



The Outlook of DR. Chip

DR. Chip Biotechnology Incorporation



Product Advantage of DR. Chip

The technology of DR. Chip will lead the food testing toward miniaturization



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The Advantage of DR. Chip's ELISA Kit



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Customers need to prepare



All you need is 30 m² space and 1 operator

Services of DR. Chip

- Lab planning and design
- Operate equipment
- Procedure teaching
- After-sales service
- Professional advice



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Food safety detection system

DR. ELISA

Extract



Centrifuge



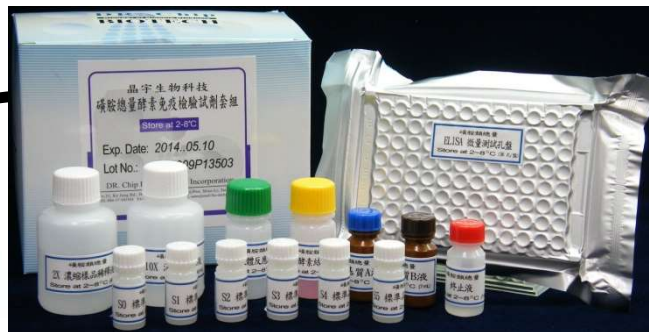
Concentrate



Screen & Result



Operating



Only in 2 hours



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They all choose DR. Chip



Industrial development of DR.CHIP

✓ **Human Diagnostics**

- 1) DR. HPV Genotyping IVD Kit
- 2) DR. MTBC Screen IVD Kit
- 3) DR. Microorganism IVD Kit
- 4) Contact lens(Subsidiary Operating)

✓ **Pathogen Screening Reserch**

- 1) DR. HBV IVD Kit
- 2) DR. RV (Respiratory Virus) IVD Kit
- 3) DR. EV (Enterovirus) IVD Kit

✓ **Food & Plant Science**

- 1) DR. Food-10 Kit
- 2) Betagro DR. Salmonella Kit
- 3) DR. Milk Kit
- 4) DR. Brewery Kit
- 5) DR. Orchid Kit

✓ **Apparatus**

- 1) DR. Mini Oven
- 2) DR. Fluidic Station
- 3) DR. AiM Reader





DR. Food-10

solve all problems of microorganism assay

DR. Chip

Ensure Food Safety

DR. Food-10™ Kit



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TROUBLES

when you use traditional microorganism assay method



Lots of people/materials



Mass experiment space



Pollutions of microorganism



Plenty of time



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DR. Food-10

solve all problems of microorganism assay



Immediately
Production line never stop



Cost Down !
(People/Time/Supplies)



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Certification of DR. Food-10 Chip

b) 検出キット類 食品衛生検査指針(2004)

製品名	用途	製造または販売元
PYR キット	鑑別用	アスカ純薬, 三菱ヤトロン, Oxoid
サルモネラチェック	イムノアッセイ	三菱ヤトロン
F-サルモネラ「生研」	イムノアッセイ	デンカ生研
サルモネラアッセイ	イムノアッセイ	Gene Trak
Dynabeads anti Salmonella	イムノアッセイ	Dynal
Salmonella-Tek ELISA	イムノアッセイ	オルガノ
Reveal	イムノアッセイ	Neogen
Assurance Salmonella EIA	イムノアッセイ	BioControl
Path-Stik Salmonella IC, Dip stick	イムノアッセイ	Lumac
TECRA Salmonella VIP	イムノアッセイ	セティ
Salmonella immunoassay	イムノアッセイ	Transia
Taq Man Salmonella PCR Amplification / Detection Kit	DNA アッセイ	PE ビオシステムズ
核さんテストサルモネラ Amplification / Detection Kit	DNA アッセイ	日本製粉
サルモネラ菌 (invA) 遺伝子, One Step PCR Screening Kit	DNA アッセイ	PE ビオシステムズ
DR. Food™ chip	DNA アッセイ	関東化学



ISO 13485(2016)



MANAGEMENT SYSTEM
CERTIFICATE

Certificate No. 241915-2017-ACHJAGCAG-PS Initial cert/validity date 07 October 2014 Valid 23 February 2022 - 24 February 2025

This is to certify that the management system of **DR. Chip Biotechnology Incorporation Science Park Branch**
No. 31, Ke Jung Rd., Hsinchu Science Park, Chu-Nan, Miao-Li 350, Taiwan

has been found to conform to the Quality Management System standard:
ISO 13485:2016 / EN ISO 13485:2016

This certificate is valid for the following scope:
Design, Manufacture, Sales, and Distribution of HPV Kits, TB Kits, and "DR. Chip" Microorganism ID Kits, and Salmonella Kits. Design, Manufacture, Sales, Servicing and Distribution of Mini Ovan and AIM Readers. Manufacture, Sales and Distribution of Mask.

