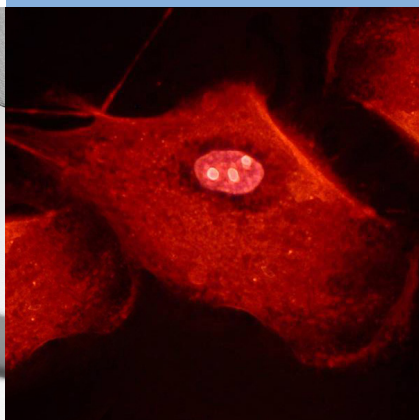


支原体检测清除系列产品 清除支原体，让细胞得到更好的保护



Mycoplasma Products for Managing
Mycoplasma Contaminations



支原体污染是细胞培养实验室中最常见污染之一，保守估计常规细胞培养中有15–35%存在支原体污染，在某些国家感染率更高（有些甚至高达80%）。

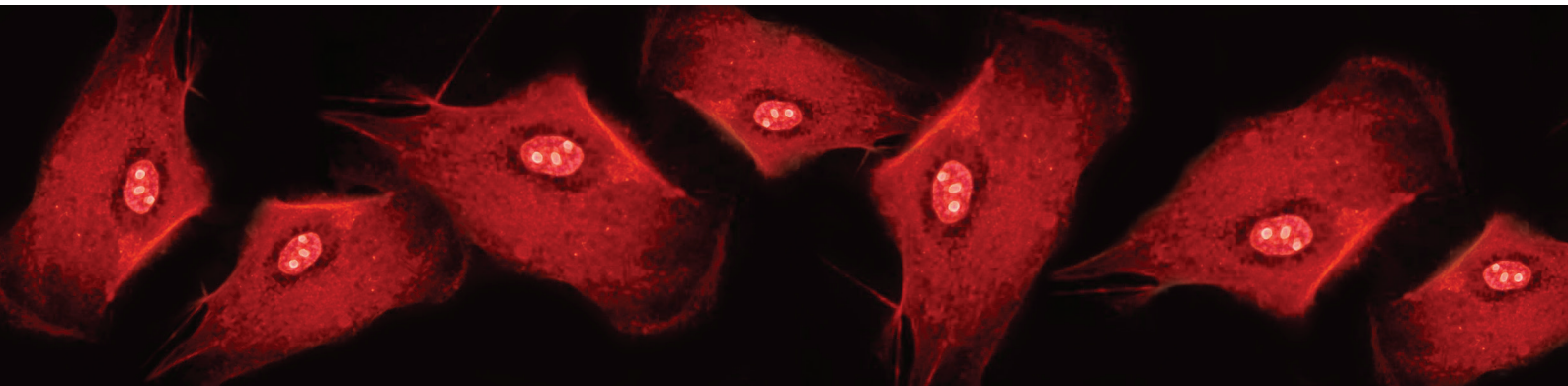
Lonza公司为研究者提供强效、可靠的支原体检测产品。同时我们也为有需要的研究者提供支原体去除和防护等系列产品。

支原体检测试剂盒

精确、可靠、实用的支原体检测试剂

MycotooL支原体检测试剂盒

用于工厂生产最后QC检验—产品放行检



什么是支原体？

- 属于柔膜纲（包括支原体、无胆支原体、腺原体、虫原体、螺原体等物种）
- 微小、悬浮、自我复制的有机体
- 简单的原生质无细胞壁（包裹着简单的质膜）
- 通常依附在细胞膜表面
- 支原体的生物合成能力缺失，许多营养成份依赖于他们的宿主
- 超过180个已知种类
- 95%的感染来自主要的6个物种 (*M. orale*, *M. arginii*, *M. fermentans*, *M. salivarum*, *M. hyorhinis* and *A. laidlawii*)
- 广泛寄生于自然界中如人、哺乳动物、爬行动物、昆虫、植物

