

MYCOPLASMA FACTS

DANGERS OF CONTAMINATION IN CELL CULTURE LABS



Mycoplasma was first detected and isolated from cell cultures in

1956

180+

 DIFFERENT MYCOPLASMA SPECIES HAVE BEEN IDENTIFIED

TODAY, AT LEAST **20** DISTINCT SPECIES OF MYCOPLASMA HAVE BEEN ISOLATED FROM CONTAMINATED CELL CULTURES

95%

 OF CELL CULTURE CONTAMINATION IS MADE UP OF ONLY 6 SPECIES

- M. orale
- M. hyorhinis
- M. arginini
- M. fermentans
- M. hominis
- A. laidlawii

DID YOU KNOW?

THE MOST COMMON MYCOPLASMAS THAT CONTAMINATE CELL CULTURES ORIGINATE FROM HUMAN, BOVINE, AND SWINE



UP TO **1,000** MYCOPLASMA CELLS CAN ATTACH TO AN INFECTED CELL AT ANY GIVEN TIME

EACH MYCOPLASMA CELL CAN GROW TO **1,000,000** CFU'S PER ML OF CONTAMINATED MEDIA IN ONLY **3** DAYS

(CFU = colony forming unit)



DO YOU TEST FOR MYCOPLASMA?

15% OF US LABS CONTAMINATED

UP TO **35%** OF CELLS IN CELL BANKS ARE CONTAMINATED IN US AND EUROPE

50% OF US LABS DO NOT TEST

35% WORLDWIDE CONTAMINATION

OVER **60%** CELL CONTAMINATION IN JAPAN

80.6%

of LAB TECHNICIANS are carriers of mycoplasma

38%

OF LAB TECHS SPREAD MYCOPLASMA BY SNEEZING



6%

OF LAB TECHS SPREAD MYCOPLASMA BY TALKING



OTHER SOURCES OF CONTAMINATION:

- Water baths
- Sera
- Feeder cells
- Liquid nitrogen tanks
- Other contaminated cultures
- Used pipettes

TOP 5 REASONS TO TEST:

- LOSS OF TIME AND MONEY
- INVALID SCIENTIFIC DATA
- MISLEADING OR RETRACTED PUBLICATION
- LOSS OF CELL LINES
- CONTAMINATION BETWEEN LABS

PREVENTION TIPS



ROUTINELY TEST EVERY **2 WEEKS TO 3 MONTHS** DEPENDING ON CELLS IN THE LAB



ALWAYS PRACTICE GOOD STERILE TECHNIQUE



EXAMINE AND SCREEN YOUR CELLS OFTEN

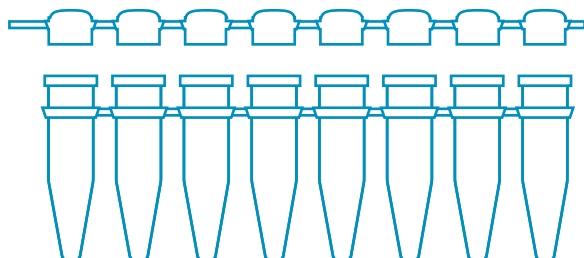


AVOID TALKING OVER YOUR CELLS

QUARANTINE

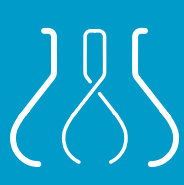
ALL NEW CELL CULTURES AND ANIMAL PRODUCTS ENTERING LAB

USE PCR-BASED OR DNA STAIN TESTS



EASY SENSITIVE FAST

RELIABLE COST-EFFECTIVE EFFICIENT



BI Biological Industries
Culture of Excellence

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Sources: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3463982/>, <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3584481/>, <http://www.nature.com/nprot/journal/v5/n5/full/nprot.2010.43.html>, <http://en.wikipedia.org/wiki/Mycoplasma>, <http://csmedia2.corning.com/LifeSciences/Media/pdf/cccontamination.pdf>, <http://www.intechopen.com/books/biomedical-tissue-culture/contamination-of-tissue-cultures-by-mycoplasmas>