antibiotics-usage-697251E/?utm_source=tripolis&utm_medium=email&utm_term=&utm_content=&utm_campaign=pig_progress)

<sup>22</sup> <https://www.fwi.co.uk/livestock/pigs/survey-highlights-pig-health-worry-ahead-of-zinc-oxide-ban>



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### Investor Relations

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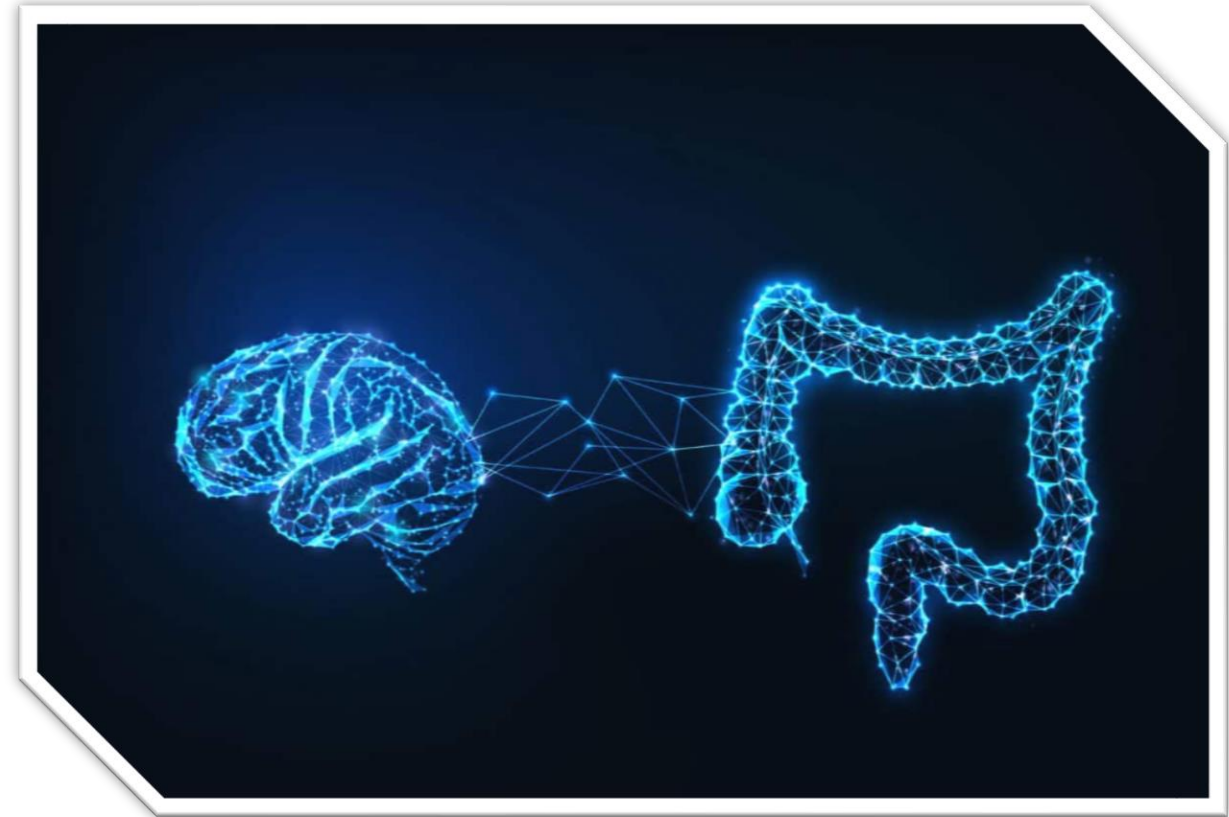
# Glossary

