



# SWIFT AMPLICON™ 16S+ITS PANEL

Single tube comprehensive NGS microbial detection assay

## Highlights

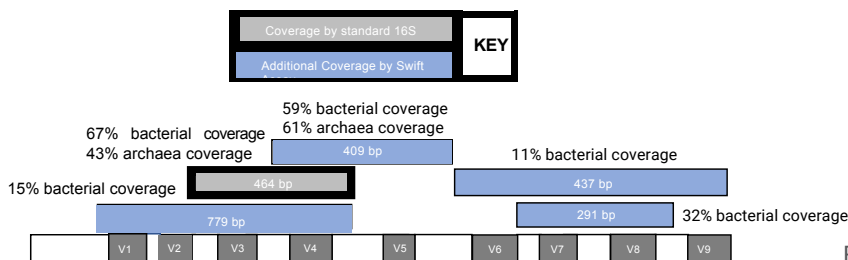
- **Profiles complex metagenomic samples**  
Multiplexed assay covers all variable regions of the 16S rRNA, ITS1 and ITS2 genes in a single primer pool
- **Solves sequencing complexity problems**  
Unique amplicon chemistry generates diverse clusters with reduced or 0% PhiX or phased primers, recovering >20% of reads
- **Saves costs**  
Flexibility with Illumina® sequencers and read lengths; 384 indexing available
- **Fast workflow, high quality data**  
From DNA to Illumina® compatible libraries within 2 hours

The Swift Amplicon 16S+ITS Panel facilitates NGS analysis of complex microbial communities (e.g. bacteria, archaea, fungi) using a single multiplexed primer pool targeting the 16S rRNA (variable regions 1-9) gene and ITS 1/2 spacer regions.

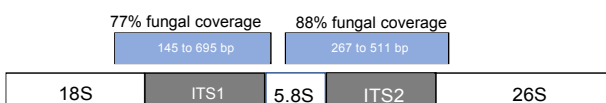
## Applications and Sample Types

- Microbiome
- Metagenomics: Bacteria, Archaea, Fungi
- Environmental: Air, Water, Wastewater
- Agriculture
- Forensics

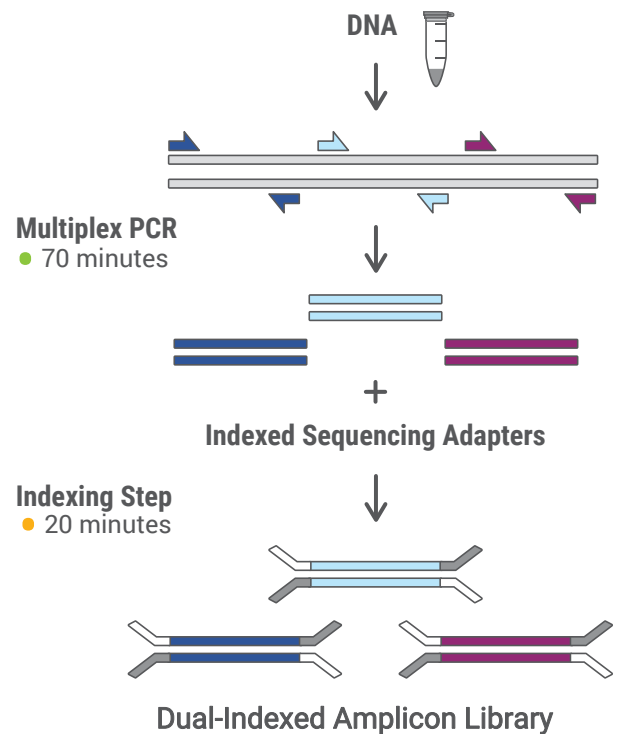
## 16S rRNA Gene Amplicons



## ITS1 and ITS2 Amplicons (Fungal)



## Single-Tube, 2-Hour Workflow



The single-tube workflow includes two brief incubations to generate the multiplex amplicon targets and add a unique combination of Illumina-compatible indexed adapters, creating up to 384 uniquely-indexed libraries for multiplexing on a single sequencing run.

Figure 1. The Swift Amplicon 16S+ITS panel generates libraries covering all variable regions of 16S and fungal ITS1/ITS2 targets, unlike conventional 16S rRNA gene assays that target only V3-V4, or region-specific single-plex primers that require phased reverse primers and result in low complexity libraries with limited sensitivity and low-quality sequencing.

