AKRON BIOTECH

TEL: (561) 750-6120 FAX: (561) 750-6140
1095 Broken Sound Parkway
Boca Raton, FL 33487
www.akronbiotech.com

MycoSolutions™ - Real-Time PCR Mycoplasma Detection Kit

Ready-to-use Real-Time PCR Mix for the detection of Mycoplasma in cell culture

Product Page

Akron Catalog # **AK9752-0010** (10 tests), **AK9752-0020** (20 tests)

Product Description:

Principle of the Mycoplasma Real-Time PCR Detection Test Kit

The **Mycoplasma Real-Time PCR Detection Kit** employs a nucleic acid amplification test on the basis of a real time polymerase chain reaction (also called quantitative real time PCR or qPCR). The qPCR method allows a fast and highly sensitive detection of *Mycoplasma* contamination in biological samples. The contained primers are specific to a segment of the 16S-23S rRNA region of the *Mycoplasma* genome. The selected template is highly conserved within the species *Mycoplasma*.

The qPCR procedure for *Mycoplasma* detection is well documented in literature and the test is accepted as a very specific and sensitive (with the appropriate primers).

The primers were tested for years in comparison to the culture detection method and found to be very reliable and specific to *Mycoplasma* (do not react with mammalian or bacterial cells). The primers have broad detection range - more than 95% of the *Mycoplasma* species found in cell culture.

The *Mycoplasma* species that tested and can be detected by the kit are:

M. fermentans, M. hyorhinis, M. arginini, *M. orale, M. salivarium, M. hominis, M. pulmonis, M. arthritidis, M. bovis, M. pneumonia, M. pirium* and *M. capricolum,* as well as *Acholeplasma* and *Spiroplasma* species.
**See Appendix A for a complete list

Bacterial strains which were tested negative are:

E. coli, Entrobacter aerogenes, Bacillus cereus, Streptococcus, pyogenes, Proteus, Klebsiella pneumonia, Entrococcus, faecalis, and *Staphylococcus aureus.*
**See Appendix B for a complete list

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Research Applications:

The kit is intended for research use only (detection of *Mycoplasma* contamination in cell culture).
The kit system was not validated with other test material, but in relation to the primers' sequence, it should be able to detect many other *Mycoplasma* species. It all depends on the sample preparation before running the qPCR.

Benefits of Real Time PCR:

Real-time polymerase chain reaction is used to amplify and simultaneously quantify a targeted DNA molecule. Unlike conventional PCR, qPCR allows a researcher to see their results in real-time. Because of this, the Real-Time PCR *Mycoplasma* Detection Kit allows you to simultaneously amplify, detect and quantify *Mycoplasma* DNA. Computer software is used at each cycle to plot the amount of target DNA in the sample. This curve can then be compared to a standard curve made by the controls to check for the presence of *Mycoplasma*. The whole process allows you to quantify the amount of target genetic material without having to run a gel and without having to wait hours to complete the process. The test also checks for a wide range of genomes, which allows for better response. The increased test sensitivity and decreased completion time makes testing for *Mycoplasma* a lot less cumbersome and a lot more time-efficient.

Related Products:

- MycoSolutions™ 1&2 - *Mycoplasma* Treatment (#**AK8360**)
- MycoSolutions™ 3 - *Mycoplasma* Treatment (#**AK5240**)
- CleanSolutions™-Spray (#**AK5230**)
- CleanSolutions™-CO_2 (#**AK5219**)
- CleanSolutions™-WaterBath (#**AK5225**)
- CleanSolutions™-Hands (#**AK9529**)
- CleanSolutions™-Wipes (#**AK9533**)

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Appendix A

Specificity

Laboratory tests (partial) and Bioinformatics Analysis of the 16S-23S ribosomal RNA intergenic spacer regions from the following *Mycoplasma* (and related Mollicutes genus) were studied using the Real-Time PCR *Mycoplasma* Detection Kit:

