

IPA producing microbes

Marker Guide

What this marker measures

The microbial community's capacity to produce 3-indolepropionic acid (IPA), a tryptophan-derived metabolite. IPA may support intestinal barrier integrity, immune regulation, and control of intestinal inflammation¹⁻⁴, and has been associated with lower systemic inflammatory markers⁵⁻⁸.

Clinical associations

Consider this marker when your patient presents with:

Gut barrier concerns

Suspected increased intestinal permeability or gut barrier dysfunction

Intestinal or systemic inflammation

Chronic intestinal inflammation, IBD-type presentations, or low-grade systemic inflammation where tryptophan metabolites may contribute

Metabolic presentations

Type 2 diabetes, metabolic syndrome, insulin resistance

GI functional presentations

IBS-type symptoms where altered barrier or immune signalling may be relevant

Interpreting the result

All results are compared to Microba's healthy cohort to determine whether they fall within or outside the expected range.

LOW

IPA-producing potential is lower than expected

May indicate reduced capacity to support gut barrier integrity, immune regulation, and anti-inflammatory signalling.

Action: see patient management insights below

WITHIN RANGE

IPA-producing potential is within expected parameters

This suggests microbial capacity to support gut barrier and immune-regulatory pathways.

HIGH






IPA-producing potential is higher than expected

Usually favourable in isolation and may reflect stronger capacity to support gut barrier integrity and immune regulation. Interpret alongside symptoms, diet, and broader microbiome context

Patient management insights

Increase IPA production through dietary strategies

DIETARY STRATEGIES

- Inclusion of 3 serves per day of polyphenol-rich foods may increase fasting serum IPA in older adults⁵. 
- A Mediterranean diet may increase plasma IPA^{9,10}. 
- Foods rich in ellagic acid (e.g. pomegranate juice, chestnuts) may maintain plasma IPA levels¹¹. 
- Observational studies show an association between intake of wholegrain wheat and rye and higher plasma IPA⁸. (Observational data only)  



Tips for patients discussion

Your report suggests a reduced capacity to produce IPA, a beneficial compound that helps support the gut lining and regulate inflammation. Eating more polyphenol- and fibre-rich foods such as berries, pomegranate, legumes, and wholegrains — may help support these microbes

The community

IPA is not produced by a single species, it's a community-level function. Below are some of the most common, though this list is not exhaustive.

<i>Acidaminococcus fermentans</i>	CAG-83 MIC6888	CAG-83 MIC7172
CAG-83 MIC7389	CAG-83 MIC7830	CAG-83 MIC8701
CAG-83 MIC8848	CAG-83 MIC9166	CAG-83 MIC9279
CAG-83 sp000435555	CAG-83 sp003487665	<i>Clostridium_M</i> MIC7663
<i>Fusobacterium animalis</i>	<i>Fusobacterium_C gonidiaformans</i>	<i>Mogibacterium diversum</i>
<i>Mogibacterium</i> sp002299625	<i>Mogibacterium</i> sp900315625	<i>Peptostreptococcus anaerobius</i>
<i>Peptostreptococcus</i> sp000758885	UBA5446 MIC8728	UBA9502 MIC6887
UBA9502 MIC7149	UBA9502 MIC9781	UBA9502 MIC9805

How results are calculated

All microbiome marker results are compared against the Microba Healthy Cohort — a purpose-built group of more than 450 healthy individuals, with samples collected and analysed using the same workflow as patient samples.

Each marker is scored by comparing the patient's relative abundance against the cohort average. The distance from this average is expressed as standard deviations, and determines whether a result is classified as Low, Borderline, or High.

How the result scale works



The patient's relative abundance is compared to the Healthy Cohort average. A **negative** distance from average means the microbial group is less abundant than the Healthy Cohort. A **positive** distance means it is more abundant. Results falling outside the expected range are classified as borderline or high/low (borderline high/low: +/-0.68, and high/low: +/-1.28).

GRADE DESCRIPTION

A	Body of evidence can be trusted to guide practice
B	Body of evidence can be trusted to guide practice in most situations
C	Body of evidence provides some support for recommendation, but care should be taken in its application
D	Body of evidence is weak, and recommendation must be applied with caution
PP H	Body of evidence is observational only and must be applied with caution
PP IV	Body of evidence is in vitro and must be applied with a high degree of caution

Evidence grading for patient management insights

The letter grades shown next to each patient management insight show the quality of the research behind it. Every insight provided has been through a rigorous review of the scientific literature and graded using the NHMRC Levels of Evidence, so you can see exactly how strong the evidence is before applying it in practice.