

THE EXPERIMENTAL STUDY IN DETECTION OF LEGIONELLA PNEUMOPHILA USING NESTED POLYMERASE CHAIN REACTION

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The nested polymerase chain reaction (Nested PCR) was used to detect legionella pneumophila. The oligonucleotide primers derived from the sequence of a gene that codes for the 24-kilodalton surface antigen of legionella pneumophila amplified DNA from all legionella species and non-legionella species tested. Only the DNA from legionella pneumophila was amplified. The first and second step PCR achieved the sensitivity as small as 10 pg and 10 fg of the target DNA, respectively. In the detection from legionella pneumophila seeded sputa, 0.1 cfu/ml of the bacteria could be detected and it took about 12 hours. The results showed Nested PCR was sensitive and specific in detecting legionella pneumophila. The method may become a useful tool in the early and rapid detection of legionella pneumophila in clinical specimens and environmental materials.

Key words polymerase chain reaction; legionella pneumophila

• 新成果 •

先天性色觉异常的色觉基因研究

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作者首次应用分子杂交技术对43例先天性红绿色觉异常患者及3个家系和正常对照进行了色觉基因分析。发现男性病例红色觉异常者全部有红色觉基因的异常,绿色觉异常可检测到绿色觉基因的异常。提出先天性色觉异常的主要原因是色觉基因的缺失和杂种基因的形成所致。红色觉异常是由于红色觉基因的缺失,而被5'红-3'绿杂种基因替代所致。绿色觉异常是由于绿色觉基因的完全缺失或/和形成5'绿-3'红杂种基因所致。组成杂种基因各部分的来源及其产物特性是产生色觉异常不同程度的分子基础。同一异常色觉基因在不同个体可以有不同程度的表型。通过研究证实了联合应用多个探针可提高异常色觉基因检出率。还建立了异常色觉基因的快速、简便、经济检测方法。该成果获1992年卫生部和广东省科技进步三等奖。

(冯世容)