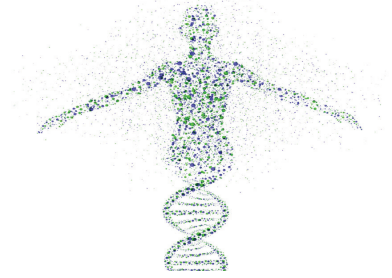


Ion AmpliSeq Microbiome Health Research Kit



Introducing the Ion AmpliSeq™ Microbiome Health Research Kit—a next-generation sequencing (NGS) assay that allows for cost-effective yet comprehensive profiling of microbial diversity in the human gut microbiome. This new assay offers increased resolution and specificity of species-level detection compared with traditional 16S rRNA sequencing for key organisms associated with cancer, immunological, and gastrointestinal (GI) disorder research.

Currently, most 16S panels target only 2–4 hypervariable (HV) regions of the 16S rRNA gene, while the panel included in the Ion AmpliSeq Microbiome Health Research Kit targets 8 out of the 9 HV regions for highly comprehensive and sensitive microbial profiling.

Combined with a set of high-resolution markers for increased species-level identification and fully integrated data analysis tools, a complete end-to-end solution is available to help simplify your research.

- **Targeted sequencing**—with comprehensive content that has 100% sensitivity and specificity at a species level at standard thresholds
- **Panel targeting 8 out of 9 HV regions**—the most comprehensive 16S rRNA gene panel
- **Species-level resolution**—detection of 73 key bacterial species associated with research in immuno-oncology as well as immunological and GI disorders

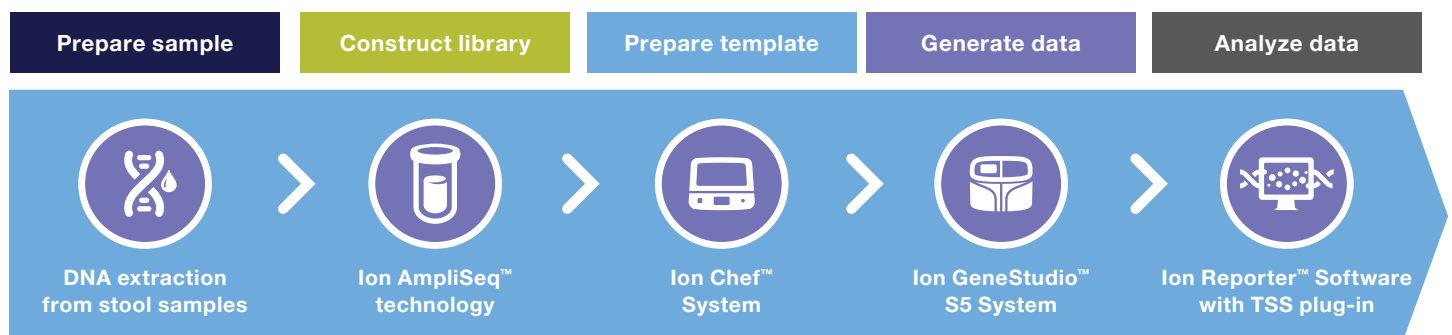


Figure 1. Workflow using the Ion AmpliSeq Microbiome Health Research Kit.

While shotgun metagenomics offers higher functional resolution, it comes at a higher cost and takes more time. The Ion AmpliSeq panel offers a cost-effective solution with species-level specificity for immuno-oncology and key gut-related disorders as well as autoimmune diseases (Figure 2). This highly curated species-specific panel allows for 100% specificity and sensitivity.

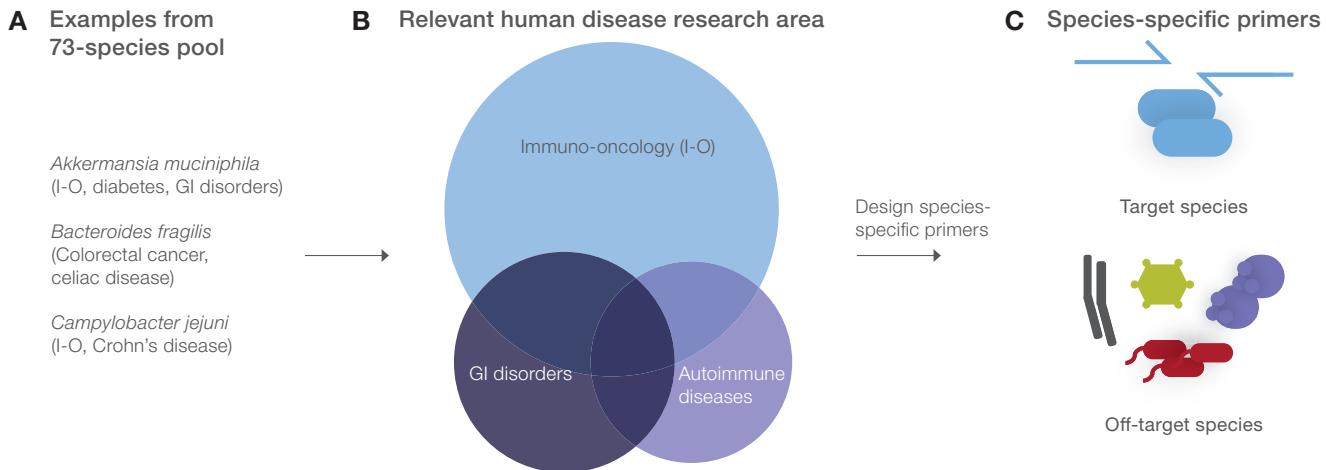


Figure 2. Target species pool for species relevant to human disease research. (A) To increase assay sensitivity and specificity to key species in human health, we selected 73 species from the literature [1–3] pertinent to research areas including **(B)** immuno-oncology (I-O), GI disorders, and autoimmune diseases. **(C)** We generated our target species pool using proprietary software to identify unique genomic targets and primers for the relevant species, resulting in a highly specific panel.

The Ion AmpliSeq Microbiome Health Research Kit also offers a complete end-to-end solution with an Ion AmpliSeq™ Microbiome Health Analysis plug-in within Torrent Suite™ Software. An analysis tool within Ion Reporter Software that is optimized for microbiome health research allows for multisample analysis, and will have additional visualization options available later in 2020.

Ordering information

Product	Quantity	Cat. No.
Ion AmpliSeq Microbiome Health Research Kit, Ion 540 Bundle Includes: • Ion AmpliSeq Microbiome Health Kit • Ion 540 Chip Kit	Up to 64 paired libraries (32 samples) can be combined and loaded onto a single Ion 540 Chip in a single workflow.	A46496

References

- Routy B et al. (2018) Gut microbiome influences efficacy of PD-1–based immunotherapy against epithelial tumors. *Science* 359:91-97.
- Matson V et al. (2018) The commensal microbiome is associated with anti-PD-1 efficacy in metastatic melanoma patients. *Science* 359:104-108.
- Gopalakrishnan V et al. (2018) Gut microbiome modulates response to anti-PD-1 immunotherapy in melanoma patients. *Science* 359:97–103.

Find out more at thermofisher.com/ngsmicrobiome