

Lot-No.

**Ref. MB-K010****MANUAL – one step****EXPIRY DATE: 1 year****STORE AT -20°C**

100 Tests (Ready to use kit)

MYCOPLASMA HYOPNEUMONIAE

**-Only for in vitro use-****-To be used by a technical person-****Principle and use**

This amplification kit has been manufactured by *Microboss Hightech GmbH*, Germany to detect *Mycoplasma hyopneumoniae* (in one step).

This kit needs DNA which can be isolated from blood, tissue, respiratory swabs, nasal swabs, sputum probes, air probes, cell cultures and any body fluid. Kindly use good methods to isolate the DNA.

***IMPORTANT: we added cotton or sponge in the lid of container of the kit to avoid damage during transportation. Please remove this cotton or sponge from the lid of each container before storage.***

**Composition:**

It contains the following (**WARNING! THAW THE TUBES SLOWLY: NEVER THAW IN HEATING BLOCK OR WITH HEAT FROM HAND**):

- Tube A (2 tubes)
- Tube B (2 tubes)
- Positive (+Ve) Control (tube D1) (1 tube)
- Negative (-Ve) Control (tube D2) (1 tube)
- Marker (tube E) (1 tube): (max 1000bp): 100, 150, 200, 300, 400, 500, 600, 700, 800, 900, 1000bp
- Dye (tube F) (1 tube)

Please check them before you start.

**Equipment needed:**

- PCR Thermocycler
- Laboratory centrifuge
- UV platform
- UV safety goggles
- microtubes (0.2ml)
- Pipette-tips with and without filter (20µl, 5µl & 1µl)
- Pipettes (quality pipettes)
- Gel Agarose chamber
- Power supply
- Paper
- Pen
- Agarose (good quality)
- Staining (Ethium Bromide)
- TAE buffer 1x
- Ice
- Vortexer

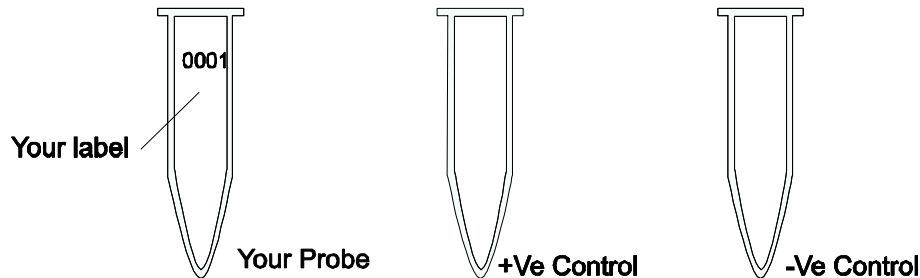
**Procedure:**

After your DNA isolation is completed. (Kindly use good quality isolation method).

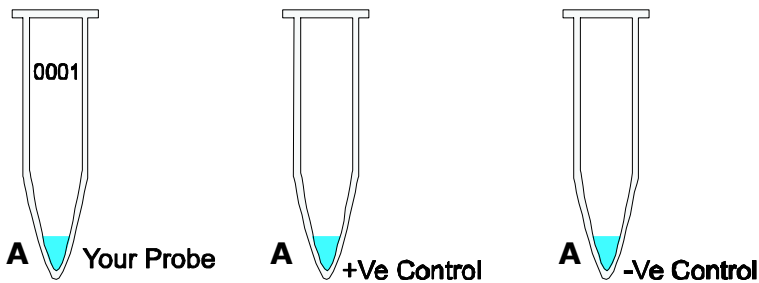
**STEP A**

1. Kindly thaw **one tube** each: A, B, D1, D2, E & F. After thawing, kindly put the tubes on 4°C (as it is better). If the kit is not in use, store them at -20°C.

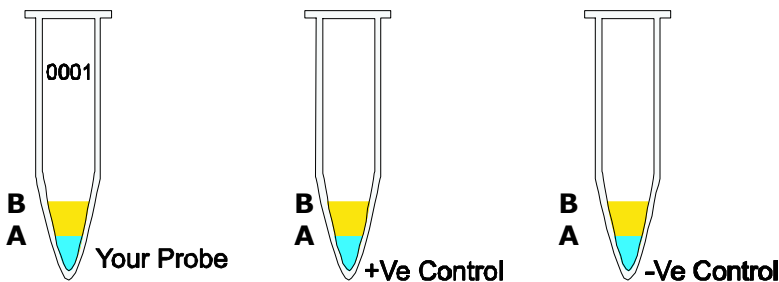
2. Mark your microtubes with a sample number and with +Ve Control and -Ve Control.



3. Thaw tube A. Add 8µl of tube A to each tube.



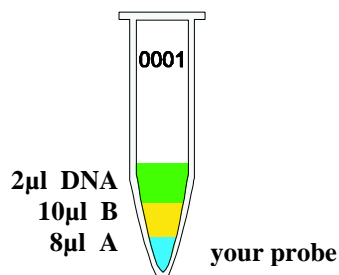
4. Add 10µl of B to each microtube. Avoid to touch the wall of the microtubes.



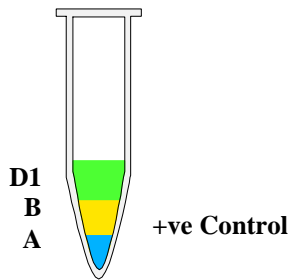
5. **TIP: you can calculate the total requirement of chemicals needed . You need 8µl A + 10µl B = 18µl per reaction. You want to run 10 reactions i.e. you need total 180µl, therefore you should mix 80µl of A + 100µl of B = 180µl from which you can take 18µl and add to each tube. This way you can save time and hardware.**

6. Add 2µl of your DNA template (DNA isolated from samples) with pipette tip with filter to each microtube according to your label except +Ve and -Ve (Avoid touching the wall).