For the audit date:
Nov. 21 December 2021



For the issuing office:
DNV Product Assurance AS
Veritasveien 5, 1365 Hovik, Norway

Christie Guderson Top
Dette er et elektronisk sertifikat.
Det er ingen papirversjon.

List of Affiliates of members is set out in the Certificate Agreement not shown. This Certificate holds ACCREDITED UNIT DNV Product Assurance AS, Veritasveien 5, 1365 Hovik, Norway. TEL: +47 27 57 00 00. www.dnv.com

SN/T 1543(2005)



中华人民共和国出入境检验检疫行业标准

SN/T 1543—2005

食源性致病菌基因芯片鉴定方法

GeneChip methods for identification of foodborne pathogens

2005-02-17 发布

2005-07-01 实施

中华人民共和国
国家质量监督检验检疫总局 发布



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Worried about fake meat?

You may trust DR. Meat

DR. Chip

DR. Meat™ Kit

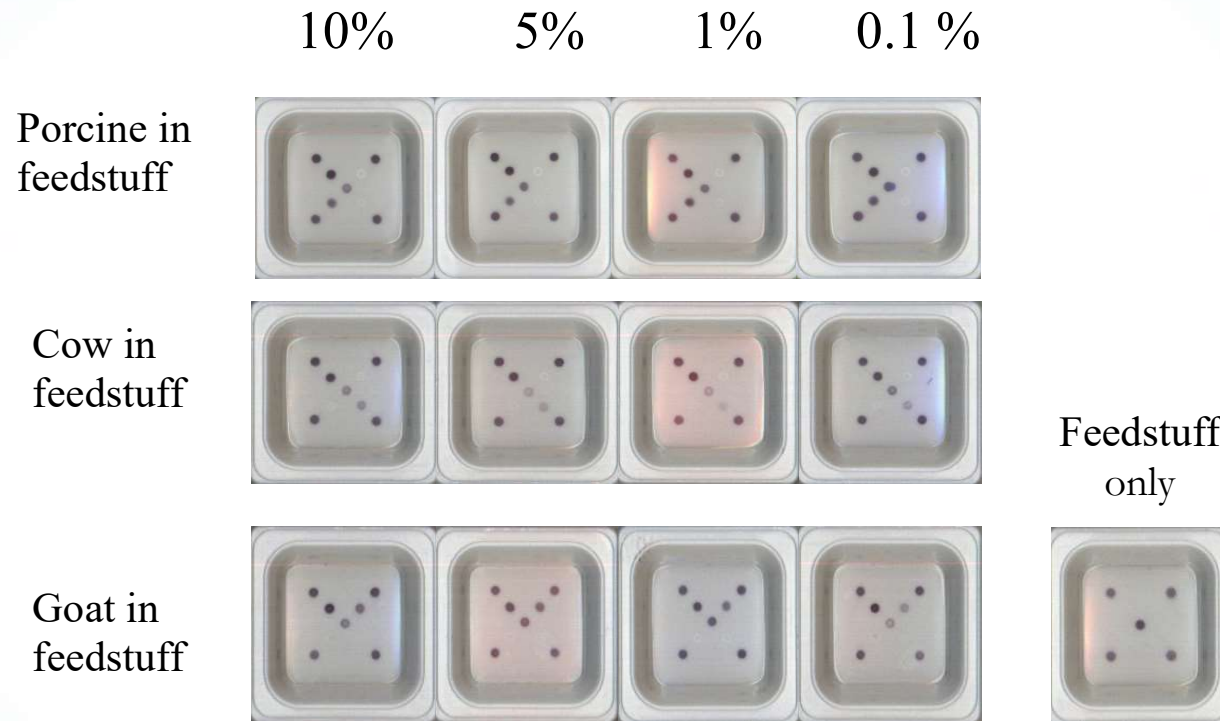


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DR. Meat

Extremely few meat also can be tested



⇒ Even though only 0.1% meat in feedstuff, it also can be tested.

