

NEW
Assaying Fungal DNA

DNA-Free PCR Reagents

40 PCR Cycles

Mastermix 16S/18S
Ultra-sensitive Assaying of
Bacterial and Fungal DNA





Product Features

- ✓ Highly active Taq polymerase
- ✓ Microbial DNA-free
- ✓ High amplification activity for 40 cycles
- ✓ Ultra-sensitive detection of bacterial DNA
- ✓ Ultra-sensitive detection of fungal DNA
- ✓ Suitable for PCR and Real-Time PCR

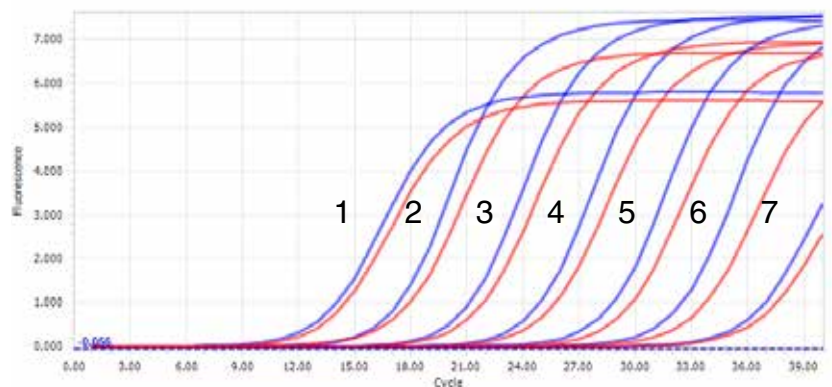
Mastermix 16S/18S: Avoidance of False-Positive Results

A common drawback of PCR assays for bacterial and fungal sequences is the contamination of amplification reagents by microbial DNA. As a consequence, false-positive results may arise often also associated with a loss of analytical sensitivity.

Molzym's Mastermix 16S/18S products are guaranteed free of contaminating bacterial and fungal DNA. This provides accurate results also at low target loads.

Ultra-Sensitive Detection of Bacterial and Fungal Sequences

Mastermix 16S/18S products assure strong amplification activity and accuracy, and thereby guarantee high sensitivity of bacterial and fungal DNA detection. Mastermix 16S/18S products can be used with commercial PCR and Real-Time PCR systems including thermocyclers from e.g. ABI, Bio-Rad, Eppendorf, Qiagen, Roche and Stratagene.



SYBR® Green 1 Real-Time PCR of purified *Bacillus subtilis* DNA (red) with Mastermix 16S Complete and of *Saccharomyces cerevisiae* DNA (blue) with Mastermix 18S Complete. Sensitivity of detection for *B. subtilis*/*S. cerevisiae* at quantities of 100/10 ng (1), 10/1 ng (2), 1/0.1 ng (3), 100/10 pg (4), 10/1 pg (5), 1/0.1 pg (6), and 100/10 fg (7).

A series of high quality products are available for the ultra-sensitive detection of bacterial and fungal DNA down to the femtogram range using PCR or Real-Time PCR. Products include assays for part of the 16S and 18S rRNA gene, respectively, as well as mastermixes for the use with custom primers. Molzym's proprietary manufacturing technology and QM management supply ultra-pure reagents. Thereby, false-positive results by reagent contamination are excluded and high sensitivity of the assay is guaranteed.

DNA-Free and Highly Active PCR/Real-Time PCR Reagents

DNA-free Taq polymerase

DNA-free [MolTaq 16S/18S](#) is a highly active, DNA-free Taq DNA polymerase for ultra-sensitive PCR/Real-Time PCR analysis of femtogram amounts of bacterial and fungal DNA.

DNA-free mastermix products

Application	Custom primers		Eubacterial assays		Panfungal assays	
Product	Mastermix 16S/18S		Mastermix 16S		Mastermix 18S	
	Basic	Dye	Primer	Complete	Primer	Complete
Taq polymerase, buffer, water	+	+	+	+	+	+
dNTPs	+	+	+	+	+	+
Fluorescing dye	-	+	-	+	-	+
Universal 16S primers	-	-	+	+	-	-
Universal 18S primers	-	-	-	-	+	+

Molzzy's mastermix products constitute of optimised reagent formulations and MolTaq 16S/18S, which permit high performance assaying of bacterial and fungal sequences even at very low target loads. High amplification activity is pertained for at least 40 cycles.