典型的支原体污染来源：

- 未检测细胞之间交叉污染
- 移液时产生的气雾
- 不同的细胞使用同一瓶的培养基
- 已污染的物质
- 已污染的捐献组织 (<1%)
- 来自实验者的直接污染

1) 支原体终止试剂

成功去除支原体，细胞毒性小

2) 支原体去除喷雾环境

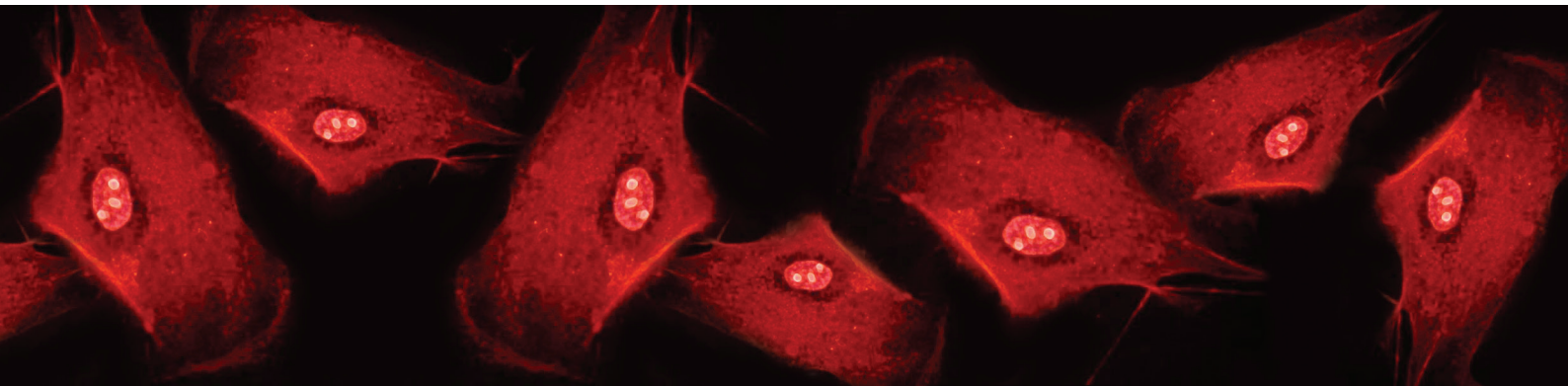
可靠的消除实验室台面仪器表面的支原体

3) 支原体预防试剂

预防支原体污染

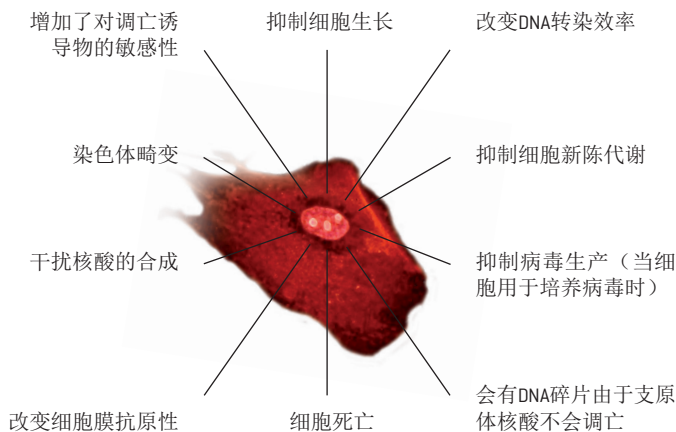
4) MycoZap™ Plus CL-PR预防试剂

广泛的预防微生物的污染、革兰氏阴性阳性细菌、真菌、支原体



细胞支原体污染的后果？

支原体生长缓慢，不会马上使细胞致死，但会影响细胞内的各种参数。



某些支原体种类甚至能降低四唑盐，引起四唑盐分析结果异常，以致会掩盖一些化合物的毒性影响，引起IC50值的变化。

支原体污染的隐蔽性

支原体污染很难检测和预防，很多时候支原体已经污染几个月还没有被发现。

- 相对于细菌污染，支原体污染不会引起浑浊或PH值改变等可见变化
- 即使在支原体高浓度 (> 10⁷ cfu/ml) 下，显微镜也不可见
- 大部分用于细胞常规培养的抗生素对支原体无效
- 常规的过滤也无法去除支原体

由于，支原体污染会严重影响实验结果的可靠性、重复性以及一致性。这是基础研究中一个主要问题，同时也是生物产品制造中的一个主要问题。所以对支原体的常规检测是一个非常重要的质控标准。

