

Environmental analysis

# Secrets of soil health with advanced microbial analysis

## Microbes: The key to soil health

Microbe-based metrics are essential indicators of soil vitality. By focusing on these metrics, we can gain valuable insights into biological activity, nutrient cycling, and overall soil health.

### Microbial metrics matter:

- **Crucial functions**—microbes are key to a favorable environment for plant growth
- **Complex ecosystem**—soil operates as a dynamic system, sustained by microbial interactions
- **Environmental impact**—understanding soil microbiomes is essential for ecological balance and environmental health
- **Dynamic interactions**—investigate the ever-changing dynamics within soil microbial communities to enable better soil management

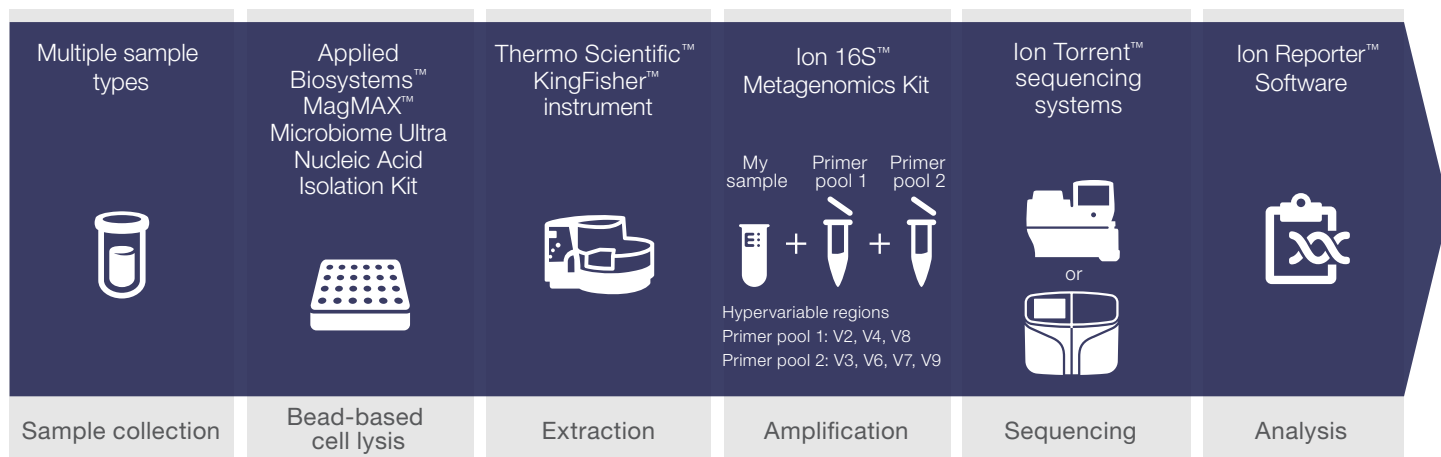
## Ensure healthy and productive soil

Our advanced soil microbiome analysis tools help you measure and understand crucial microbial processes, helping ensure your soil remains healthy and productive. Discover the vital role of soil biodiversity in supporting and regulating soil processes for a thriving ecosystem.