⇒ DR. Meat can be used on “Vegetarian identification” and

“HALAL certification”



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DR. HPV Genotyping IVD Kit (晶宇人類乳突病毒基因分型檢測套組)

第三類查登許可證 - 第004934號



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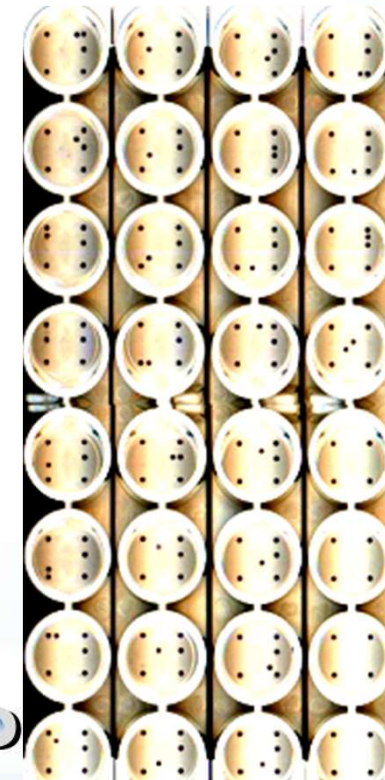
DR. HPV Genotyping IVD KIT

(晶宇人類乳突病毒基因分型檢測套組)

- 可同時偵測27種HPV型別，並具有一HPV共通性探針
- 階段式品管：PCR control (β -globin)，Hybridization control
- 高風險型別：HPV16/18/31/33/35/39/45/51/52/56/58/59/68/73/82
- 中低風險型別：HPV6/11/53/54/61/62/66/69/70/72/81/84

晶片判讀方向

B1	●	HPV16	A4	●	HPV68
C1	●	HPV18	B4	●	HPV69
D1	●	HPV31	D4	●	HPV70
E1	●	HPV33	E4	●	HPV73
A2	●	HPV35	F4	●	HPV82
B2	●	HPV39	A5	●	HPV6
C2	●	HPV45	B5	●	HPV11
D2	●	HPV51	C5	●	HPV54
E2	●	HPV52	D5	●	HPV61
F2	●	HPV53	E5	●	HPV72
A1, A6, F1, F6	●	Hybridization Positive Control	B3	●	HPV56
C4, D3	●	β -globin	C3	●	HPV58
A3	○	Negative control	E3	●	HPV59
C6	●	HPV consensus	D6	●	HPV62
			F3	●	HPV66