检测： MycoAlert (Plus) 支原体检测试剂盒 (for research use)

MycoAlert支原体检测试剂盒是检测支原体酶活性的生化检测方法。支原体酶广泛存在180多种支原体以及主要六大支原体污染细胞培养物中，但是在真核细胞中却没有。因此检测支原体酶的有无成为快速、灵敏的筛查支原体污染的标准。

优点

- 只需两步操作，20分钟内出结果
- 生物发光技术，--无需抽提DNA
- 新产品， MycoAlert PLUS试剂盒可用在灵敏度低的板式发光仪或多功能发光仪上
- 方便的酶分析控制方法，可用于监控系统是否运和正常

应用

- 可检测所有常规的支原体和甾原体的污染
- 可检测44种柔膜菌纲（支原体）物种
- 适用于研究中细胞培养环境的筛选
- 适用于检测新的培养基，水，添加物（如血清等）

分析原理

裂解支原体，被释放出的支原体酶与支原体检测试剂盒底物发生反应，从而催化ADP变成ATP。测量加底物前（read A）后（read B）ATP读数，通过前后ATP读数的比率来判断是否有支原体污染。如果没有污染，加底物后的读数与加底物前的读数相差不大，但是如有支原体污染，加底物后的读数与加底物前的读数就会相差数倍（图1）。新一代MycoAlert PLUS支原体检测试剂加强版能产生更强的光信号，因此新一代加强版能够用在板式 和多功能的化学发光仪上（图2）。

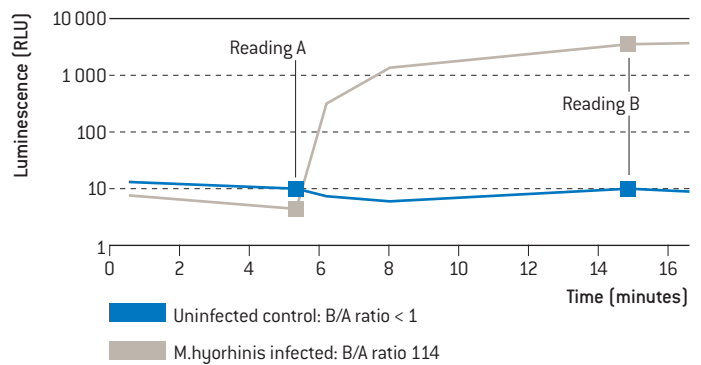


Figure 1
Kinetics of light emission for uninfected and infected cells using the MycoAlert™ PLUS Kit. The B/A ratio indicates the presence or absence of mycoplasma.

