

Product Profile

QIASymphony® PowerFecal® Pro DNA Kit

Automated isolation of microbial DNA from stool and soil using the QIASymphony SP

Extracting microbial DNA from large numbers of stool, human biomedical or soil samples simultaneously can be challenging. Our new QIASymphony PowerFecal Pro DNA Kit uses our next-generation Pro technology to enable isolation of high yields of pure microbial DNA from stool and other human samples, as well as all soil types. The kit is automated on the QIASymphony SP, enabling extraction of 96 samples in continuous loading of 24-sample batches.

QIAGEN Pro technology homogenization is performed in 2 ml PowerBead Pro tubes for optimized lysis and ease of use. The improved beads and optimized chemistry enable more efficient lysis of bacteria and fungi. The QIASymphony PowerFecal Pro DNA Kit also contains streamlined Inhibitor Removal Technology® (IRT) to eliminate the challenging inhibitors commonly found in stool and soil samples in less time compared to older kits. Sequencing results reveal higher alpha diversity as measured by observed operational taxonomic units (OTUs) compared to other tested methods.

Using the QIASymphony PowerFecal Pro DNA Kit, researchers can:

- Efficiently lyse bacteria and fungi in all stool and soil samples
- Automate the procedure on the QIASymphony SP for reproducible medium-throughput purification of DNA
- Recover inhibitor-free DNA, ready to use directly in downstream next-generation sequencing (NGS) applications
- Achieve unbiased results that accurately represent sample alpha and beta diversity
- Obtain results equivalent to using the QIAamp PowerFecal Pro DNA Kit

Take advantage of a convenient, automated medium-throughput workflow

The new QIASymphony PowerFecal Pro DNA Kit provides a convenient, semi-automated workflow for continuous loading of 24 sample batches, enabling extraction of 96 stool or soil sample in less than 4 hours (Figure 1).



Figure 1. Workflow of QIASymphony PowerFecal Pro DNA Kit

High DNA yields from stool are comparable to other PowerFecal Pro and PowerSoil Pro Kits

The QIAAsymphony PowerFecal Pro enables researchers to isolate high yields of DNA, equivalent to other single-tube and high-throughput PowerFecal Pro/PowerSoil Pro kits, using a QIAAsymphony SP (Figure 2).

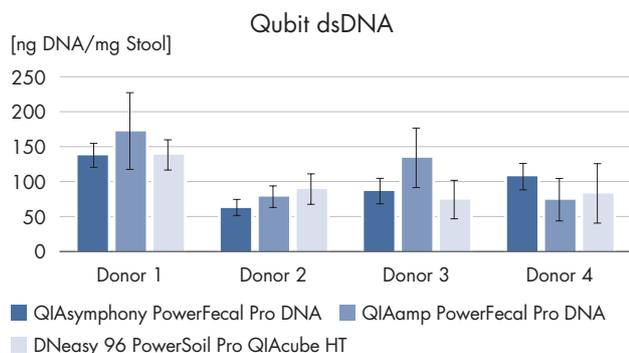
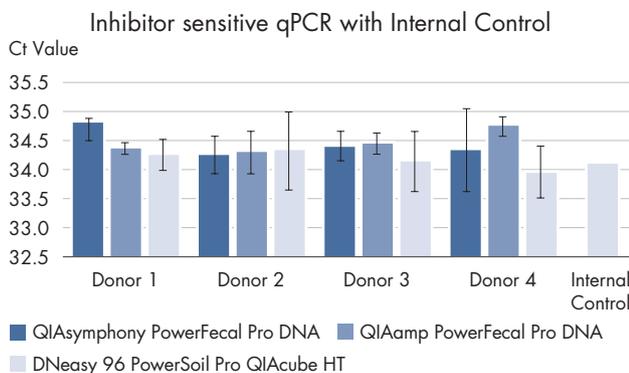


Figure 2. Comparable DNA yields for the new QIAAsymphony PowerFecal Pro DNA Kit and other kits. Four different stool samples (100 mg) were prepared in triplicate and compared with the established QIAamp PowerFecal Pro DNA and DNeasy 96 PowerSoil Pro QIAcube HT kits. Yield were measured by fluorometric, DNA specific quantification (Qubit®).

