

PCR Mycoplasma Test Kit II

[PK-CA20-700-20]



The PCR Mycoplasma Test Kit II employs a nucleic acid amplification based on a polymerase chain reaction. PCR for mycoplasma detection is well documented in the literature and the test is accepted as very specific and sensitive. The PCR method allows a fast and highly sensitive detection of mycoplasma contamination in biological samples. The contained primers are specific to a highly conserved region of the 16S rRNA region of the mycoplasma genome. The amplified PCR product has a size of approximately 270 bp and can be directly analysed on an agarose gel.

Note: The primers used in this kit were tested for many years in comparison to the culture detection method and found to be very reliable and specific for a broad range of mycoplasmas (while not reacting with mammalian or bacterial cells). The primers have a broad detection range - more than 95% of the mycoplasma species commonly found in cell culture.

The following species can be detected based on sequence alignments*:

Detectable strains	Detectable strains
<i>Mycoplasma fermentans</i>	<i>Mycoplasma adleri</i>
<i>Mycoplasma hyorhinis</i>	<i>Mycoplasma agalactiae</i>
<i>Mycoplasma arginini</i>	<i>Mycoplasma agassizii</i>
<i>Mycoplasma orale</i>	<i>Mycoplasma alvi</i>
<i>Mycoplasma salivarium</i>	<i>Mycoplasma citelli</i>
<i>Mycoplasma hominis</i>	<i>Mycoplasma collis</i>
<i>Mycoplasma pulmonis</i>	<i>Mycoplasma columbinasale</i>
<i>Mycoplasma arthritidis</i>	<i>Mycoplasma columbinum</i>
<i>Mycoplasma bovis</i>	<i>Mycoplasma columborale</i>
<i>Mycoplasma pneumoniae</i>	<i>Mycoplasma conjunctivae</i>
<i>Mycoplasma pirum</i>	<i>Mycoplasma cricetuli</i>
<i>Mycoplasma capricolum</i>	<i>Mycoplasma elephantis</i>
<i>Acholeplasma laidlawii</i>	<i>Mycoplasma equigenitalium</i>
<i>Mycoplasma synoviae</i>	<i>Mycoplasma cynos</i>
<i>Mycoplasma hyosynoviae</i>	<i>Mycoplasma edwardii</i>
<i>Mycoplasma genitalium</i>	<i>Mycoplasma equirhinis</i>
<i>Mycoplasma bovinegenitalium</i>	<i>Mycoplasma gallinaceum</i>
<i>Mycoplasma gallinarum</i>	<i>Mycoplasma gallopavonis</i>
<i>Mycoplasma meleagridis</i>	<i>Mycoplasma gateae</i>
<i>Mycoplasma iowae</i>	<i>Mycoplasma glycyphilum</i>
<i>Mycoplasma falconis</i>	<i>Mycoplasma gypis</i>
<i>Mycoplasma penetrans</i>	<i>Mycoplasma hyopharyngis</i>
<i>Mycoplasma cloacale</i>	<i>Mycoplasma iguanae</i>
<i>Mycoplasma spermatophilum</i>	<i>Mycoplasma indiense</i>
<i>Mycoplasma opalescens</i>	<i>Mycoplasma iners</i>
<i>Mycoplasma primateum</i>	<i>Mycoplasma lagogenitalium</i>
<i>Mycoplasma faucium</i>	<i>Mycoplasma leonicaptivi</i>
<i>Mycoplasma caprine</i>	<i>Mycoplasma leopharyngis</i>
<i>Mycoplasma agalactica</i>	<i>Mycoplasma lipofaciens</i>
<i>Mycoplasma timone</i>	<i>Mycoplasma lipophilum</i>

* Primers were aligned with the NCBI data base and inspected for homologies within the target region of the 16S rRNA.

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PCR Mycoplasma Test Kit II (cont'd)

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Detectable strains	Detectable strains
<i>Mycoplasma molare</i>	<i>Mycoplasma californicum</i>
<i>Mycoplasma mustelae</i>	<i>Mycoplasma canadense</i>
<i>Mycoplasma oxoniensis</i>	<i>Mycoplasma canimucosale</i>
<i>Mycoplasma phocicerebrale</i>	<i>Mycoplasma caviae</i>
<i>Mycoplasma phocidae</i>	<i>Mycoplasma sphenisci</i>
<i>Mycoplasma phocirhinis</i>	<i>Mycoplasma spumans</i>
<i>Mycoplasma ravipulmonis</i>	<i>Mycoplasma sturni</i>
<i>Mycoplasma simbae</i>	<i>Mycoplasma sualvi</i>
<i>Mycoplasma alkalescens</i>	<i>Mycoplasma subdolum</i>
<i>Mycoplasma anseris</i>	<i>Mycoplasma testudineum</i>
<i>Mycoplasma auris</i>	<i>Mycoplasma turnidae</i>
<i>Mycoplasma bovirhinis</i>	<i>Mycoplasma verecundum</i>
<i>Mycoplasma buccale</i>	<i>Mycoplasma zalophi</i>
<i>Mycoplasma buteonis</i>	<i>Mycoplasma zalophidermidis</i>
<i>Spiroplasma citri</i>	<i>Mycoplasma maculosum</i>
<i>Acholeplasma pleciae</i>	<i>Mycoplasma microti</i>
<i>Acholeplasma palmae</i>	<i>Mycoplasma moatsii</i>
<i>Acholeplasma granularum</i>	<i>Mycoplasma mobile</i>

Bacterial strains which were tested negative using this kit are:

E. coli, *Enterobacter aerogenes*, *Bacillus cereus*, *Streptococcus pyogenes*, *Proteus*, *Klebsiella pneumoniae*, *Enterococcus faecalis* and *Staphylococcus aureus*.

Mycoplasma species that can be tested and detected using this kit are:

M. fermentans, *M. hyorhinis*, *M. arginini*, *M. orale*, *M. salivarium*, *M. hominis*, *M. pulmonis*, *M. arthritidis*, *M. bovis*, *M. pneumoniae*, *M. pirum* and *M. capricolum*, as well as *Acholeplasma* and *Spiroplasma* species.

Sensitivity of the kit was determined (before sample concentration) for the following strains:

M. fermentans - 240 CFU/ml (12 CFU/ml after 20x concentration)
M. capricolum - 110 CFU/ml (6 CFU/ml after 20x concentration)
M. penetrans - 200 CFU/ml (10.0 CFU/ml after 20x concentration)
M. hyorhinis - 210 CFU/ml (11 CFU/ml after 20x concentration)

The mycoplasma concentration was determined by a series of decimal dilutions and culturing on agar plates.

Stability

The kit was found to be stable for at least 3 years. Positive results obtained with the positive template control and with test sample (Vero cells contaminated with mycoplasma).

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