

Mycoplasma is a reality which we ignore, and pay heavy for ignorance.

(Reading Time 2 -3 min)

It is recommended for every cell culture facility to perform routine monitoring of mycoplasma. Since it does not cause media turbidity, change in pH of media or any other detectable change, **it does not mean monster is not there.** The prevalence of mycoplasma is much higher than expected due to low monitoring rate. A recent study conducted on worldwide samples shown 15% to 80% prevalence of mycoplasma[1].

Is mycoplasma really important:

- Expression of 61 genes ($P < 0.001$) of various cellular pathways are significantly associated with mycoplasma-contamination[2].
- Mycoplasma contamination increase sensitivity to apoptosis[3]
- Mycoplasma activates TLR2 and also affect other cytokine-inducing components [4]
- Mycoplasma contamination decreases the transfection efficiency [3]
- Mycoplasma compete for biosynthetic precursors such as vitamins and essential amino acid, hence severely affect cellular metabolism[5]
- Some mycoplasma species adhere on the cell surface and interfere with functioning of membrane proteins such as disruption of K⁺ pump [5]
- Mycoplasma species such as *M. pulmonis* known to activates B and T lymphocytes[6]

My cultures do not have mycoplasma! This is the common assumption, which should be validated. If you are facing inconsistent PCR or western blotting results from same set of experiment, then possibility of mycoplasma contamination is even higher.

But, I use antibiotics! The efficacy of mycoplasma removal reagents ranges between 66 to 85 percent[3] with 10-80 percent re-emergence rate[7]. Further, the long term use of antibiotics negatively affects your cells and also masks low-level contamination[7]. If possible, prefer fresh stock over mycoplasma removal agents, but, if not feasible, you should check for effective clearance and re-emergence after treatment.

Still, I think otherwise! It takes a lot of effort, time and cost to get final data from cell culture, whether it is real time PCR, western blotting, Flow cytometry etc. The Mycoplasma detection will ensure reproducibility and reliability of your data without much cost enhancement.

Why “ZEQON BioLogic” mycoplasma detection kit: Our mycoplasma detection kit has wide species detection range, it can detect 90+ species of mycoplasma (detail mentioned in manual) including the common 12 contaminants *M. arginini*, *M. fermentans*, *M. hominis*, *M. hyorhinae*, *M. orale*, *M. pirum*, *M. salivarium*, and *A. laidlawii*, *M. bovis*, *M. gallisepticum*, *M. hyosynoviae*, *M. ovipneumoniae*. Eight species from the list found in 95% of mycoplasma contaminations in cell culture[8]. **The mycoplasma detection kit from most other manufacturer does not cover even the most prevalent species; some avoid disclosing their species detection range due to the same reason.**

References

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