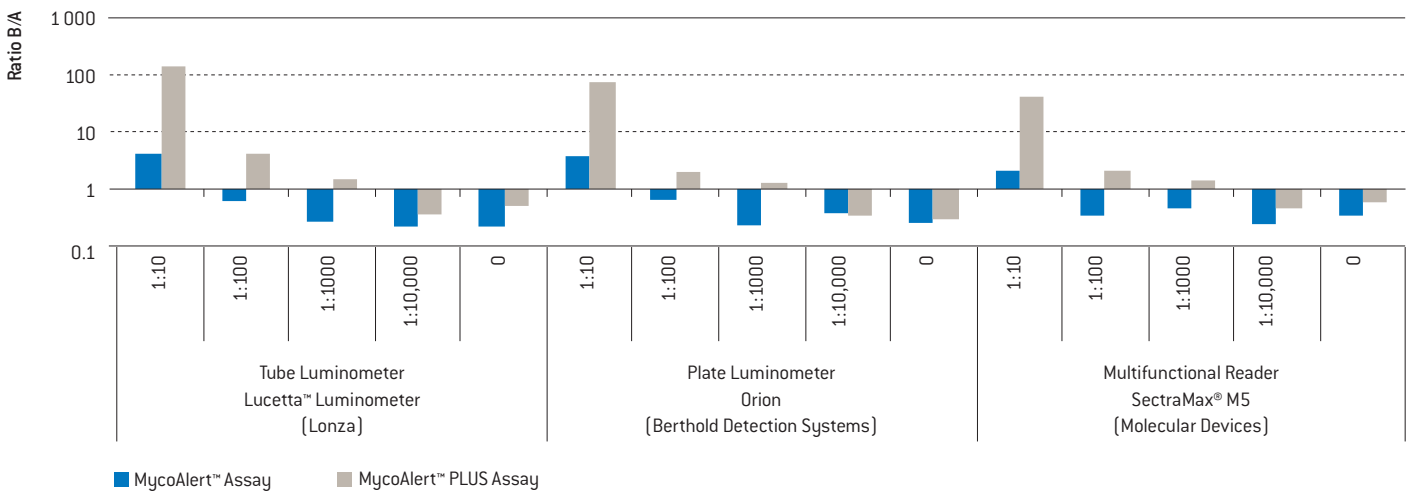


Figure 2
Performance of MycoAlert™ PLUS Assay compared to MycoAlert™ Assay. A dilution series of MycoAlert™ Assay Control demonstrates the increased sensitivity of various luminometer models when using MycoAlert™ PLUS Assay, compared to the first generation MycoAlert™ Assay.

Mycotool PCR快速支原体检测试剂盒-----用于放行检

现在Lonza提供Mycotool PCR快速支原体检测试剂盒，Mycotool PCR快速支原体检测试剂已获得EMA（欧洲药品管理局认证），并且是第一个商品化的用于放行检的产品。可替代传统耗时的放行检支原体检测方法。

优点

- 几个小时内出结果，而不是几天
- 唯一PCR产品可用于放行检
- 可靠的分析质控可帮助确保分析结果的正确性
- 根据不同的引物设计预计可检测99种柔膜纲物种包括支原体，螺原体，无胆甾原体
- 可检测10种浓度低于1CFU/ml支原体，准确率在95%以上

应用

- 适用于产品最终的支原体放行检测。
- 适用于所有细胞与基质的支原体检测如：疫苗，血清培养基，细胞培养物上清等。



Table

Mycoplasma species validated down to 1 CFU/ml at a 95% confidence level
[≥23 out of 24 positive]

Species	Claimed Sensitivity	Probit Analysis of Validation Data
	1 CFU/ml	CFU/ml
<i>A. laidlawii</i> *	+	<1.0
<i>M. arginini</i>	+	0.15
<i>M. fermentans</i>	+	0.29
<i>M. hominis</i> *	+	<1.0
<i>M. hyorhinis</i>	+	0.51
<i>M. orale</i>	+	0.11
<i>M. pneumoniae</i>	+	0.02
<i>M. salivarium</i>	+	1.41
<i>S. citri</i>	+	0.37
<i>M. gallisepticum</i>	+	not yet validated
<i>M. synoviae</i>	+	not yet validated

*For 1 CFU/ml 24 out of 24 positive; 0.5 CFU/ml and 0.1 CFU/ml not tested.

For use in quality control/manufacturing process only.
MYCOTOOL is a trademark of Roche.

支原体的去除与预防： MycoZap产品线

MycoZap支原体去除试剂

支原体无法通过无菌过滤去除。由于支原体没有细胞壁，常规的细胞培养抗生素（如青霉素）对它也不起作用。多数情况实验者丢弃已污染样品。

但是有时实验者出于某些原因不能丢弃已污染的样品，就可以通过MycoZap支原体去除试剂在4天内清除支原体。挽救他们的样品。MycoZap支原体去除试剂是专门优化用于去除支原体，对细胞毒性最小。它通过抗生素和抗代谢药剂的共同作用来终止支原体。这种方法高效可靠的去除支原体，从而解决单独的抗生素对支原体不起作用的问题。MycoZap支原体试剂可根除细胞培养中的柔膜纲污染包括支原体、甾原体、螺原体、虫原体。