|                  |   |
|------------------|---|
| <b>IBS</b>       | Irritable bowel syndrome (IBS) is a complex condition that affects the colon (large bowel). Key symptoms include abdominal pain or discomfort, stomach bloating, chronic diarrhoea or constipation, or alternating between the two.   |
| <b>IBD</b>       | Inflammatory bowel diseases are conditions in which the lining of the digestive tract becomes inflamed and damaged. The two common types of inflammatory bowel disease are Ulcerative Colitis and Crohn's Disease. The most common symptoms of inflammatory bowel disease are: diarrhoea, often including blood or mucous, abdominal pain, loss of appetite, tiredness, fever, weight loss.   |
| <b>ANR-pf</b>    | Anatara's proprietary enriched formulation for poultry in water, designed to allow the full delivery of key additives in a quick flexible dosing method on-farm even when stock illness is a concern.   |
| <b>Bromelain</b> | Bromelain is a mixture of proteases extracted from pineapple stems. Specific proteases within Bromelain have anti-attachment, anti-secretory and anti-inflammatory activity. Collectively, these proteases provide a broad spectrum of activity by preventing the diarrhoea-causing organism from attaching to the small intestine and also by blocking inflammation and the secretory action of toxins.  |
| <b>BONIFF</b>    | Anatara's recently developed in-feed bromelain-based formulation for weaner piglets.  |
| <b>GaRP</b>      | <b>G</b> astrointestinal <b>ReP</b> rogramming. Anatara's GaRP product is a multi-component complementary medicine that has been designed to address the primary underlying factors associated with chronic gastrointestinal conditions such as IBS and IBD. There are 5 components of which 2 components are enteric coated for release in the upper intestinal tract and the other 3 ( see "3FDC") components have additional coating for release further on. |
| <b>3FDC</b>      | The 3 components of the overall GaRP combination of ingredients coated for targeted release predominantly beyond the ileocecal junction (boundary of the small and large intestines). The coated delivery of these 3FDC components to the large intestine is considered important for gut-brain axis balance , in part due to influences on microbiome homeostasis and metabolites.   |
| <b>GMP</b>       | Good Manufacturing Practice. GMP describes a set of principles and procedures that when followed helps ensure that therapeutic goods are of high quality.   |
| <b>GRAS</b>      | Generally Recognised as Safe. A GRAS ingredient is an ingredient that has undergone safety evaluations by experts and has been proven not to cause harm when used as intended.  |

# What is the gut-brain connection? <sup>23</sup>

Pathways between the gut microbiota and the brain, featuring a range of gut molecules

- Researchers at Flinders University have released new findings that illustrate how the gut's cells work in tandem with the spinal cord and brain, in turn influencing people's cognitive and emotional behaviours.
- "The gut-brain axis consists of bidirectional communication between the brain and the gut, which links emotional and cognitive centres of the brain with peripheral intestinal functions," Professor Nick Spencer explained.
- "Recent advances in research have described the importance of gut microbiota in influencing these pathways but we had yet to uncover how the communication was working.
- "This has not been possible, until now, because there were so many other types of nerves also present in the gut – it's like finding a needle in a haystack."