Inhibitor Removal Technology delivers outstanding purity of isolated DNA

The QIAAsymphony PowerFecal Pro DNA Kit, much like other QIAGEN Pro Kits, features a streamlined IRT that removes inhibitors with high efficiency and yields highly pure samples. No inhibition of PCR was detected when using DNA extracted with the QIAAsymphony PowerFecal Pro DNA Kit or other kits in the PowerFecal Pro/PowerSoil Pro line (Figure 3).



No cross contamination

Unbiased data is essential in microbiome research. The QIAAsymphony does not create any cross contamination in negative controls placed adjacent to spiked samples (Figure 4).

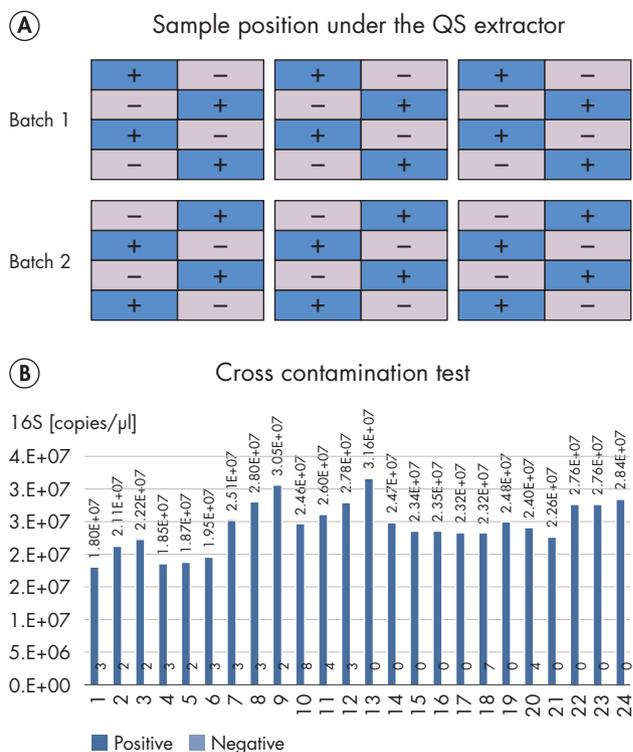


Figure 4. No cross contamination is introduced in the QIAAsymphony protocol. Two Batches of 24 samples each were processed on QIAAsymphony using QIAAsymphony PowerFecal Pro DNA Kit. (A) Plate set up: Positive samples (+) contained 100 mg stool and negative samples (-) contained water. (B) All samples were analyzed using quantitative qPCR detection of 16S rDNA; DNA yield was calculated using a standard curve. No cross contamination was observed using the QIAAsymphony PowerFecal Pro DNA Kit protocol.

Figure 3. Pure DNA with no inhibitor co-isolation. Efficient removal of PCR inhibitors was demonstrated by processing samples isolated with the manual (QIAamp PowerFecal Pro DNA Kit) and automated (QIAAsymphony PowerFecal Pro DNA Kit and the DNeasy 96 PowerSoil Pro QIAcube HT Kit) protocols with the QuantiFast Pathogen +IC Kit. 2.5 ul of eluate from each sample were added to reaction mixtures that contained internal control DNA. Amplification of this control DNA was quantified by qPCR. The C_i value of a water control which does not inhibit amplification of the internal control DNA was compared to samples containing eluates. Eluates from the QIAAsymphony protocol performed as well as the manual and the QIAcube HT protocols as can be seen by a C_i value comparable to the control. Each vertical bar represents triplicates.

Identify total diversity and community representation in stool samples

DNA isolated using the new QIAasympyony PowerFecal Pro DNA Kit helped researchers identify comparable bacterial diversity (OTUs) in stool samples from four donors when

compared with the QIAamp PowerFecal Pro DNA Kit and DNeasy 96 PowerSoil Pro QIAcube HT Kit (Figure 5).

