

Mucin degrading microbes

Marker Guide

What this marker measures

The collective capacity of the microbial community to degrade mucin, the glycoproteins that help form the protective mucus layer lining the gut. Some mucin degradation is normal and may support microbial cross-feeding, but elevated mucin-degrading potential may contribute to mucus layer thinning, reduced gut barrier integrity, and intestinal inflammation, particularly when dietary fibre intake is low¹⁻³.

Clinical associations

Consider this marker when your patient presents with:

Gut barrier concerns

Suspected increased intestinal permeability, mucus layer disruption, or impaired gut barrier function

GI symptoms

Diarrhoea, loose stools, abdominal pain, urgency.

Intestinal inflammation and mucosal health

IBD-type presentation, elevated calprotectin, or chronic intestinal inflammation where mucus barrier disruption 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

Mucin-degrading potential is lower than expected

This result does not suggest excess microbial pressure on the mucus layer. No intervention needed for this marker.

WITHIN RANGE

Mucin-degrading potential is within expected parameters

This suggests mucin degradation is not elevated and is unlikely to be compromising the mucus barrier.

HIGH

Mucin-degrading potential is higher than expected

May indicate increased pressure on the mucus layer and may be relevant in intestinal inflammation, impaired mucus barrier integrity. Action: see patient management insights below

Patient management insights

Reduce excess mucin-degrading potential and support mucus layer and gut barrier integrity.

DIETARY STRATEGIES

- A high fibre diet may reduce mucin-degrading microbes^{4,5}



Tips for patients discussion

Your report shows elevated levels of microbes that can use the gut's protective mucus layer as a food source. This layer acts as a first line of defence for your intestinal wall. Increasing tolerated dietary fibre can help shift microbial activity toward fibre fermentation and support gut barrier integrity

The community

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

<i>Agathobacter faecis</i>	<i>Alistipes obesi</i>	<i>Alistipes onderdonkii</i>
<i>Alistipes shahii</i>	<i>Bacteroides caccae</i>	<i>Bacteroides ovatus</i>
<i>Bacteroides thetaiotaomicron</i>	<i>Bacteroides uniformis</i>	<i>Bacteroides_B vulgatus</i>
<i>Blautia_A sp9000666165</i>	<i>CAG-41 sp900066215</i>	<i>Barnesiella intestinihominis</i>
<i>CAG-56 sp900066615</i>	<i>Odoribacter splanchnicus</i>	<i>Roseburia hominis</i>
<i>Fusicatenibacter saccharivorans</i>	<i>GCA-900066135 MIC6659</i>	<i>Roseburia inulinivorans</i>
<i>Ruminococcus_A sp003011855</i>	<i>KLE1615 sp900066985</i>	<i>Parabacteroides distasonis</i>
<i>Bacteroides_B dorei</i>	<i>Parabacteroides merdae</i>	<i>UBA7160 MIC9207</i>

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.