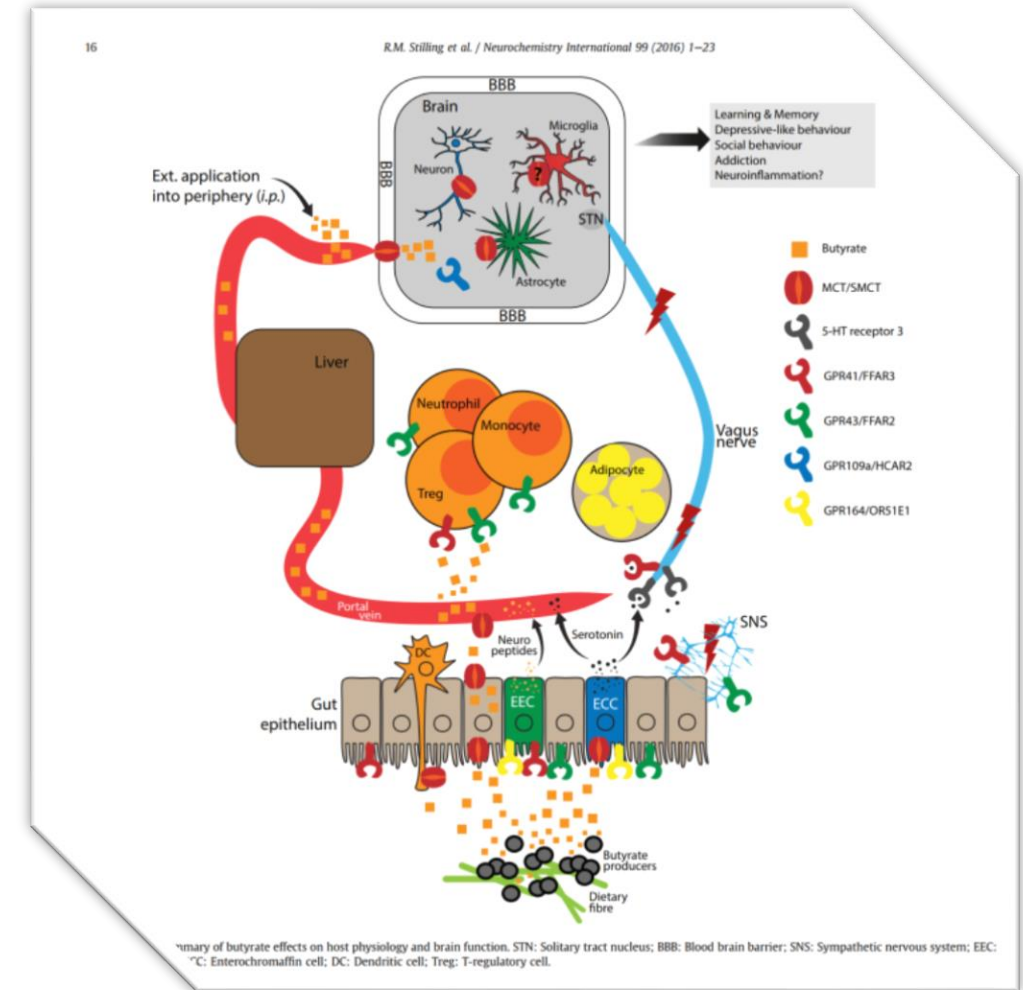


<sup>23</sup> The gut-brain axis: spatial relationship between spinal afferent nerves and 5-HT-containing enterochromaffin cells in mucosa of mouse colon  
Kelsi N. Dodds, Lee Travis, Melinda A. Kyloh, Lauren A. Jones, Damien J. Keating, and Nick J. Spencer  
