



# Depletion of Host DNA

**MolYsis™**

Small, medium and large volumes  
Enrichment of bacterial & fungal DNA





## Product Features

- ✓ Depletion of human and animal DNA
- ✓ Selective enrichment of bacterial and fungal DNA
- ✓ Removal of PCR inhibitors
- ✓ Broad-range lysis of bacteria and fungi
- ✓ Higher PCR sensitivity
- ✓ DNA-free reagents and plastics
- ✓ 0.2 - 10ml sample volume
- ✓ Low hands-on-time
- ✓ Automation available

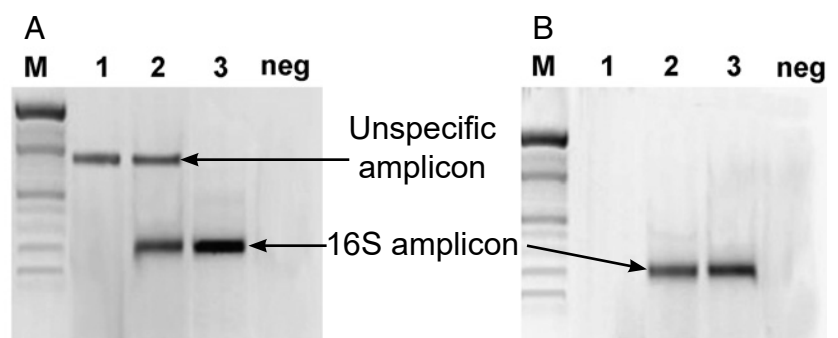
## MoLYsis™ - Removal of Host DNA

**MoLYsis™** is a tool for the depletion of human/animal DNA and enrichment of bacteria and fungi from liquid samples. Technically, in a short series of steps, MoLYsis™ effects the selective lysis of host cells and the quantitative degradation (up to 99%) of released host DNA. After enrichment from the lysate by centrifugation, microorganisms are treated with a reagent degrading cell walls of Gram-positive and Gram-negative bacteria and fungi. The broad-range lysis potential has been shown in clinical evaluations, including over 200 genera of bacteria (86 Gram-positives, 120 Gram-negatives) and 65 genera of fungi. Kits are available for the isolation of enriched microbial DNA from the following samples:

- Whole blood
- Synovial fluid
- Pleural fluid
- Cerebrospinal fluid
- Ascites fluid
- Pus
- Bronchoalveolar lavage
- Nasal-wash fluid
- Urine
- Blood cultures

## Host DNA Limits the PCR Detection of Bacteria and Fungi

PCR is a rapid and highly sensitive means of analyzing microorganisms in clinical specimens. The quality of DNA preparations takes strong influence on the PCR analysis. Among the factors negatively influencing the analysis, unspecific binding of e.g. bacteria-specific primers to human sequences is recognized to constitute an important cause of false-negative and false-positive results. **MoLYsis™** solves this problem by the removal of human/animal DNA thus enabling the analysis of bacteria and fungi in specimens at utmost sensitivity and accuracy (Fig. 1).



**Fig. 1.** 16S PCR amplification products from [A] total DNA (Qiagen) and [B] enriched bacterial DNA (MoLYsis). M: marker; 1: whole blood; 2: whole blood spiked with *E. coli*; 3: *E. coli* in saline (Comp Immun Microbiol Infect Dis 32:207-219, 2009; modified)

## MolYsis™ Complete Kits

**MolYsis™ Complete** kits provide reagents and materials for host DNA removal, bacteria and fungi enrichment and DNA isolation. **MolYsis™ Complete5** enables small and medium size preparations from ≤1ml and 5ml volumes. Maxi size isolation of enriched microbial DNA from 5 -10ml volumes is possible with **MolYsis™ Complete10**. The kits guarantee exclusion of false signals by unspecific background amplification thus constituting your standard for extremely high PCR detection sensitivity: enhancement over total DNA extraction can account for up to 40,000-fold. The PCR analytical sensitivity is greatly increased, allowing detection of only a few viable cells in the sample.

## MolYsis™ Basic Kits

Kits of the **MolYsis™ Basic** series are combinable with any DNA isolation kit or in-house method, including manual and automated systems. **MolYsis™ Basic** is specially dedicated to the processing of small sample volumes (0.2ml). **MolYsis™ Basic5** is the flexible solution for sample pre-treatment, encompassing sample volumes of ≤1ml and 5ml. Maxi preparations are performed from 5 - 10ml sample volume using **MolYsis™ Basic10**.

