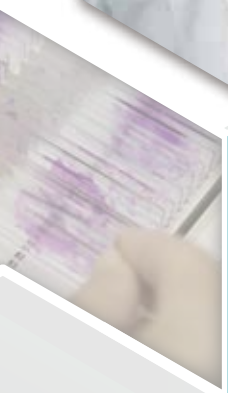
Taipei Institute of Pathology



Taipei Institute of Pathology

台北病理中心

2026年簡介

目　錄

董事長的話 A Message from Chairman

台北病理中心成立於民國 72 年 7 月，期間承蒙各 界的愛護指導與所有同仁的努力不懈，歷經多年的兢業耕耘，使得我們在病理檢驗方面的貢獻，獲得臨床醫療院所以及社會民眾一致的信任和肯定，也使得本中心得以繼續在穩定中求發展。

回顧過往，本中心的成立源自於民國 69 年，當時參與國建會的學者專家有鑑於國內醫界之發展偏重於臨床醫療，建議應設立國家級的病理中心，以確保醫療的品質。經多方努力籌備，終於 71 年 12 月底由臺北市政府與台北市公農田水利會共同捐助成立了「財團法人台北病理中心」。其後，本中心配合行政院衛生署之規定，於 97 年更名為「醫療財團法人病理發展基金會」，在基金會下設「台北病理中心」。

台北病理中心除提供「解剖病理」、「臨床病理」、以及「新生兒篩檢」的檢驗服務外，隨著醫學及生物科技的日新月異，近年來更跨足分子醫學領域，積極從事 B、C 肝炎檢驗、胃幽門螺旋桿菌檢測、藥物基因學檢測、以及癌症標靶藥物基因檢測等工作。未來本中心將秉持一如過往腳踏實地的工作態度，更加積極地落實與國際接軌的目標，期許本中心成為海內外皆信賴的國際級病理實驗室，透過精密的儀器設備和先進的技術，將最新的醫學研究成果應用於臨床診斷專業上，提供病人高品質的專業醫療服務。

為了持續提供穩定且高品質的檢驗服務，本中心於民國 93 年通過 TAF「全國認證基金會」的醫學實驗室認證，並獲頒「中華民國實驗室認證證書」，更於民國 99 年獲得「標竿實驗室」的殊榮。本中心所有工作同仁今後仍將百尺竿頭，堅持「檢驗精確、服務熱誠、效率卓越、專業團隊」的核心價值，為國內醫療的病理服務及研究教學貢獻心力。

本中心成立迄今，一向秉持尊重生命、視病猶親的情懷。故除了在專業上為維護國人健康而努力不懈，不斷追求病理檢驗技術的精進之外，也善盡醫療財團法人應有的社會責任，除持續關懷弱勢與慈善團體， 給予必要且適時的捐助外，也以實際的作為支持中心內外的多項醫學研究，雙管齊下使本中心努力的果實能夠幫助更多需要幫助的民眾。

期許本中心能在現有的基礎上，立足台灣，放眼世界，也期盼全體同仁再接再厲，持續提升醫療專業及品質，發展醫學研究並落實國際接軌，繼續為提供最優質的病理醫療服務全力以赴。

李郭鵬

Taipei Institute of Pathology (TIP) was established in July 1983. We are so grateful to all the supports and instructions from the society, hard working from all our staffs, and all these long turn efforts not only make our pathological reports being trusted by lots of medical facilities and citizens, that also light up the way of TIP in the future.

The Taipei Institute of Pathology was established in 1980, following a meeting of renowned experts attending the National Development Council. These attendees realized that the medical community overly relies on clinical practice to ensure the quality of medical care. Their recommendation led to the establishment of the Institute of Pathology. With much effort and preparation, the Taipei Institute of Pathology was finally established in December 1982 with funds donated by the Taipei City Government and the Taipei Liu-Gong Irrigation Association. To be consistent with the provisions set by the Department of Health, (now the Ministry of Health and Welfare) the institute was renamed “The Medical Foundation for Pathology Development”, with the Taipei Institute of Pathology(TIP) established under it in 2008.