## Provides Superior Representation of a Diverse Microbial Community Versus V3-V4 Only

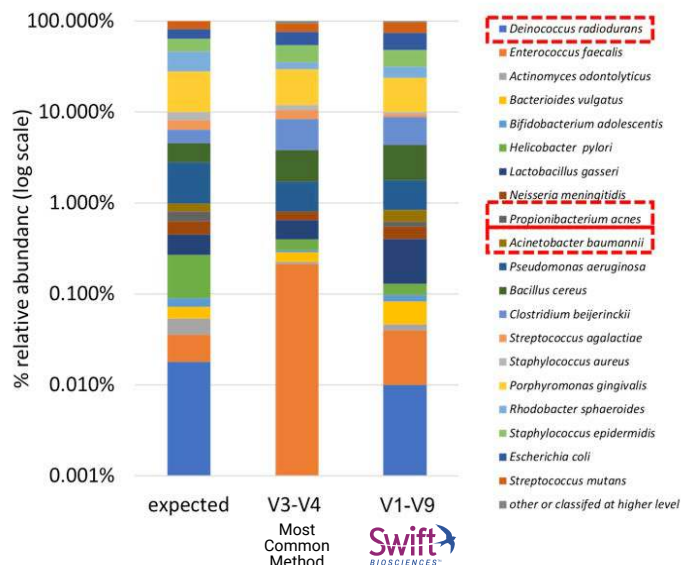
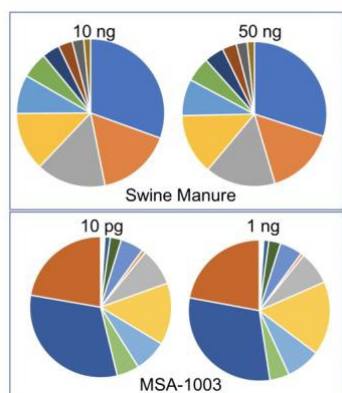


Figure 2. The Swift Amplicon 16S+ITS Panel covering all V1-V9 regions provides sensitive detection and accurate representation of each species in the sample compared to standard methods interrogating the V3-V4 region alone. Organisms marked in red were underrepresented by V3-V4 only method. Input DNA was a mix of 20 bacterial species (ATCC® MSA-1003™) tested with the Swift Amplicon 16S+ITS Panel, sequenced with Illumina® MiSeq® V3 (2x300bp reads).

## Consistent Performance with Varying DNA Input, Sample Type, and Read Length



Sample	V1-V9, 2x150 PE sequencing		V1-V9, 2x300 PE sequencing	
	Shannon Species Diversity	% Reads PF Classified to Genus	Shannon Species Diversity	% Reads PF Classified to Genus
Manure 1	2.84	94.1%	2.84	92.5%
Manure 2	2.87	94.6%	2.85	92.8%
Manure 3	2.71	94.6%	2.69	92.6%
Manure 4	2.74	95.0%	2.70	93.6%

Figure 3. (Left) Using the same protocol and cycling conditions, input quantities of 10 pg to 50 ng with both ATCC MSA-1003 (bottom left) and swine manure (top left) gave consistent and expected sequencing results in terms of sensitivity and relative abundance. (Right) When comparing 2x150 and 2x300 PE reads, the Swift 16S+ITS Panel identified a comparable number of species from swine manure samples.

## Product Specifications

Feature	Swift Amplicon 16S+ITS Panel
Input DNA (tested range)	1 ng (10 pg to 50 ng)
Primer Pairs	7 total: 5 (16S rRNA) + 2 (fungal ITS)
Average Amplicon Size	475 bp
Genes Covered	16S rRNA (V1-V9), Fungal ITS1+ITS2
Assay Format	Single tube multiplex PCR; 2 hours DNA-to-library
Components Provided	Target specific primer pool, PCR and library preparation reagents, including indexed adapters
Depth Recommendations	100K-300K reads per sample
Multiplexing Capability	384 libraries
Compatible Platforms	Illumina, MiSeq, MiniSeq, iSeq

## Ordering Information

Product Name	Indexing Included	Catalog No.
Accel-Amplicon 16S+ITS Panel (48 rxns)	8 i5* X12 D701-712	AL-51648
Accel-Amplicon 16S+ITS Panel (96 rxns)	Not Included - Choose 1 of the 4 Below	AL-51696
Swift Amplicon Combinatorial Dual Indexing Kit (Set 1A, 96 rxns)	8 i5 X12 S701-712	AL-S1A96
Swift Amplicon Combinatorial Dual Indexing Kit (Set 1B, 96 rxns)	8 i5 X12 S701-724	AL-S1B96
Swift Amplicon Combinatorial Dual Indexing Kit (Set 2A, 96 rxns)	8 i5 X12 S725-736	AL-S2A96
Swift Amplicon Combinatorial Dual Indexing Kit (Set 2B, 96 rxns)	8 i5 X12 S737-748	AL-S2B96

i5\* Illumina Truseq CD indexes D501-D508

Visit [www.swiftbiosci.com](http://www.swiftbiosci.com) for easy ordering.

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