## Related Products

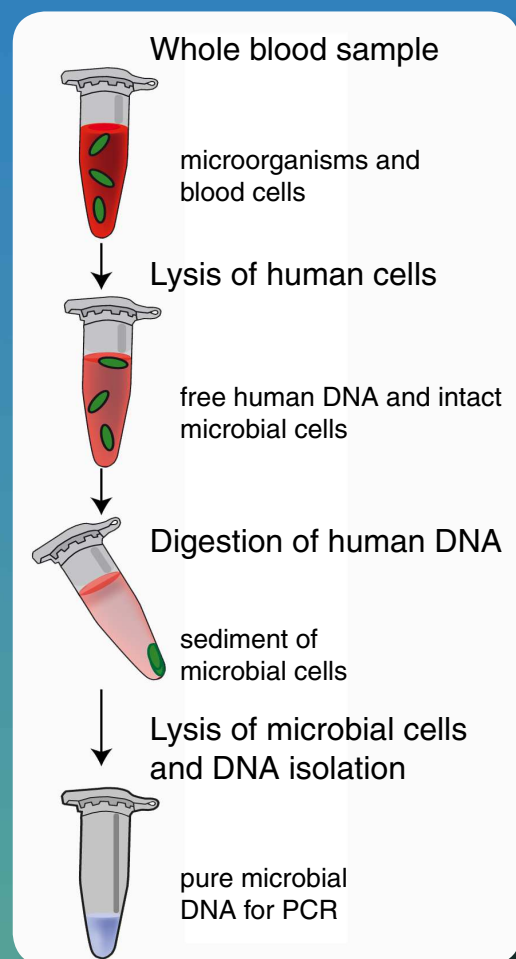
The MolYsis™ technology is also applicable for tissue and swab samples. With the **Ultra-Deep Microbiome Prep** kit ≤1ml liquid and tissue specimens can be used. Highest flexibility is given with the **Ultra-Deep Microbiome Prep10** kit for volumes from 1 – 10ml and tissues.

**MolYsis-SelectNA™plus** is the solution of choice for the fully automated host DNA removal and extraction of microbial DNA from clinical and other material on the **SelectNA™plus** robotic system. One to 12 samples can be processed by the instrument at a time.

All **MolYsis™** kits are specially useful for the sensitive detection of bacteria and fungi by PCR/Real-Time PCR assays and Next Generation Sequencing analyses. Therefore, Molzym offers highly active, DNA-free **Mol-Taq 16S/18S** polymerases, **16S/18S Mastermixes** and **NGSeq 16S V3/V4** Amplicon PCR for Illumina® MiSeq system.

## Technology

Example displayed for human whole blood:



## Automation

**SelectNA™plus**  
Robot for fully automated DNA extraction:

- 1-12 samples in parallel
- Various specimens: body fluids, tissue and swabs



## Order Information:

Product	Volume	Content	Order No.
<b>MolYsis™ Basic kits - Host DNA removal and enrichment of bacteria and fungi. Compatible with any DNA isolation system</b>			
<b>MolYsis™ Basic</b>	0.2ml	50 reactions	D-300-050
		100 reactions	D-300-100
<b>MolYsis™ Basic5</b>	≤1ml and 5ml	50 reactions	D-301-050
		100 reactions	D-301-100
<b>MolYsis™ Basic10</b>	5 - 10ml	50 reactions	D-305-050
		100 reactions	D-305-100
<b>MolYsis™ Complete kits - Host DNA removal and isolation of enriched bacterial and fungal DNA</b>			
<b>MolYsis™ Complete5</b>	≤1ml and 5ml	50 reactions	D-321-050
		100 reactions	D-321-100
<b>MolYsis™ Complete10</b>	5 - 10ml	50 reactions	D-325-050
		100 reactions	D-325-100
<b>Ultra-Deep Microbiome Prep – Depletion of host DNA and isolation of enriched bacterial and fungal DNA from liquid and tissue specimens</b>			
<b>Ultra-Deep Microbiome Prep</b>	≤1ml and tissue	25 reactions	G-020-025
		50 reactions	G-020-050
<b>Ultra-Deep Microbiome Prep10</b>	1 - 10ml and tissue	25 reactions	G-030-025
		50 reactions	G-030-050

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