DR. MTBC Screen IVD Kit

(晶宇結核分枝桿菌群檢驗試劑套組)
第三類查登許可證 - 第003020號

DR. Chip Microorganism IVD Kit

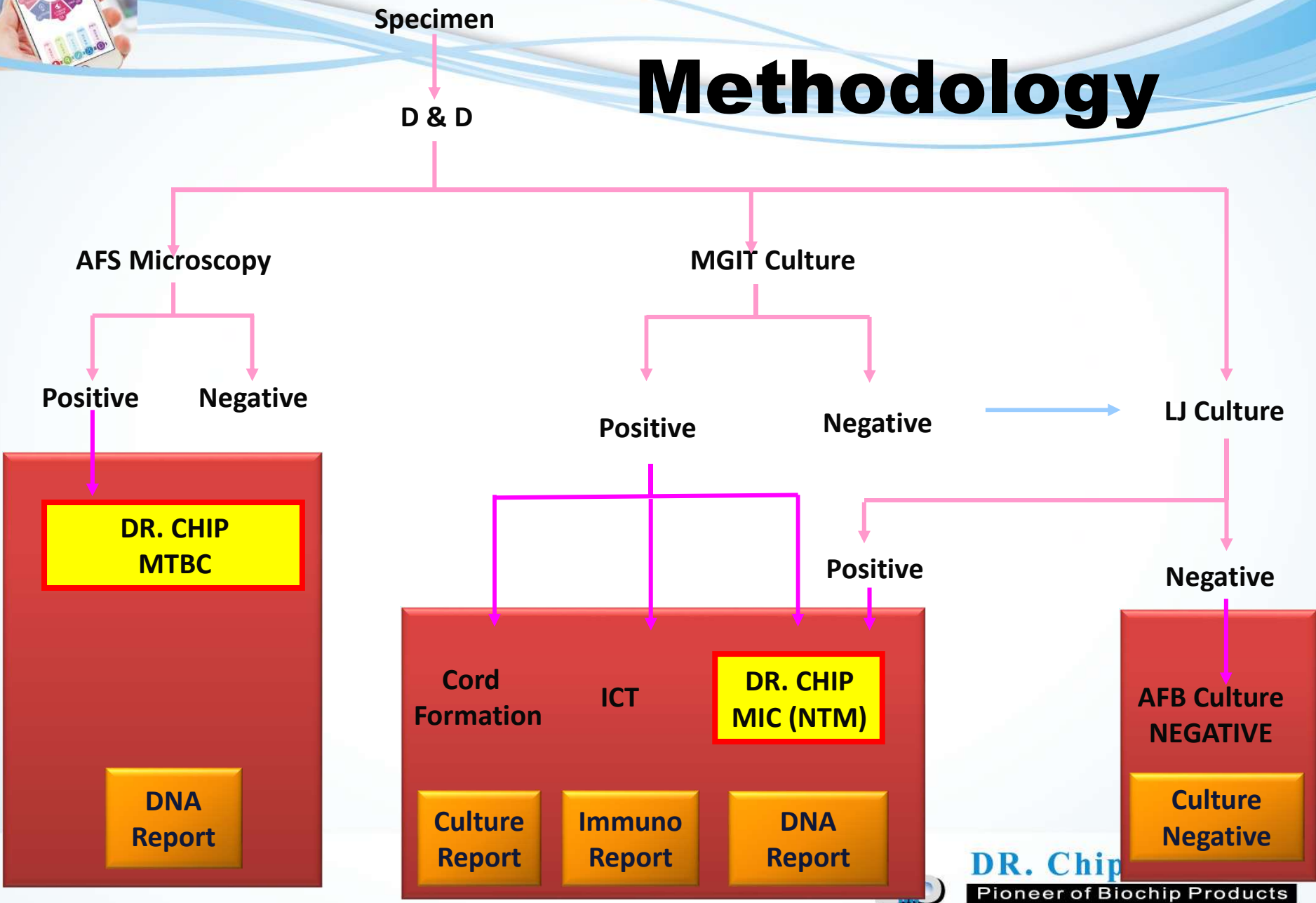
(晶宇微生物檢驗試劑套組)
RIF抗藥檢驗及17種非結核分枝桿菌分型
第一類查登許可證 - 第004446號



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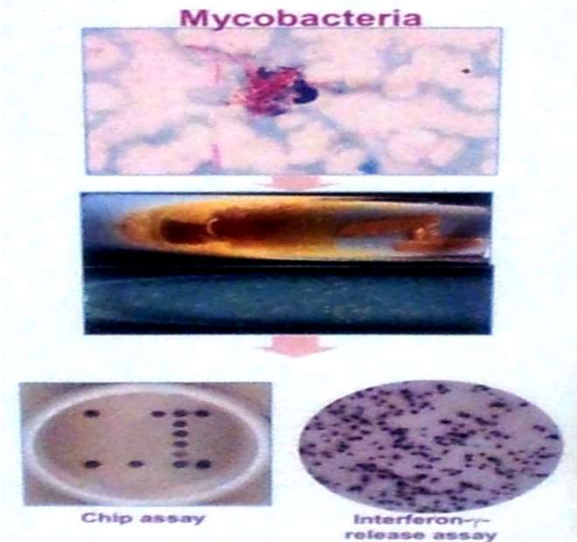


Methodology





USE STATUS



Investigation of the Distribution in *Mycobacteria* spp. with ITS Probe

利用ITS雜交探針探討分枝桿菌屬分布情形

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陳盟勳 黃紹宗 蔣佳蓉 張素英 曾美亨

研究背景
分枝桿菌 (*Mycobacterium*) 屬細菌包括許多已知及未知動物中造成嚴重疾病的病原菌，尤其為肺結核分枝桿菌 (MTBC, *Mycobacterium tuberculosis* complex) 最為重要。過去台灣肺結核盛行率高，但隨著抗結核分枝桿菌在分枝桿菌的比例較高，然而，隨著公共衛生與醫療的進步，MTBC 所佔的比例逐漸下降，但隨之非結核分枝桿菌 (NTM, Non-tuberculous mycobacterium) 的比例也逐漸上升。臨床上也發現 NTM 感染人的案例也增加趨勢。因此，探討分枝桿菌屬基因型 MTBC 及 NTM 已不完全滿足醫生的需求，故開發其他分枝桿菌屬型的快速工具，亦即探討雜交與聚合酶鏈式反應。

