

## SelectNA™*plus* Robot

### Automated Host DNA Depletion and Microbial DNA Extraction

**Key words:** *pathogens, bacteria, fungi, host DNA depletion, DNA purification, culture-free analysis, fluid samples, tissue biopsies, animal models, automation, NGS, PCR, Real-Time PCR, contamination testing*

#### Introduction

The analysis of microorganisms by molecular methods directly in clinical materials is challenging. This holds true particularly in samples with low loads of microorganisms. In many specimens host DNA is in considerable mass excess, sometimes several orders of magnitude to target sequences of microorganisms, and tends to bind primers unspecifically thereby reducing the sensitivity and specificity of PCR assays and depth of microbiome analyses, respectively. Molzym developed a technology, **MolYsis™**, by which host DNA is depleted from samples before extraction and purification of DNA from intact microorganisms. This technology has now been converted to an automated protocol executed on the **SelectNA™*plus*** robot.

#### The SelectNA™*plus* robot – innovation in automated host DNA depletion

The bench-top **SelectNA™*plus*** robot is the first system that provides an innovative and efficient solution for automated host DNA depletion and microbial DNA extraction from complex specimens.



#### Characters and benefits:

- Innovative walk-away pathogen DNA isolation
- Host DNA depletion
- Vacuum-driven system
- UV decontamination
- Validated for primary sterile body fluids, swabs and tissues
- Bench-top instrument
- Flexible: 1 to 12 samples at a time
- DNA-free consumables and reagents

1 to 12 samples of up to 1 ml volume can be extracted in a run. This simplicity of the procedure opens the possibility to address the focus of molecular analysis to infectious agents of a variety of diseases, including septicemia, joint, bone and wound infections, periodontitis, bacterial meningitis, infective endocarditis and others – all at a time. Before loading to the robot, tissue samples are digested by a validated treatment of only 10 min to release intact microorganisms from incrustations, biofilms and other aggregates.

The protocol is validated for a great diversity of clinical specimens, e.g.:

- EDTA blood
- Bronchoalveolar lavage
- Ascites fluid
- Joint aspirates
- CSF
- Swabs
- Sonicate fluids
- Various tissue biopsies

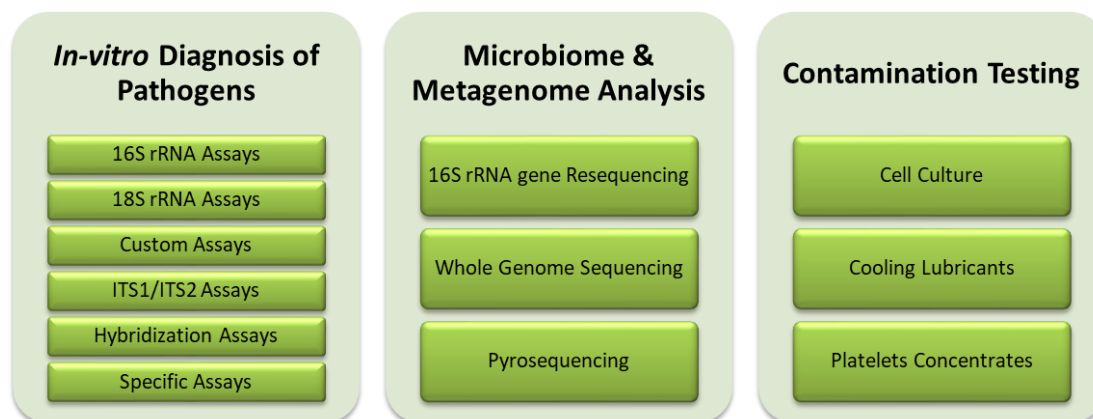
By this high flexibility in specimens, **SelectNA™*plus*** provides a DNA preparation platform for the study of basic phenomena and functions of host-microorganism interactions associated with the development of disease in humans and animals.

## The SelectNA™*plus* protocol – contamination-free DNA preparation

The proprietary automated protocol is driven by vacuum filtration of the host DNA depleted sample lysate through a column of special matrix formulation. During passage of the lysate, bacteria and fungi are retained on the matrix. The immobilized microorganisms are lysed *in situ* by a special cocktail of highly active reagents. The matrix-adsorbed microbial DNA is then purified by a bind-wash-elute process. All steps from host DNA depletion to the elution of purified microbial DNA are performed fully automated. Importantly, all consumables, reagents and buffers are quality controlled for the absence of microbial DNA contamination. This and the manipulation of samples in the contained environment of the **SelectNA™*plus*** robot provide best conditions for molecular analysis without limitations through contaminations.

## Applications

The efficient depletion of host DNA and the use of ultra-pure reagents lead to increased detection of microorganisms even at very low loads. The purified microbial DNA can be used with a great variety of analytical methods:



## Order information

Product	Description	Content	Order No.
<b>SelectNA™<i>plus</i> robot</b>	Bench-top instrument	1	D-400-001
<b>MolYsis-SelectNA™<i>plus</i></b>	Kit for fully automated enrichment and isolation of microbial DNA (research use only)	48	D-450-048
<b>Micro-Dx™ CE IVD</b>	Complete kit for fully automated enrichment and isolation of microbial DNA combined with broad-range 16S & 18S PCR assays for <i>in-vitro</i> diagnosis	24	U-200-024
		48	U-200-048

For further information, please contact the Molzym team:

**Molzym GmbH & Co. KG**  
 Mary-Astell-Str. 10, D-28359 Bremen, Germany  
 Tel.: +49 (0) 421 / 69 61 62 0  
[info@molzym.com](mailto:info@molzym.com)