microba

Beta-glucuronidase producing microbes
Marker Guide

What this marker measures

The collective capacity of the microbial community to produce beta-glucuronidase, a bacterial enzyme that reverses glucuronidation, a Phase II detoxification process in the liver. This may reduce elimination of some medications, hormones, and environmental toxins, potentially increasing enterohepatic recirculation and re-exposure[1–5].

Clinical associations

Consider this marker when your patient presents with:

Hormonal presentations

PCOS, irregular periods, menopausal symptoms, or other oestrogen-related concerns where altered hormone recirculation may be relevant.

Medication handling concerns

Drug sensitivities, medication side effects, or concerns relating to glucuronidated medications. (e.g. NSAIDs, opioids, benzodiazepines, hormones, some anticancer drugs, etc.)[1]

Bilirubin handling concerns

Unconjugated hyperbilirubinaemia or Gilbert syndrome where altered bilirubin clearance may be relevant; interpret alongside liver function tests and clinical context.

Interpreting the result

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

LOW

Beta-glucuronidase-producing potential is lower than expected

Microbial deconjugation of glucuronidated compounds is unlikely to be elevated. No intervention needed for this marker.

WITHIN RANGE

Beta-glucuronidase-producing potential is within expected parameters

This suggests microbial deconjugation capacity is not elevated. Interpret alongside symptoms, medications, hormones, and other markers. Maintain dietary diversity.

HIGH

Beta-glucuronidase-producing potential is higher than expected

May increase microbial deconjugation and recirculation of some hormones, medications, and xenobiotics. Action: see Patient Management Insights guidance below.

Patient management insights

Reduce excess microbial beta-glucuronidase potential and support detoxification.

DIETARY STRATEGIES

- Dietary fibre may reduce faecal beta-glucuronidase activity[6,7] D

SUPPLEMENTATION PREBIOTIC

- Glucomannan supplementation may reduce faecal beta-glucuronidase activity[8] C
- Inulin supplementation may reduce faecal beta-glucuronidase activity[9,10] C
- High-dose GOS (galacto-oligosaccharides) supplementation may reduce faecal beta-glucuronidase activity. [11] D

SUPPLEMENTATION PROBIOTIC

- *Lactobacillus acidophilus* LA-N2/NCFM or NCFB 1748/NCIMB 701748 may reduce beta-glucuronidase activity. [12,13] D

Tips for patients discussion

Your report shows elevated levels of gut microbes that can produce beta-glucuronidase, an enzyme that may allow some hormones, medications, and other compounds to be recycled in the gut instead of being eliminated. Increasing dietary fibre and specific prebiotic foods may help support a healthier balance.

The community

Beta-glucuronidase 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.

Acetatifactor sp900066565	*Alistipes obesi*	*Alistipes onderdonkii*
Alistipes putredinis	*Alistipes shahii*	*Bacteroides ovatus*
Bacteroides thetaiotaomicron	*Bacteroides uniformis*	*Bacteroides_B vulgatus*
Barnesiella intestinihominis	*Blautia_A sp900066165*	*CAG-41 sp900066215*
Faecalibacterium MIC7145	*Faecalibacterium MIC7145*	*Faecalibacterium prausnitzii_C*
Faecalibacterium prausnitzii_D	*Faecalibacterium prausnitzii_G*	*Fusicatenibacter saccharivorans*
GCA-900066135 MIC6659	*Gemmiger formicilis*	*Gemmiger sp003476825*
KLE1615 sp900066985	*Parabacteroides distasonis*	*Parabacteroides merdae*
UBA1417 sp003531055	*UBA7160 MIC9207*	

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

▲ AVG (Healthy Cohort average)

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.

Access references