全面、彻底的支原体去除试剂，

- 消灭支原体、甾原体、螺原体、虫原体
- 通过抗生素与抗代谢药剂的联合作用有效去除柔膜纲物种

有效而温和

- 细胞毒性最小化
- 广泛地适用于细胞培养

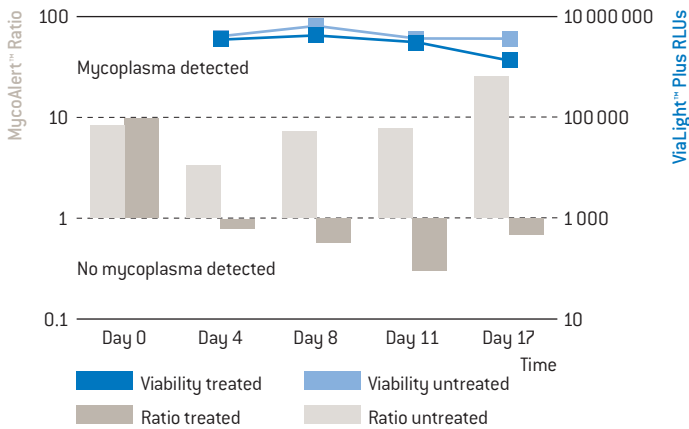


Figure 3
Effect of MycoZap™ Elimination Reagent on cell viability and mycoplasma removal. The MycoZap™ Reagent treatment eliminates mycoplasma in as few as 4 days with minimal impact on cell viability. Mycoplasma detection was performed with MycoAlert™ Assay and viability was determined by ViaLight™ Plus Assay.

MycoZap抗生素

MycoZap抗生素是一种极其有效的预防支原体污染的抗生素。MycoZap能够更全面的预防常规微生物的污染包括支原体。MycoZap Plus CL适用于细胞系培养的预防， MycoZap Plus PR优化用于原代细胞培养预防

	Mycoplasma Only Solution	All-in-one Solutions	
	Prophylactic	Plus-CL	Plus-PR
Prevention against mycoplasma	■	■	■
Prevention against - Gram (+) bacteria - Gram (-) bacteria - Fungi - Yeast	No; but can be used in combination with other antibiotic formula of choice detection and prevention	■	■
Suited for primary cells	■	■	■
Suited for cell lines	■	■	

MycoZap喷雾

最新的MycoZap喷雾是一种有效用于清除实验室表面支原体的溶液，例如清除实验室台面椅面，培养箱，细胞储存箱，液氮灌等。MycoZap喷雾能非常有效去除支原体。它是一种特殊的生物原料对支原体极其有效，与酒精一起能发挥更好的作用。

- 几秒内杀死支原体
- 无毒性无致癌物
- 有效预防各种有机体，包括包被与未包被的病毒，革兰性阴性阳性菌以及原生质体。
- 方便，即用、稳定


Ordering Information

Cat. No.	Description	Size
MycoAlert™ PLUS Kits		
LT07-701	MycoAlert™ PLUS Mycoplasma Detection Kit	10 tests
LT07-703	MycoAlert™ PLUS Mycoplasma Detection Kit	30 tests
LT07-705	MycoAlert™ PLUS Mycoplasma Detection Kit	50 tests
LT07-710	MycoAlert™ PLUS Mycoplasma Detection Kit	100 tests
LT07-518	MycoAlert™ Assay Control Set	10 tests

MycoZap™ Products		
LT07-818	MycoZap™ Mycoplasma Elimination Reagent	1 treatment
LT07-918	MycoZap™ Mycoplasma Elimination Reagent	5 treatments
VZA-2011	MycoZap™ Plus-CL	10 x 1 ml
VZA-2012	MycoZap™ Plus-CL	1 x 20 ml
VZA-2021	MycoZap™ Plus-PR	10 x 1 ml
VZA-2022	MycoZap™ Plus-PR	1 x 20 ml
VZA-2031	MycoZap™ Prophylactic	10 x 1 ml
VZA-2032	MycoZap™ Prophylactic	1 x 20 ml
VZA-2001	MycoZap™ Spray*	500 ml
VZA-2002	MycoZap™ Spray (refill)*	1 000 ml

MycoTOOL® Kits		
5200702001	MycoTOOL® PCR Mycoplasma Detection Kit (Includes: Prep kit, Amp kit)	10 samples
5184592001	MycoTOOL® Mycoplasma Detection Prep Kit	10 samples
5184240001	MycoTOOL® Mycoplasma Detection Amplification Kit	10 samples
5619424001	MycoTOOL® Carrier DNA	10 samples
6377599001	MycoTOOL® Alternative Housekeeping Gene Primer Mix*	10 samples
6537456001	MycoTOOL® Mycoplasma Detection Prep Kit, High Cell Density* (for 5 samples only)	10 samples

*MycoZap™ Spray is only available in Austria, Belgium, Denmark, France, Germany, Italy, Luxembourg, Netherlands, Poland, Spain, Sweden, Switzerland, UK and distributed countries on the European continent. For availability in other countries, please contact our Customer Service (for contact details please refer to back page).

