



Bifidobacteria longum FISH probe

Cat. No.: LBGF-0426-GF173

This product is for research use only and is not intended for diagnostic use.

PRODUCT INFORMATION

Product Overview This probe is optimized to target *Bifidobacteria longum*, one of the most widely distributed and well-studied species of the genus. It is a fundamental tool for researchers tracking the long-term persistence of this beneficial microbe in the human gut and its influence on host immune system development.

Target Microbial FISH Probes

Target Organism *Bifidobacteria longum*

Taxonomic Level Species

In Silico Coverage The theoretical coverage of this probe is optimized during the design phase using the most current rRNA databases (e.g., SILVA, RDP). However, final in-silico coverage and specificity parameters are confirmed upon completion of the specific probe sequence synthesis and preliminary testing.

Probe Types

1. Standard DNA Oligonucleotide Probes
2. Double Labeling Probes

Probe Design Tool Database used for design (e.g., SILVA TestProbe, RDP, or ProbeBase).
<https://www.arb-silva.de/documentation/release-1381/>

Target Region 16S RNA

Fluorophore Cyanine 3, FITC, TR-equivalent or Red Fluorophore, Green Fluorophore.

Purity ≥85% (HPLC purified)

Size	30T/50T
Form	Lyophilized powder or stabilized liquid (in TE buffer).
Concentration	Typically supplied at 50 pmol/μL or 100 pmol/μL (Customizable).
Shipping	Shipped at ambient temperature (lyophilized) or on blue ice (liquid).
Storage	Recommended long-term storage at -20°C in the dark.
Light Sensitivity	Store in the dark. Minimize exposure to ambient light during experiments.
Specificity	Validated against the SILVA/RDP databases.
Documentation Included	1. Certificate of Analysis (COA) 2. Safety Data Sheet (SDS) 3. A standard Hybridization Protocol.
Applications	1. Spatial Mapping: Visualization of the "biogeography" of the gut-mapping exactly where bacteria reside in relation to the mucus layer and epithelial cells. 2. Abundance Quantification: Accurate counting of specific commensal populations to study the effects of diet, prebiotics, or fecal microbiota transplants (FMT). 3. Biofilm Architecture: Investigating the physical structure of microbial "clusters" in the intestinal tract.
Regulation Status	For research use only (RUO)
Product Features	1. High Taxonomic Specificity: Engineered using advanced thermodynamic modeling to ensure exclusive binding to the target 16S or 23S rRNA sequences with zero cross-reactivity to non-target species. 2. Superior Signal-to-Noise Ratio: Optimized probe chemistry and high-intensity fluorophore conjugation provide bright, distinct signals even in samples with high background autofluorescence. 3. Culture-Independent Detection: Directly detects and quantifies organisms in their natural state, bypassing the biases and time requirements associated with traditional cultivation methods. 4. Broad Sample Compatibility: Fully validated for use across a diverse range of sample types, including FFPE tissue sections, fresh clinical smears, environmental filters, and complex biofilms. 5. Dual-Labeling Capability: Compatible with multi-color FISH protocols, enabling the simultaneous visualization and spatial mapping of multiple different species in a single sample.