Acholeplasma laidlawii ATCC23206; Spiroplasma citri ATCC27556; M. argini ATCC23838; M. arthritidis ATCC19611; M. bovis ATCC25025; M. capricolum capricolum ATCC27343; M. fermentans ATCC49892; M. gallisepticum ATCC19610; M. genitalium ATCC33530; M. hominis ATCC27545; M. hyopneumoniae ATCC25934; M. orale ATCC23714; M. pirum ATCC25960; M. pneumonia ATCC15531; M. pulmonis GenBank X58554; M. salivarium ATCC23064; M. synoviae ATCC25204; M. mirounga GenBank GU905026; M. adleri strain G145; M. agalactiae strainGO-5; M. agassizii strain PS6; M. alkalescens ATCC29103; M. alligatoris ATCC700619; M. alvi strain lisley; M. amphoriforme strain A39; M. anseris strain 1219; M. auris strain UIA; M. bovigenitalium strain PG-11; M. bovirhinis ATCC27748; M. bovoculi ATCC29104; M. buccale ATCC23636; M. buteonis strain Bb/T2g; M. californicum strain ST6; M. canadense strain 466; M. canimucosale type strain 1642; M. canis ATCC19525; M. caviae strain ATCC27108; M. cavipharyngis ATCC43016; M. citelli strain RG2C; M. cloacale strain 383; M. collis ATCC35278; M. columbinasale ATCC33549; M. columbinum strain FG295; M. columborale ATCC29258; M. conjunctivae Goat655; M. corogypsi strain BV1-5; M. cottewii ATCC43093; M. cricetuli ATCC35279; M. cocodyli ATCC51981; M. cynos strain H381; M. dispar ATCC27140; M. edwadii strain 04-3440; M. elephantis ATCC51980; M. equigenitalium ATCC29869; M. equirhinis ATCC29420; M. falconis ATCC51372; M. fastidiosum ATCC33229; M. faucium ATCC25293; M. feliminutum ATCC25749; M. felis GenBank AF443608; M. flocculare strain Ms42; M. gallinarum strain B2Dinter; M. gallisepticum GenBank FJ468427; M. gallopavonis ATCC33551; M. glycophilum ATCC35277; M. gypis ATCC51370; M. hyopharyngis strain H36B-F; M. hyorhinis ATCC29052; M. iguana strain 2327; M. indiense ATCC51125; M. iners ATCC15969; M. iowae ATCC33552; M. lagogenitalium ATCC700289; M. leachii strain PG50; M. leonicaptivi ATCC49890; M. leopharyngis ATCC49889; M. lipofaciens ATCC35015; M. lipophilum ATCC27104; M. maculosum strain PG15; M. meleagridis ATCC27764; M. microti strain IL371; M. matsii strain MK405; M. mobile ATCC43663; M. molare strain H542; M. muris ATCC33757; M. mustelae ATCC35214; M. neurolyticum ATCC19988; M. opalescens strain MHS408; M. ovipneumoniae ATCC29419; M. oxoniensis ATCC49694; M. phocicerbrale strain CSL5195S2; M. phocirhinis strain CSL7475-4; M. primatum strain HRC292; M. pullrum ATCC33553; M. putrefaciens ATCC33756; M. simbae ATCC49888; M. spermatophilum strain AH159; M. sphenisci strain UCMJ; M. spumans ATCC19526; M. stumi ATCC51945; M. sualvi ATCC33004; M. subdolum ATCC29870; M. testudineum ATCC700618; M. testudinis ATCC43263; M. verecundum ATCC27862; M. vultunii strain Gb-V33; M. yeatsii ATCC43094; M. zalophi strain CSL5195; M. zalophidermis strain CSL4779.

All of these *Mycoplasma* (and related Mollicutes genus) strains have specific nucleic acid regions capable of hybridizing with MycoSolutions RT-PCR Primer Set.

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Appendix B

No amplification of genomic human, mouse, CHO-S Cell line (Invitrogen Corporation 1600 Faraday Avenue Carlsbad, CA 92008) and chromosomal E. coli DNAs were found.

In addition, Bioinformatics analysis excluded the possibility of cross reaction with the following species:

Bacillus cerum ATCC53522; Bacillus subtilis ATCC6051; Campylobacter jejuni ATCC33250; Chlamydophila pneumonia ATCC VR-2282; Citrobacter freundii ATCC8090; Clostridium perfringens ATCC10543; Enterobacter aerogenese ATCC13048; Enterococcus faecalis ATCC19433; Escherichia coli strain O157:H7; Klebsiella oxytoca ATCC13182T; Lactobacillus delbrueckii subsp. Bulgaricus ATCC11842; Listeria monocytogenes ATCC35152; Pseudomonas aeruginosa ATCC28853; Shigella dysenteriae strain GYPB22; Staphylococcus aureus ATCC29740; Vibrio cholerae ATCC14035; Yersinia enterocolitica subsp. Enterocolitica ATCC9610.

PELOBIOTECH GmbH
Am Klopferspitz 19
82152 Planegg / Germany
(P) +49 89 517 286 59-0
(F) +49 89 517 286 59-88
Email:info@pelobiotech.com
www.pelobiotech.com