 For more information, please visit www.lonza.com/mycoplasma

References

- Drexler HG, Uphof CC (2002) Mycoplasma contamination of cell cultures: Incidence, sources, effects, detection, elimination, prevention. *Cytotechnology* 39: 75–90
- Koshimizu K, Kotani H (1981). In: Procedures for the Isolation and Identification of Human, Animal and Plant Mycoplasmas (Nakamura, M., ed.), *Saikou, Tokyo*, 87–102.
- Gong H, Zölzer F, von Recklinghausen G, Rössler J, Breit S, Havers W, Fotsis T, Schweigerer L (1999) Arginine deiminase inhibits cell proliferation by arresting cell cycle and inducing apoptosis. *Biochem Biophys Res Comm* 261: 10–14.
- Ben-Menachem G, Mousa A, Brenner T, Pinto F, Zähringer U, Rottem S (2001) Choline deficiency induced by Mycoplasma fermentans enhances apoptosis of rat astrocytes. *FEMS Microbiol Letters* 201: 157–162
- McGarrity MF, Vanaman V, Sarama J (1984) Cyto genetic effects of mycoplasma infection of cell cultures: a review. *In Vitro* 20: 1–18
- Sokolova IA, Vaughan ATM, Khodarev NN (1998) Mycoplasma infection can sensitize host cells to apoptosis through contribution of apoptotic-like endonuclease[s]. *Immunol Cell Biol* 76: 526–534
- Doersen CJ, Stanbridge EJ (1981) Effects of mycoplasma contamination on phenotypic expression of mitochondrial mutants in human cells. *Mol Cell Biol* 1: 321–329
- Stanbridge EJ (1971) Mycoplasmas and cell cultures. *Bacteriological Reviews* 35: 206–227
- Darin N, Kadhom N, Brière JJ, Chretien D, Bébéar CM, Rötig A, Munnich A, Rustin P (2003) Mitochondrial activities in human cultured skin fibroblasts contaminated by Mycoplasma hyorhinis. *BMC Biochem* 4: 15
- Rottem S (2003) Interaction of mycoplasmas with host cells. *Physiol Rev* 83: 417–432
- Miller CJ, Kassem HS, Pepper SD, Hey Y, Ward TH, Margison GP. (2003) Mycoplasma infection significantly alters microarray gene expression profiles. *Biotechniques* 35: 812–814

Contact Information

Lonza China

上海市凯旋路369号龙之梦雅仕大厦
1710-1716室，邮编：200051

North America

Customer Service: 800 638 8174 (toll free)
order.us@lonza.com

Scientific Support: 800 521 0390 (toll free)
scientific.support@lonza.com

Europe

Customer Service: +32 87 321 611
order.europe@lonza.com

Scientific Support: +32 87 321 611
scientific.support.eu@lonza.com

International

Contact your local Lonza distributor
Customer Service: +1 301 898 7025
scientific.support@lonza.com

International Offices

Australia +61 3 9550 0883
Belgium +32 87 321 611

Brazil +55 11 2069 8800
France 0800 91 19 81 (toll free)
Germany 0800 182 52 87 (toll free)
India +91 40 4123 4000
Ireland 1 800 654 253 (toll free)
Italy 800 789 888 (toll free)
Japan +81 3 6264 0660
Luxemburg +32 87 321 611
Poland +48 781 120 300
Singapore +65 6521 4379
Spain 900 963 298 (toll free)
The Netherlands 0800 022 4525 (toll free)
United Kingdom 0808 234 97 88 (toll free)

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上海玮驰仪器有限公司

总公司：上海市浦东新区环科路999弄浦东国际人才港13号楼2楼
400-820-3556 | Marketing@weichilab.com

分公司：江苏省苏州市工业园区新平街388号21幢5层08单元
0512-65107980 | Marketing@weichilab.com



Lonza Cologne GmbH – 50829 Cologne, Germany

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