實驗目的
探討分枝桿菌屬及臨床常見之非結核分枝桿菌屬共計 12 型核 DNA 探針，分析各屬種的臨床感染病人的情形。

實驗設計
實驗流程
本研究利用分枝桿菌屬 16S-23S rDNA 內之轉錄間區 (ITS, internal transcribed spacer) 之其種類多變異性，被利用其鑑定分枝桿菌的型別。以 ITS 探針為引子進行聚合酶鏈式反應擴增，並利用分枝桿菌屬臨床常見之非結核分枝桿菌屬探針設計 DNA 探針，PCR 產物與探針進行雜交反應，利用 Biotin-streptavidin 方式呈色反應。最後從呈色反應所顯出即可判斷分枝桿菌屬之屬種，統計各屬種之數量，得到臨床分枝桿菌屬感染人之比率。

數據列表
從圖二探討分枝桿菌的分布，觀察其探針呈色顯示，即為該屬種之屬名。

實驗結果

Probe	Species	No.	Percentage
16S-23S ITS	MTBC	31	31.17%
16S-23S ITS	NTM	67	68.79%
16S-23S ITS	NTM	1	1.03%
16S-23S ITS	NTM	1	1.03%
16S-23S ITS	NTM	1	1.03%
16S-23S ITS	NTM	1	1.03%
16S-23S ITS	NTM	1	1.03%
16S-23S ITS	NTM	1	1.03%
16S-23S ITS	NTM	1	1.03%
16S-23S ITS	NTM	1	1.03%
16S-23S ITS	NTM	1	1.03%
16S-23S ITS	NTM	1	1.03%

結論
1800 株桿菌株分析，MTBC、NTM 混合感染 (mix infection) 所佔之比率分別為 40.78% (734/1800)、56.67% (1020/1800) 與 5.56% (45/1800)。其中非結核分枝桿菌中以 MAC (*M. avium* complex) 為 21.17% (351/1800)、*M. abscessus* 17.22% (311/1800) *M. fortuitum* 7% (125/1800) 所佔比例最高。其他如 *M. chelonae* 或 *M. malmoense* 及 *M. szulgai* 所佔比例較少 (0.33%、0.22% 與 0.39%) 故是仍會造成臨床病人的感染與傳播。

由以上可知，臨床非結核分枝桿菌 (56.67%) 造成感染的比率大於結核桿菌 (40.78%)。其中 MAC (21.17%) 為非結核分枝桿菌之多數，表示非結核分枝桿菌在臨床或感染人的情形已趨於普遍。過去，由於結核病是社會相當關注的公共疾病，如非結核菌感染率下降了，而 NTM 感染逐漸變重要，因此，未來非結核分枝桿菌的分子探針的開發。

Application of Genetic Diversity at 16S-23S rDNA Internal Transcribed Spacer for Identifying *Mycobacterium* by Probe Hybridization

利用探針雜交之方式鑑定分枝桿菌：16S-23S rDNA 內轉錄間區變異性的應用

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行政院衛生署胸腔醫院檢驗科
Meng-Hsun Chen, Shao-Tsung Huang, Chia-Jung Chiang, Tung-Huan Wu
陳盟勳 黃紹宗 蔣佳蓉 吳東桓

目的
臨床非結核分枝桿菌 (Non-tuberculous mycobacterium, NTM) 的感染與傳播，與分枝桿菌之屬種鑑定有關。現今研究探針許多非結核分枝桿菌屬之基因型，可針對這些屬種設計不同探針的 DNA 探針，以分子雜交方式進行分枝桿菌之屬種鑑定。

實驗設計
實驗流程
收集本院院檢體，進行消化去污染後置換成 L-J 培養基，將培養物接種到所得純化 DNA 提取 ASP-PCR 探針，以生化鑑定為標準，以評估 ITS 探針雜交之效果，如圖一所示。

實驗結果
本研究分析分枝桿菌屬培養物 105 株 (25 株 MTBC、80 株 NTM)。此種方法能檢出結核桿菌 25 株，正確率為 100% (25/25)。如表二，15 種非結核分枝桿菌 PCR 進行平行分析，結核桿菌一致性百分比 (PPA, Positive Percent Agreement) 為 100% (4/4)；非結核菌一致性百分比 (NPA, Negative Percent Agreement) 為 100% (12/12)。與 *M. tuberculosis*、*M. goodii*、*M. intracellulare*、*M. abscessus* 等 4 種標準菌株皆符合。