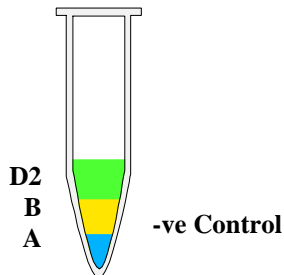
**Use everytime a new pipette tip** (for each sample)! Mix it.



7. Use new pipette tip with filter. Add 2µl of +Ve (tube D1) to +Ve Control (avoid to touch the wall). Use a new pipette tip. Mix it.

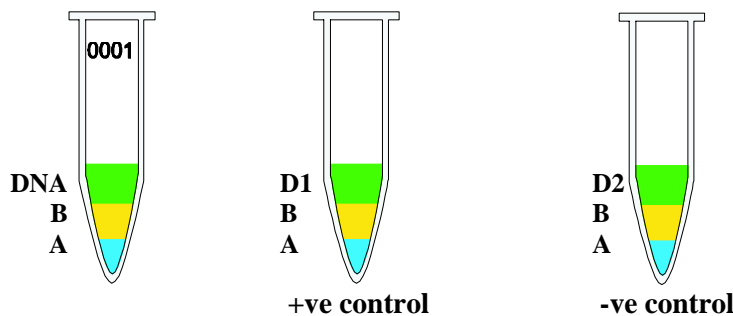


8. Use a new pipette tip. Add 2µl of –Ve (tube D2) to –Ve Control (avoid the wall). Mix it.



9. Centrifuge all tubes for 20 sec. for 8000 rpm (this is not necessary but it is better).

10. Run the programm of your thermocycler as followings: Kindly check whether you have added everything correctly as the level of the volume of each tube must be almost the same.



Now program your PCR machine as follows.

1. 300 seconds at 94°C
  2. 30 seconds at 93°C
  - 30 seconds at 55 °C
  - 90 seconds at 72°C
  3. 600 seconds for 72°C
- } x 50 cycles

Before you start the PCR program, kindly check whether tubes are closed properly.

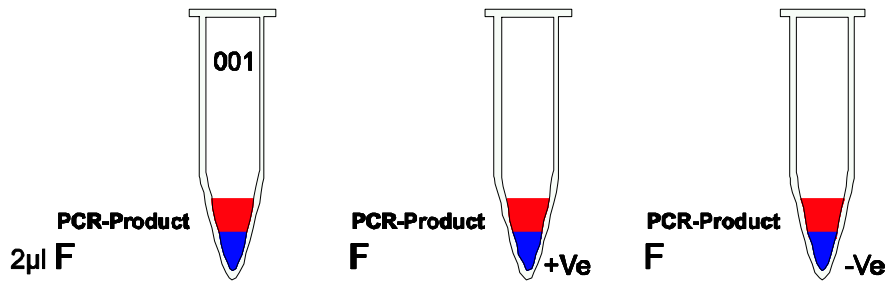
**Microtubes must be in contact with metal block** (very important!). There should be no air or lose contact with metal block of thermocycler. Run The program now.

11. After step 10 is finished take out the microtubes.

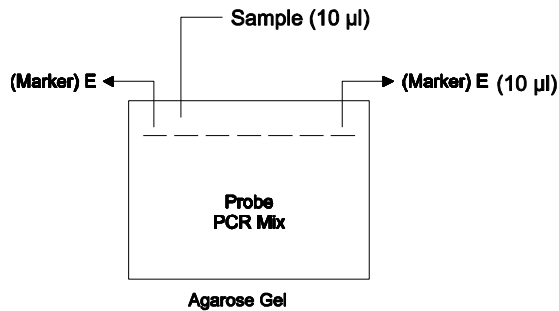
To see Mycoplasma hyopneumoniae, you go directly to step gel electrophoresis (STEP B).

### STEP B

1. Prepare the gel Agarose 1.0% in TAE (1x) buffer.
2. Let the gel dry and add this TAE (1x) buffer in gel chamber.
3. Take the tube E (marker). Make ready to use for gel electrophoresis.
4. After the PCR step is finished, now you can prepare for gel Agarose electrophoresis. Take 2µl of dye (tube F) and add to each microtube (with the same number as your PCR microtubes including +Ve & -Ve Controls).



5. Add 10µl of marker (tube E: 100bp) to first and last lane of electrophoresis. (Kindly make lane plan on paper according to your probes in order to identify later and see the results).



6. Add 10µl of mix of step 4 to each lane of gel Agarose (between first and last lane). Change the pipette tip for each lane.

7. Run the gel for **60 min.** at **100 Volt.** It may vary.

8. Make staining solution ready.

9. Put the gel for 5-15 minutes staining solution (0.5µg/ml).

10. View the gel under UV light. UV light is dangerous for your eyes. Use UV goggles.

11. You must find the bands in +Ve Controls and no bands in –Ve controls. (**853 bp** in +Ve Control Mycoplasma hyopneumoniae and then there should be no band in –Ve Controls). All +Ve samples will show the bands at **853 bp**.

**Recommendation: gene sequencing is highly recommended to reconfirm the positive results.**

**If you should find any mistakes, please let us know. Thank you.**

**Suggestion:**

This manual has been written specifically for beginners, hence persons with experience in PCR must use their experience to keep each step as small as possible e.g. you should calculate the amount of the needed chemicals, before starting with testing.

Last update: 09-07-2014  
v1.6

**Microboss Hightech GmbH**

Duissernstr.65a  
47058 Duisburg  
Germany  
Tel. (+49) 203 / 555858-31,-32,-33  
Fax (+49) 203 / 35 82 99  
www.microbosssturbo.de