American Journal of Physiology-Gastrointestinal and Liver Physiology 2022 322:5, G523-G533

# What is the gut-brain connection?

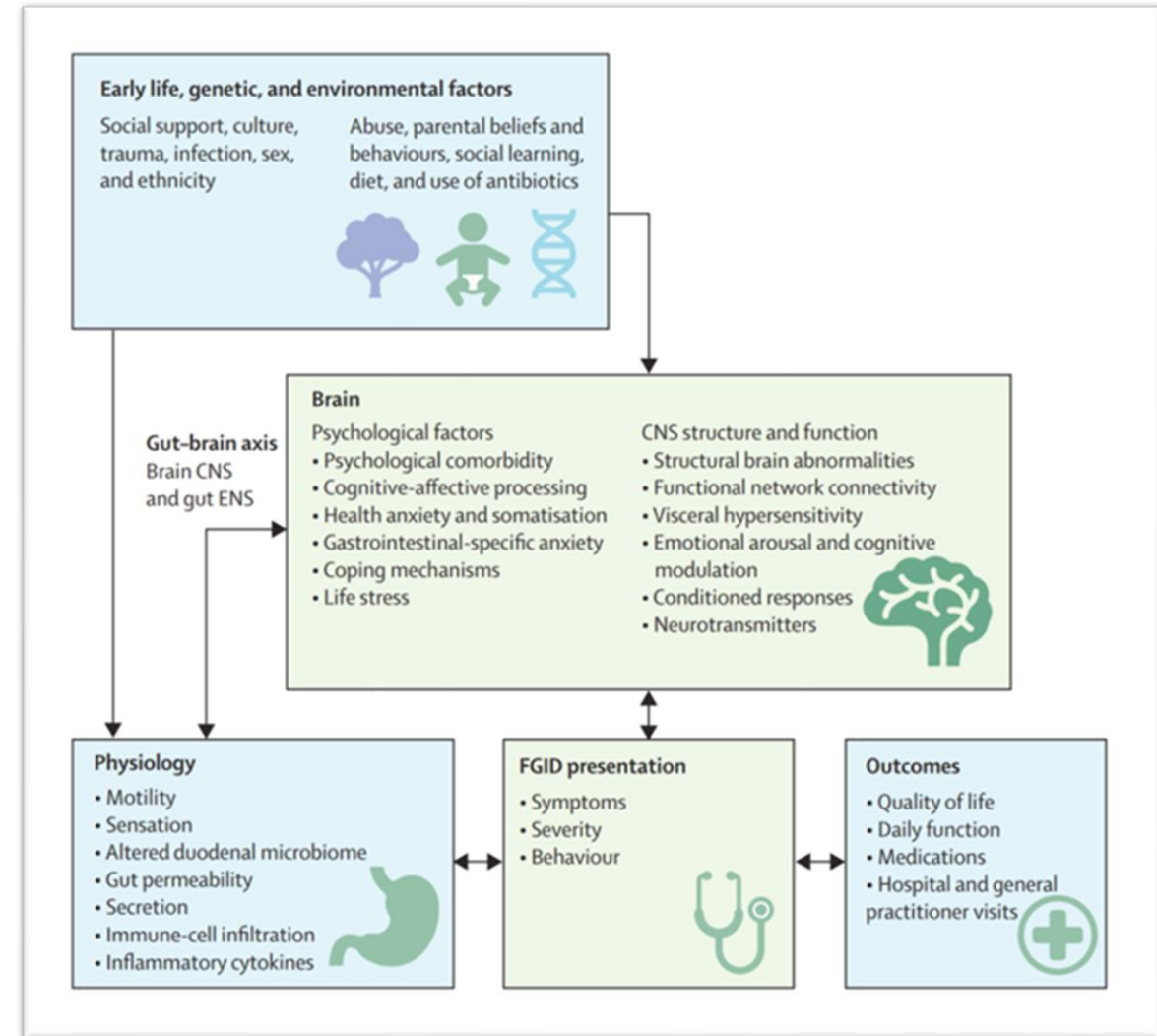
Pathways between the gut microbiota and the brain, featuring a range of gut molecules