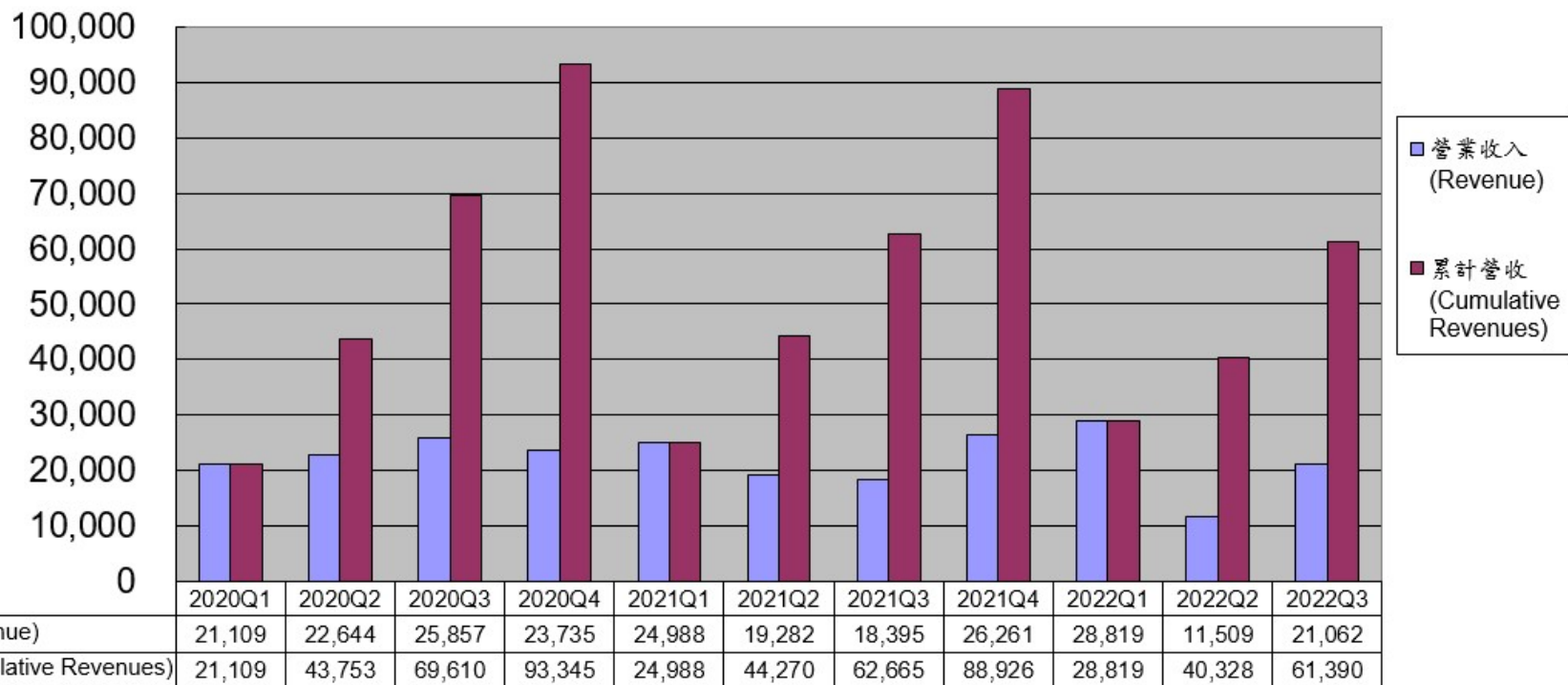
結論
由實驗結果顯示，利用分枝桿菌 ITS region 之變異性可將的結核菌鑑定，其結果與 ASP 相同。同時也可進行非結核分枝桿菌的鑑定，而且分子雜交較傳統生化鑑定快速，可以大幅減少人力與時間，提高檢驗報告的準確性。除此之外，探針可以檢測出分枝桿菌不同屬種，未來可以解決更多屬種的問題。



Financial status and risk of DR.CHIP

DR.CHIP is still at a loss state in recent years , so please investors should be prudent investment.