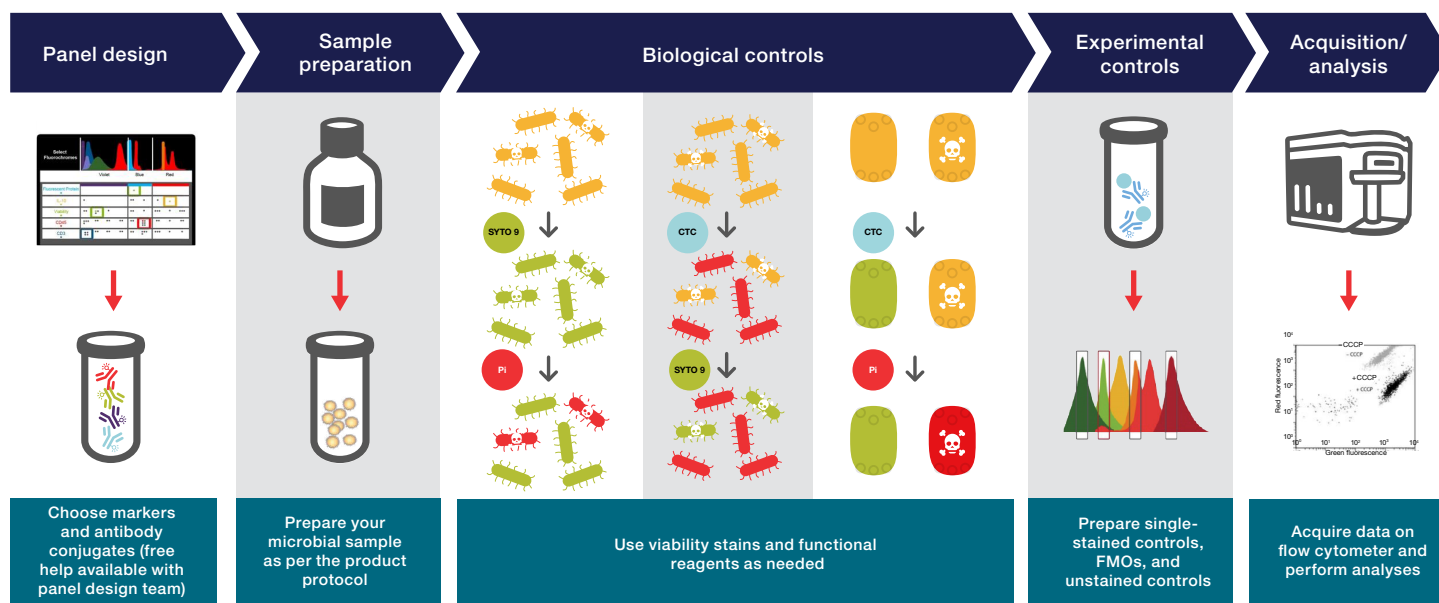
### Our advanced microbe analysis tools use:

- **Molecular techniques**—using metagenomics and amplicon sequencing (e.g., 16S or ITS target sequencing) to characterize microbial communities, including their abundance, diversity, and composition
- **Flow cytometry**—rapidly analyzing single cells to assess phenotypic diversity and microbial dynamics

## Molecular microbiome end-to-end workflow



## Flow cytometry workflow for soil bacterial analysis:



## Ordering information for molecular workflow products

Product	Quantity	Cat. No.
KingFisher instruments for nucleic acid isolation*	Learn more at <a href="https://thermofisher.com/kingfisher">thermofisher.com/kingfisher</a>	
Ion Plus Fragment Library Kit	10 reactions	4471252
Ion 16S Metagenomics Kit	100 reactions	A26216
Ion GeneStudio S5 System	1 system	A38194
Platinum II <i>Taq</i> Hot-Start DNA Polymerase	500 reactions	14966-005
	2,500 reactions	14966-025
Platinum <i>Taq</i> DNA Polymerase, DNA-free	400 reactions	15966-005
Platinum SuperFi II DNA Polymerase	500 reactions	12361050
MagMAX Microbiome Ultra Nucleic Acid Isolation Kit	100 preps (with bead tubes)	A42358
PureLink Microbiome DNA Purification Kit	1 kit	A29790
ProFlex PCR System, 96-well	1 system	4484075
Find the right qPCR plastics	Search at <a href="https://thermofisher.com/findplastics">thermofisher.com/findplastics</a>	

\* For Laboratory Use.

## Ordering information for detection and analysis using flow cytometry or QuantiGene assay technology

Products	
Attune flow cytometers	Find out more at <a href="https://thermofisher.com/attune">thermofisher.com/attune</a>
QuantiGene assays	Select the most suitable option at <a href="https://thermofisher.com/quantigene">thermofisher.com/quantigene</a>
Cell viability assays	<a href="https://thermofisher.com/cellviability">thermofisher.com/cellviability</a>
pHrodo assays for flow cytometry	<a href="https://thermofisher.com/phrodo">thermofisher.com/phrodo</a>
Bacterial viability and vitality assays for flow cytometry	<a href="#">Bacterial Viability and Vitality Assays for Flow Cytometry</a>
Microbial identification test kits	<a href="#">Microbial Identification Test Kits</a>

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