# Table S1
# Bioinformatics performance of the preliminary clinical target list

The 46 targets identified from literature and available clinical tests comprise 15 genera and 31 species. The bioinformatics pipeline for accurate detection of the maximum number of targets is optimized based on the performance metrics Sensitivity, Specificity, Precision and Negative Predictive Value (NPV) as determined with a manually curated amplicon database (described in Doc S1). The metrics are calculated based on the number of true positives (TP), true negatives (TN), false positives (FP) and false negatives (FN) as follows:
specificity = TN / (TN + FP)
sensitivity = TP / (TP + FN)
precision = TP / (TP + FP)
negative predictive value (NPV) = TN / (TN + FN)

## Genera

values in red are below our cut-off of 90%

| Target | Sensitivity | Specificity | Precision | NPV |
|---|---|---|---|---|
| *Alistipes* | 98.74 | 100.00 | 99.55 | 100.00 |
| *Barnesiella* | 99.32 | 100.00 | 99.73 | 100.00 |
| *Bifidobacterium* | 97.76 | 100.00 | 99.93 | 100.00 |
| *Campylobacter* | 98.60 | 100.00 | 99.90 | 100.00 |
| *Clostridium* | 93.05 | 100.00 | 96.58 | 99.99 |
| *Escherichia / Shigella* | 98.06 | 99.99 | 98.91 | 99.98 |
| *Fusobacterium* | 98.02 | 100.00 | 99.59 | 99.99 |
| *Lactobacillus* | 98.02 | 99.98 | 98.45 | 99.97 |
| *Odoribacter* | 98.87 | 100.00 | 99.86 | 100.00 |
| *Prevotella* | 98.63 | 100.00 | 99.88 | 100.00 |
| *Pseudoflavonifractor* | 15.38 | 100.00 | 100.00 | 100.00 |
| *Roseburia* | 91.34 | 99.97 | 91.85 | 99.97 |
| *Ruminococcus* | 94.97 | 99.99 | 95.45 | 99.99 |
| *Salmonella* | 97.09 | 100.00 | 98.69 | 100.00 |
| *Veillonella* | 99.07 | 100.00 | 99.97 | 100.00 |

# Species

| Target | Sensitivity | Specificity | Precision | NPV |
|---|---|---|---|---|
| *Akkermansia muciniphila* | 100.00 | 100.00 | 100.00 | 100.00 |
| *Anaerotruncus colihominis* | 100.00 | 100.00 | 100.00 | 100.00 |
| *Bacteroides fragilis* | 97.32 | 99.99 | 99.60 | 99.99 |
| *Bacteroides vulgatus* | 8.82 | 100.00 | 100.00 | 99.99 |
| *Bifidobacterium longum* | 10.11 | 100.00 | 100.00 | 99.99 |
| *Butyrivibrio crossotus* | 100.00 | 100.00 | 100.00 | 100.00 |
| *Campylobacter jejuni* | 6.73 | 100.00 | 100.00 | 99.97 |
| *Campylobacter coli* | 18.30 | 99.99 | 92.85 | 99.99 |
| *Campylobacter lari* | 7.93 | 100.00 | 100.00 | 99.99 |
| *Clostridium difficile* | 98.42 | 100.00 | 100.00 | 99.99 |
| *Collinsella aerofaciens* | 99.54 | 99.99 | 97.74 | 99.99 |
| *Coprococcus eutactus* | 50.00 | 100.00 | 100.00 | 99.99 |
| *Desulfovibrio piger* | 100.00 | 100.00 | 100.00 | 100.00 |
| *Dialister invisus* | 100.00 | 99.99 | 90.00 | 100.00 |
| *Escherichia coli* | 99.40 | 99.93 | 88.72 | 99.99 |
| *Escherichia coli O157* | 3.18 | 99.99 | 53.84 | 99.98 |
| *Faecalibacterium prausnitzii* | 16.66 | 100.00 | 100.00 | 99.99 |
| *Methanobrevibacter smithii* | 100.00 | 100.00 | 100.00 | 100.00 |
| *Oxalobacter formigenes* | 100.00 | 100.00 | 100.00 | 100.00 |
| *Ruminococcus albus* | 100.00 | 100.00 | 100.00 | 100.00 |
| *Ruminococcus bromii* | 20.00 | 100.00 | 100.00 | 99.99 |
| *Ruminococcus gnavus* | 20.00 | 99.99 | 66.66 | 99.99 |
| *Salmonella enterica* | 98.99 | 99.99 | 99.84 | 99.99 |
| *Salmonella bongori* | 4.16 | 100.00 | 100.00 | 99.99 |
| *Shigella boydii* | 14.46 | 99.99 | 30.26 | 99.99 |
| *Shigella sonnei* | 35.06 | 99.99 | 72.00 | 99.99 |
| *Shigella flexneri* | 12.03 | 99.99 | 35.25 | 99.97 |
| *Shigella dysenteriae* | 49.35 | 99.99 | 60.31 | 99.99 |
| *Streptococcus sanguinis* | 93.25 | 100.00 | 100.00 | 99.99 |
| *Streptococcus thermophilus* | 8.69 | 100.00 | 100.00 | 99.99 |
| *Vibrio cholerae* | 98.84 | 99.99 | 96.79 | 99.99 |
| *Yersinia enterocolitica* | 8.18 | 99.99 | 63.63 | 99.99 |