單位:仟元,每季(UNIT:THOUSAND,QUARTER)



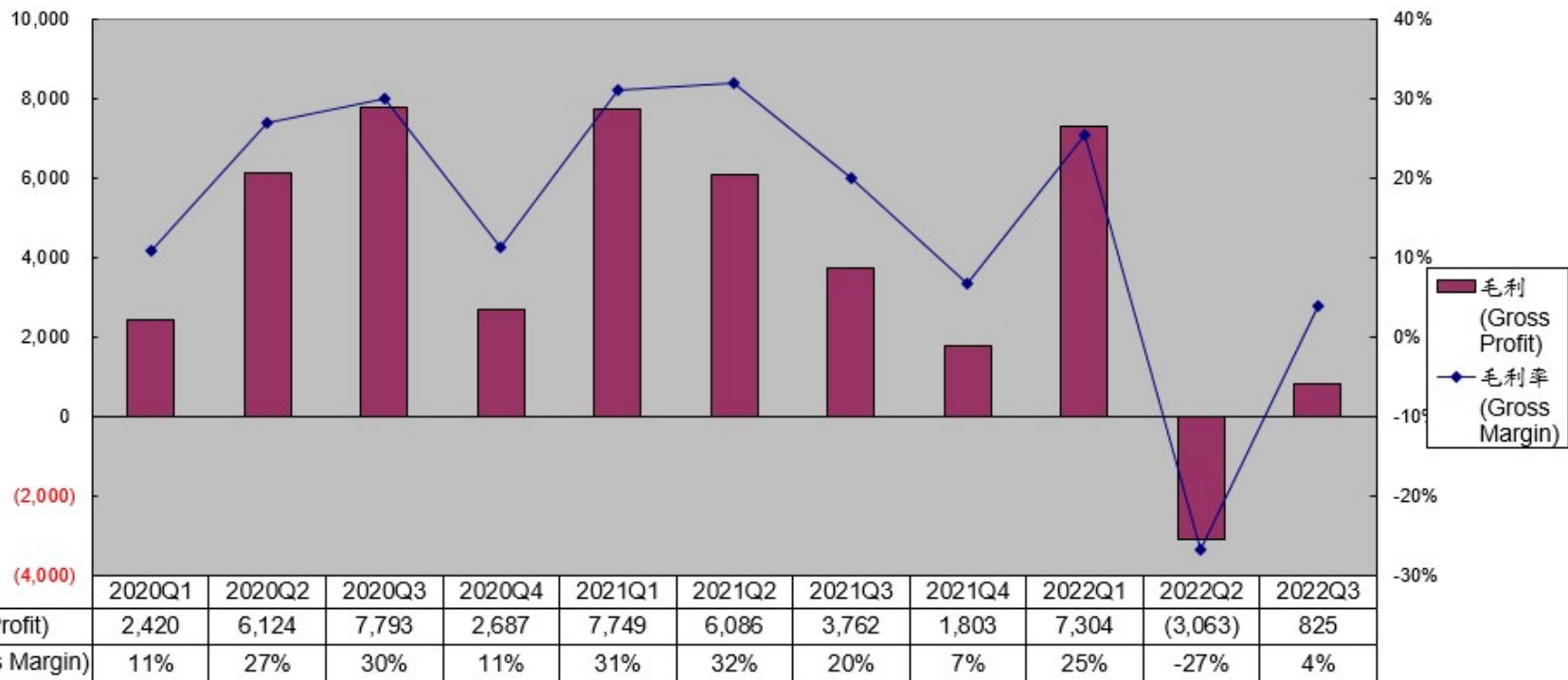
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單位:仟元,每季(UNIT:THOUASND,QUARTER)