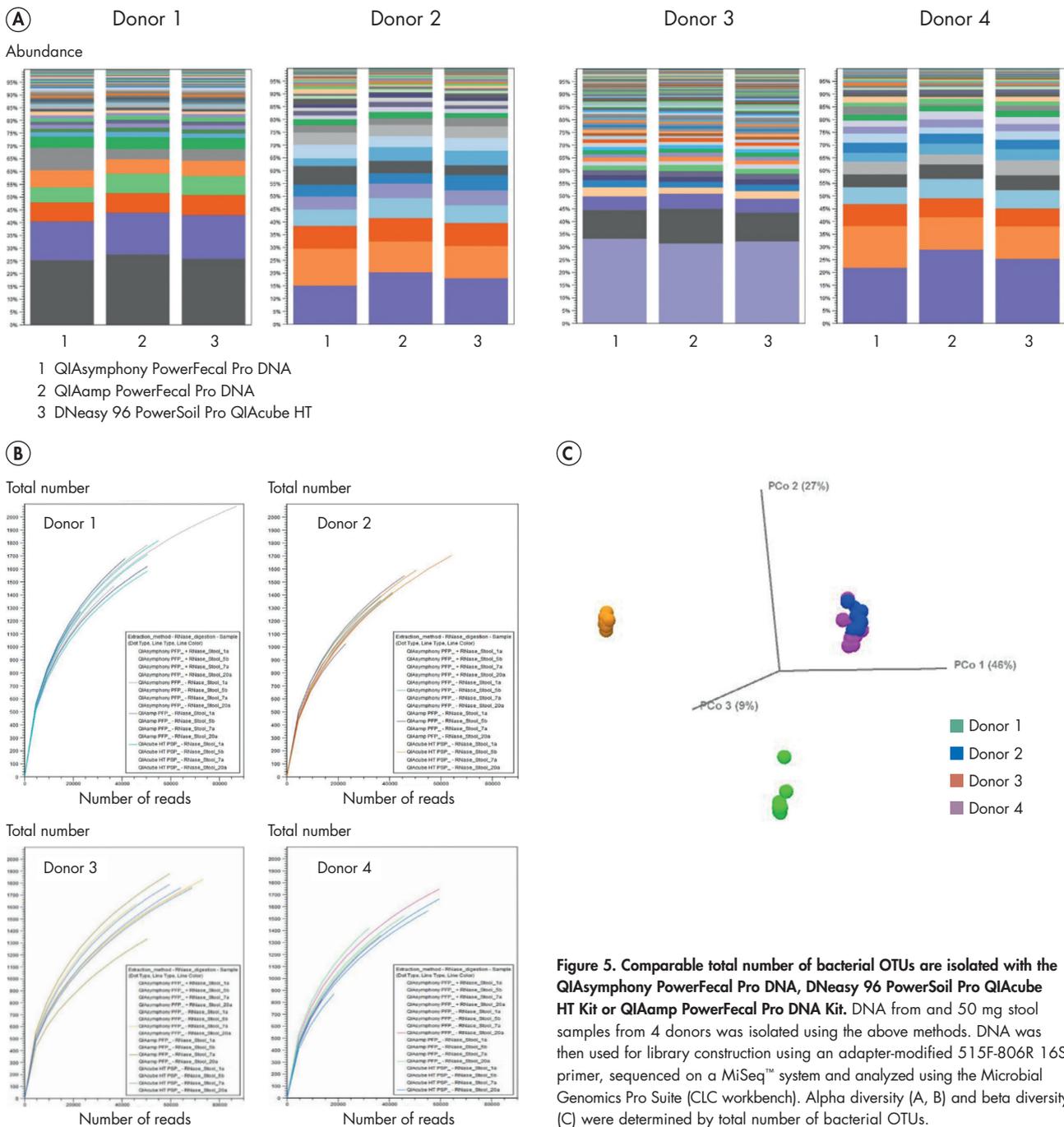


Figure 5. Comparable total number of bacterial OTUs are isolated with the QIAasympyony PowerFecal Pro DNA, DNeasy 96 PowerSoil Pro QIAcube HT Kit or QIAamp PowerFecal Pro DNA Kit. DNA from and 50 mg stool samples from 4 donors was isolated using the above methods. DNA was then used for library construction using an adapter-modified 515F-806R 16S primer, sequenced on a MiSeq™ system and analyzed using the Microbial Genomics Pro Suite (CLC workbench). Alpha diversity (A, B) and beta diversity (C) were determined by total number of bacterial OTUs.

Ordering Information

Product	Contents	Cat. no.
QIAsymphony PowerFecal Pro DNA Kit (192)	For automated isolation of microbial DNA from soil and stool using the QIAsymphony SP for 192 samples	938036
Related Products		
PowerLyzer® 24 Homogenizer (110/220 V)	For the most efficient and complete lysis and homogenization of any biological sample	13155
QIAsymphony AS	QIAsymphony assay setup module: includes 1-year warranty on parts and labor	9001301
QIAsymphony SP	QIAsymphony sample prep module: includes 1-year warranty on parts and labor	9001297

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