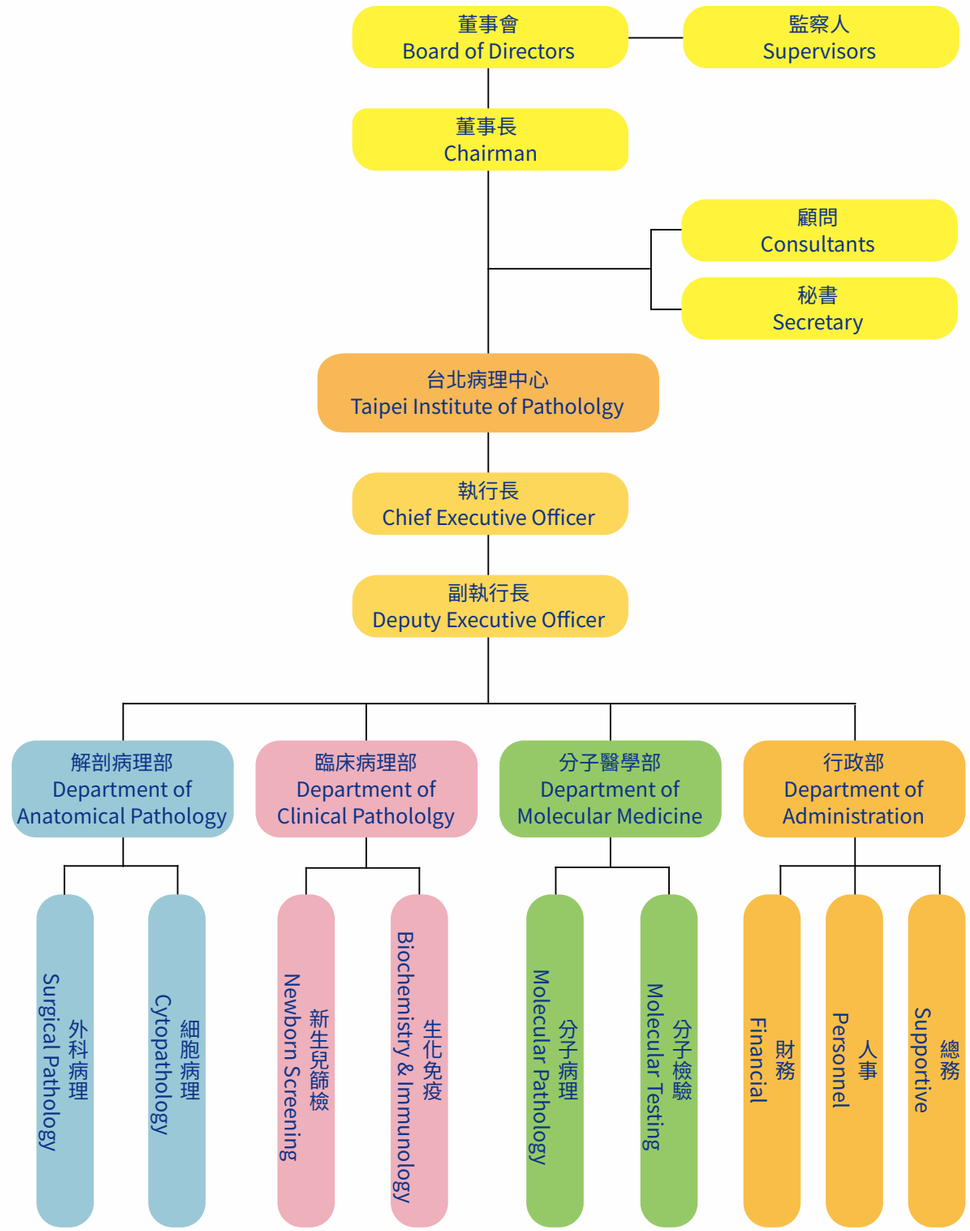
Aside from providing services for anatomical and clinical pathology as well as newborn screening, a molecular medicine lab was also established to cope with the rapid changes and advances in the world of medical biotechnology. Hepatitis B & C viral load and Helicobacter pylori testing were added to our present line of numerous tests. Pharmacogenetics, cancer target therapy related tests and research studies are some of the new platforms that were set up with respect to international standards and tendency, we expect TIP to become one of the reliable pathological labs soon. This new addition to our institution allows us to actively engage in education and research using precision equipment and advanced technology to offer the newest and most innovative medical research applications for improved clinical diagnostic services, supporting high quality and professional medical service to our patient.