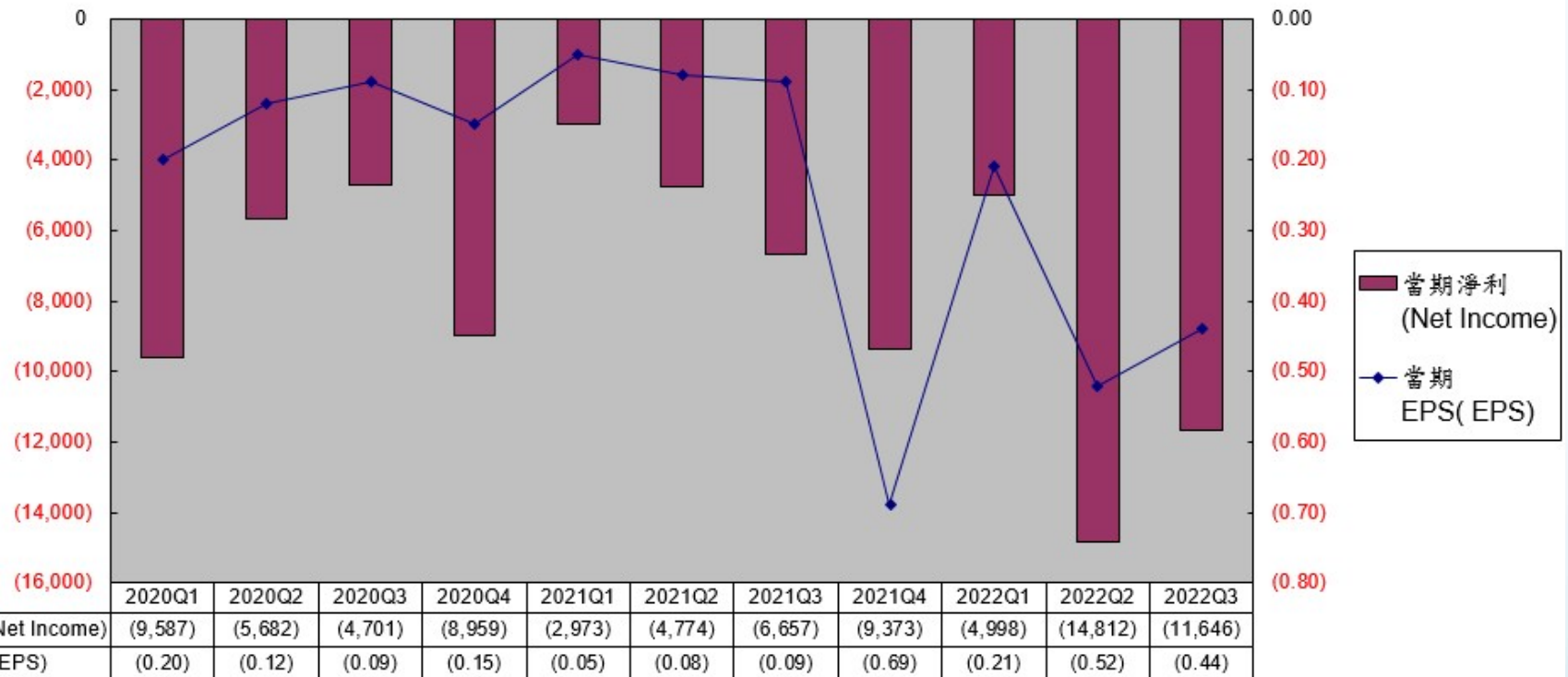
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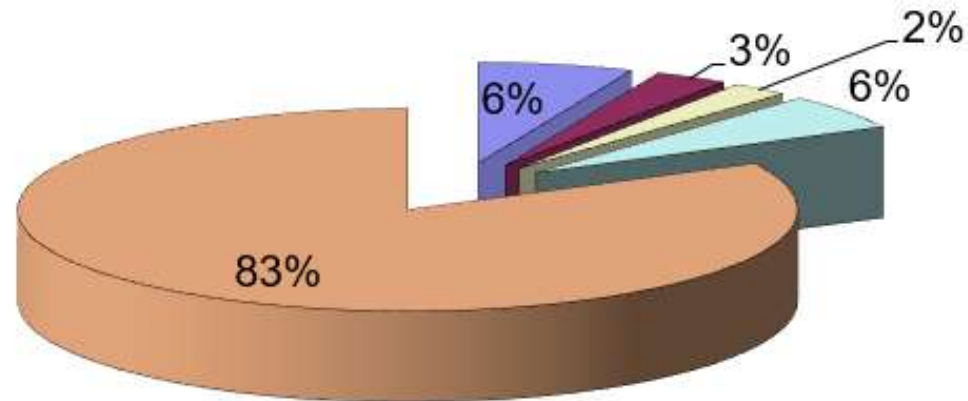
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2022 YEAR PRODUCT CATEGORY (UNIT:THOUASND)



- 子宮頸乳突病毒檢測套組(HPV KIT)
- 肺結核暨其抗藥性產品檢測套組銷售(TB KIT)
- 食安類檢測產品(FOOD KIT)
- 其他類(OTHER)
- 子公司隱型眼鏡營收(Subsidiary Operating revenue)



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THE END



DR. Chip BIOTECH
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