- The gastrointestinal system offers an integrated interface for regulation of various body functions in health and disease.
- The lining of the gut, known as the epithelium, is also the first line of defence against pathogens taken up with the diet. Due to the mutualistic nature of the majority of microbes in the gut, the gut epithelium is also the primary interface for host-microbe crosstalk on all levels of interaction.
- The immune system is trained and regulated by the presence of harmful and beneficial microbes, and products (incl. metabolites).
- Other than the vagus nerve involvement, any gut-brain interaction needs to cross at least two barriers (i.e. the gut epithelium and the blood brain barrier) and permeability through both of these barriers has been shown to be affected by the microbiome.



<sup>24</sup> Stilling RM, van de Wouw M, Clarke G, Stanton C, Dinan TG, Cryan JF. The neuropharmacology of butyrate: The bread and butter of the microbiota-gut-brain axis? *Neurochem Int.* 2016 Oct;99:110-132. doi: 10.1016/j.neuint.2016.06.011. Epub 2016 Jun 23. PMID: 27346602.

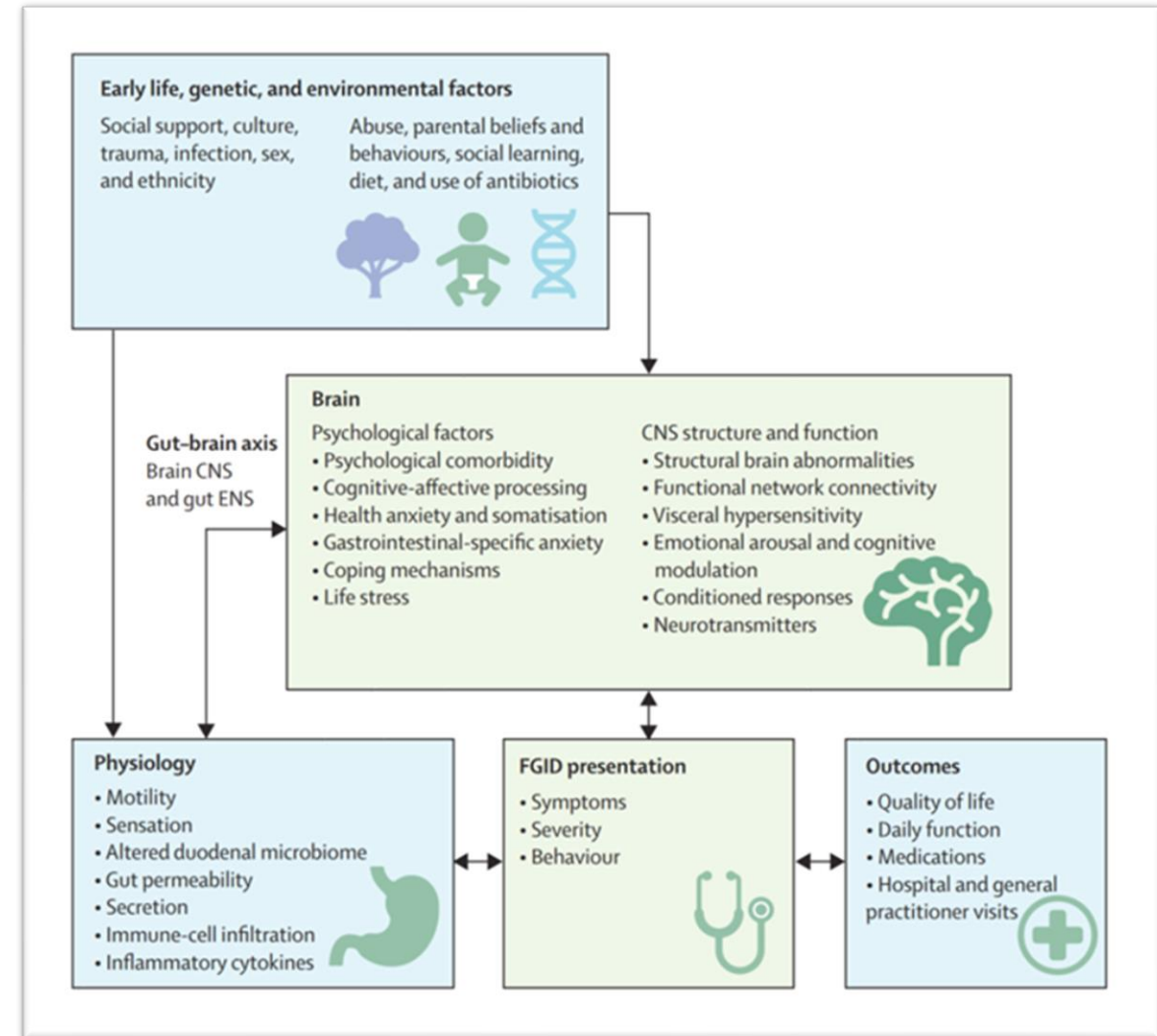
- By definition, no structural abnormalities explain Functional Gastrointestinal Disorders (FGIDs) and, on the basis of the biopsychosocial model developed by Engel <sup>34</sup> and adapted by Drossman,<sup>35,36</sup> they are characterised as complex bidirectional dysregulations of gut-brain interaction, via the gut-brain axis, rather than diseases. FGIDs include IBS, dyspepsia, functional bloating etc.
- Visceral hypersensitivity, abnormal gastrointestinal motility, and psychological disturbances have been recognised to contribute to the pathogenesis of FGIDs for decades, but more recently low-grade intestinal inflammation, increased intestinal permeability, immune activation, and disturbances in the microbiome have been identified, challenging the idea that structural changes are absent entirely.<sup>37,38</sup>
- The biopsychosocial model articulates illness as holistic and multifactorial, and emphasises the existence of an intimate mind-body connection, facilitated by bidirectional communication between the brain and the gut in FGIDs, which is well accepted.<sup>34,35,40</sup>
- Emerging data challenge the concept that gut-brain pathways act similarly in all patients with FGIDs. Independent epidemiological studies<sup>43-45</sup> suggest that in 50% of cases, FGIDs begin with psychological distress, followed later by gastrointestinal symptoms, whereas in the other 50% of cases gut dysfunction occurs first, and psychological distress follows later.



<sup>25</sup>- Christopher J Black, Douglas A Drossman, Nicholas J Talley, Johannah Ruddy, Alexander C Ford. Functional gastrointestinal disorders: advances in understanding and management. Lancet 2020; 396: 1664–74  
Published Online October 10, 2020 [https://doi.org/10.1016/S0140-6736\(20\)32115-2](https://doi.org/10.1016/S0140-6736(20)32115-2); references in the slide text are in the next slide



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<sup>25</sup>. Christopher J Black, Douglas A Drossman, Nicholas J Talley, Johannah Ruddy, Alexander C Ford. Functional gastrointestinal disorders: advances in understanding and management. *Lancet* 2020; 396: 1664–74  
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