For continuing to deliver consistent and high quality diagnostic services, TIP first conducted ISO 15189 system, and we completed the Medical Laboratory Accreditation process held by the Taiwan Accreditation Foundation (TAF) since 2004. After 6 years efforts, TIP had the great honor of being granted the award of “Benchmark Laboratory” from TAF in 2010. We expect continued success from all our colleagues by insisting on these core values: Accurate Diagnosis, Dedicated Services, Excellence in Efficiency and Professionalism in Teamwork. All our colleagues contribute to our nation’ s medical pathology services, research and education.

Since its establishment, TIP has upheld the belief in the respect for life, considering patients as members of our own family and dedicating its efforts towards social responsibility. We not only continue to seek progress in advancing pathology techniques to ensure good public health, but we also contribute to the many charities and in-time support for taking care of these disadvantaged minorities.

Standing on a strong foundation to explore the world, we hope that all our colleagues persist in their efforts to continuously upgrade the medical profession, develop medical research to meet international standards and continue to wholeheartedly provide excellent medical pathology services.

組織系統表 Organization Chart



第十二屆董事會及監察人 The 12th Board of Directors and Supervisor

依照本法人捐助章程第六條規定，本法人設董事會，置董事十五人，董事總額之五分之四由主管機關遴聘；第七條規定，本法人董事會置董事長一人，由當屆董事互選之；第八條規定，本法人置監察人三至五人，監察人總額之五分之四由主管機關遴聘。另依醫療法第四十三條規定，醫療財團法人之董事，以九人至十五人為限，具醫事人員資格者，不得低於三分之一，並有醫師至少一人。本法人第十二屆董事共十五位，其中八位具有醫師資格、三位具有醫事人員資格。

According to Article No. 6 of the TIP constitution, the board is composed of 15 directors of the foundation with 80% of candidates are assigned from the government; Article No. 7 states that the president is elected among the directors of the board; Article No. 8 maintains that there are 3 to 5 supervisors of the foundation with 80% of candidates are assigned from the government. A provision in Article No. 43 of the Medical Care Law specifies that the board of directors of the foundation can be composed of from 10 to 15 members, of which at least one third of the directors should be medical experts and at least one should be a doctor. Among the 15 directors of the 12th session of the board, 8 of them are doctors, and 3 of them are medical experts.

職稱：董事長
姓名：李飛鵬
臺北醫學大學講座教授暨名譽教授、台灣醫院協會理事長、財團法人醫院評鑑暨醫療品質策進會董事、臺北醫學大學董事

Title: Chairman
Name: Fei-Peng, Lee
Chair Professor and Honorary Professor of Taipei Medical University、Chairman of Taiwan Hospital Association、Director of Hospital Evaluation and Medical Quality Promotion Foundation、Director of Taipei Medical University

職稱：董事
姓名：楊芝青
衛生福利部技監

Title: Director
Name: Chih-Ching Yang
Counselor of Ministry of Health and Welfare