Mastermix products for custom assays

Two mastermix products are available for PCR or Real-Time PCR assays including your custom primer sets. [Mastermix 16S/18S Basic](#) is ready for use with your specified primers with or without probes. SYBR Green Real-Time PCR and melt curve assaying is possible employing [Mastermix 16S/18S Dye](#) by adding custom primers.

Eubacterial assays

Two assays are available for the detection of bacterial DNA. [Mastermix 16S Primer](#) is designed for PCR and [Mastermix 16S Complete](#) for Real-Time PCR testings. The mastermixes include universal primers that bind to conserved sites flanking the V3/V4 variable region of the 16S rRNA gene.

Panfungal assays

[Mastermix 18S Primer](#) and [Mastermix 18S Complete](#) amplify the V8/V9 variable region of the fungal 18S rRNA gene. The PCR and Real-Time PCR assays, respectively, allow the extremely sensitive detection of fungal DNA in a sample.

Enhanced amplification activity of Molzym Mastermix 16S Complete using *Klebsiella pneumoniae* DNA at amounts indicated per 25µl assay

Source	1 ng	45 pg	8.9 pg	1.7 pg
Supplier A	+	-	-	-
Supplier B	+	+	-	-
Supplier C	+	+	-	-
Molzzy	+	+	+	+

+ signal in the melt curve analysis (SYBR Green) at the temperature specific for *K. pneumoniae* 16S amplicon; - = specific signal lacking

Analytical sensitivity of eubacterial and panfungal assays

Strain	cfu/ml
Mastermix 16S	
<i>Escherichia coli</i>	40
<i>Klebsiella pneumoniae</i>	50
<i>Staphylococcus aureus</i>	20
<i>Streptococcus pneumoniae</i>	50
<i>Enterococcus faecalis</i>	20
Mastermix 18S	
<i>Candida albicans</i>	10
<i>Candida glabrata</i>	10
<i>Candida krusei</i>	10
<i>Candida parapsilosis</i>	10
<i>Candida tropicalis</i>	10

Minimum titre resulting in positive signals in 3 repeated extractions using Real-Time PCR (5 µl extract/assay) with melting curve analysis

Order Information:

Product	Content	Order Number
DNA-free assays for the sensitive detection of bacterial DNA		
Mastermix 16S Complete Universal 16S rDNA Real-Time PCR assay	100 reactions	S-020-0100
	250 reactions	S-020-0250
	1000 reactions	S-020-1000
Mastermix 16S Primer Universal 16S rDNA PCR assay	100 reactions	S-021-0100
	250 reactions	S-021-0250
	1000 reactions	S-021-1000
DNA-free assays for the sensitive detection of fungal DNA		
Mastermix 18S Complete Universal 18S rDNA Real-Time PCR assay	100 reactions	S-070-0100
	250 reactions	S-070-0250
	1000 reactions	S-070-1000
Mastermix 18S Primer Universal 18S rDNA PCR assay	100 reactions	S-071-0100
	250 reactions	S-071-0250
	1000 reactions	S-071-1000
DNA-free Mastermixes for use with custom primers		
Mastermix 16S/18S Dye Pre-mixed reagents and fluorescent dye for Real-Time PCR assays	100 reactions	S-030-0100
	250 reactions	S-030-0250
	1000 reactions	S-030-1000
Mastermix 16S/18S Basic Pre-mixed reagents for PCR assays	100 reactions	S-040-0100
	250 reactions	S-040-0250
	1000 reactions	S-040-1000
DNA-free polymerase		
MolTaq 16S/18S DNA-free Taq DNA polymerase	100 units	P-019-0100
	500 units	P-019-0500
DNA-free PCR-Grade Water		
DNA-Free Water	10 x 1.7 ml	P-020-0003

Molzylm GmbH & Co. KG
 Mary-Astell-Str. 10
 D-28359 Bremen, Germany
 Tel.: +49 (0) 421-696162-0
 Fax: +49 (0) 421-696162-11
 order@molzylm.com




Molzylm
www.molzylm.com
www.sepsitest.com