職稱：董事
姓名：劉玉菁
衛福部醫事司副司長

Title: Director
Name: Yu-Ching Liu
Deputy Director-General, Department of Medical Affairs of Ministry of Health and Welfare

職稱：董事
姓名：賈淑麗
衛生福利部參事

Title: Director
Name: Shu-Li Chia
Counselor of the Ministry of Health and Welfare

職稱：董事
姓名：賴瓊如
台灣臨床細胞學會監事、聯醫病理中心主治醫師

Title: Director
Name: Chiung-Ru Lai
Supervisor of the Taiwan Clinical Cell Biology Society, Attending Physician of the Lian-E Pathology Center

職稱：董事
姓名：蔡德龍
醫事檢驗師公會全聯會理事、台灣區醫事檢驗學會理事、新竹馬偕紀念醫院院長室主任

Title: Director
Name: Te-Lung Tsai
Director of the National Federation of Medical Laboratory Technologists, Director of the Taiwan Society of Medical Laboratory Science, Chief of the Superintendent's Office at Hsinchu Mackay Memorial Hospital

職稱：董事
姓名：蕭維德
永曜法律事務所主持律師、衛福部法規委員會委員

Title: Director
Name: Kevin Hsiao
Managing Partner of Sun shine Attorneys at Law
Member of Legal Affairs Committee of Ministry of Health and Welfare

職稱：董事
姓名：羅傳賢
衛福部法規會法規委員

Title: Director
Name: Chuan Hsien Lo
Professor of Central Police University
Member of Legal Affairs Committee of Ministry of Health and Welfare

職稱：董事
姓名：陳蕙君
銘傳大學法律學系專任副教授

Title: Director
Name: Hui Chun Chen
Full-time Associate Professor, Department of Law, Ming Chuan University

職稱：董事
姓名：黃建華
臺北市政府衛生局局長

Title: Director
Name: Jian Hua Huang
Director of the Department of Health, Taipei City Government

職稱：董事
姓名：王智弘
臺北市立聯合醫院總院長

Title: Director
Name: Zhi Hong Wang
Director of Taipei City Hospital

職稱：董事
姓名：陳永欽
農業部農田水利署瑠公管理處主任工程師代總務組長

Title: Director
Name: Yun-Chin, Chen
Chief Engineer, Acting General Affairs Team Leader, Lugong Management Office, Farmland and Water Conservancy Agency, Ministry of Agriculture

職稱：董事
姓名：楊偉勛
臺灣大學特聘教授、臺大醫學院臨床醫學研究所教授兼所長、臺大醫院醫學研究部主任

Title: Director
Name: Wei-Shiung, Yang
Distinguished Professor of National Taiwan University Professor and Director, Taiwan University College of Medicine Graduate Institute of Clinical Medicine
Director of Medical Research Department, National Taiwan University Hospital

職稱：董事
姓名：林肇堂
臺灣大學特聘教授、義大醫療決策委員會副主任委員

Title: Director
Name: Jaw-Town, Lin
Distinguished Professor of Taiwan University
Academic Associate Dean of E-Da Hospital

職稱：董事
姓名：江千代
臺北市立聯合醫院婦幼院區兼任主治醫師

Title: Director
Name: Chen Dai Jiang
Doctor of Taipei City Hospital

職稱：監察人
姓名：周麗芳
政治大學財政學系教授、衛福部「全民健康保險會」委員

Title: Supervisor
Name: Li-Fang, Chou
Professor of Department of Public Finance, National Chengchi University
Member of National Health Insurance Committee of Ministry of Health and Welfare

職稱：監察人
姓名：楊文理
臺北市立聯合醫院陽明院區小兒科兼任主治醫師

Title: Supervisor
Name: Wen-Li Yang
Doctor of Taipei City Hospital

職稱：監察人
姓名：陳石池
臺大醫學院名譽教授、臺大醫學院急診醫學科教授、臺大醫院急診醫學部顧問醫師

Title: Supervisor
Name: Shyr-Chyr Chen
Honorary Professor of NTU Medical School
Professor of Emergency Medicine, NTU Medical School
Consultant Physician of Emergency Medicine, NTU Hospital

職稱：監察人
姓名：楊平世
台北市錫瑠環境綠化基金會董事長

Title: Supervisor
Name: Ping-Shih Yang
Chairman of Hsi Liu Environmental Greening Foundation

職稱：監察人
姓名：黃瑞仁
天主教輔仁大學附設醫院院長

Title: Supervisor
Name: Rui-Ren Huang
Superintendent of Fu Jen Catholic University Hospital

我們的宗旨 Our Objectives

本中心成立的主要目的以熱忱負責與高效率的工作態度，配合臨床需求，提供能與國際接軌的病理檢驗技術，協助提昇國內整體的醫療品質。

為達成我們的品質政策，訂定了以下品質目標：

(一) 開發新的檢驗方法與項目
(二) 更新改良檢驗儀器
(三) 改善實驗室工作環境
(四) 學習專業新知
(五) 參與國際性的學術交流
(六) 提昇顧客滿意度

The objective of our institute is to encourage an enthusiastic, responsible and highly efficient work attitude for: supporting clinical needs; providing pathology testing techniques that meet international standards; and working hand-in-hand with other medical institutions to continually upgrade the medical services as a whole in Taiwan.

The following goals have been set up to achieve a high standard of quality.

1. Develop new testing methods and items for better services.
2.Improve and renew testing equipment.
3.Improve the laboratory environment.
4.Learn and introduce new technical knowledge.
5.Participate in international academic affairs.
6.Meet customer needs and improve customer satisfaction.

未來展望 Future Prospect

我們目前主要的業務如下：

(一) 接受委託辦理病理檢驗業務
(二) 從事病理技術之研究及成果之推廣事項
(三) 從事公共衛生及預防醫學之研究事項
(四) 辦理疾病預防、新生兒篩檢、健康檢查等保健服務事項
(五) 辦理人體中環境危害物質之檢測
(六) 協助公私立醫療院所從事病理相關及醫事技術人員之訓練及交流
(七) 辦理其他有關病理學術技術研究發展事項

未來我們將繼續以兢兢業業的精神，承接醫療院所委託之病理檢診，提供高品質的病理結果報告；開發新的罕見遺傳疾病之篩檢方法與應用，嘉惠更多的新生兒；配合醫學的最新發展，開發新的腫瘤基因檢測項目，提供臨床癌症標靶治療所需的資訊；建立能與國際接軌之平台，成為臨床試驗重要的病理中心實驗室；並持續擴大辦理與病理檢驗有關之社會服務，本著「取諸社會，用諸社會」之精神，為守護國人的健康而努力。

Our current major tasks are as follows:

1. To conduct referral pathology testing services
2. To promote new research in pathology technology and promote its outcome
3. To conduct research in public health and preventative medicine
4. To promote disease prevention, newborn screening, health checks, and other health services
5. To conduct testing for environmental hazardous substances in the human body
6. To assist in training and exchanges of pathology related medical updates among technicians in public and private hospitals
7. To organize pathology related academic research and work development

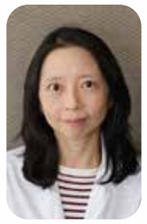
In the future, we will continue to work with the spirit of responsibility and conscientiousness to: provide high quality pathology reports; develop new testing and applications for screening rare genetic diseases, thus providing more benefits to newborns; utilize the latest medical techniques in developing new tumor gene detection tests, thereby providing the needed information for clinical cancer target therapy; and to establish a platform that meets international standards. The words “From the society, to the society” or giving back to the community, by thriving for and guarding the health of our fellow countrymen, has become our ultimate goal. It is the hope of TIP to continuously expand pathology services to the society.

工作團隊 Our Team

董事長：李飛鵬
Chairman of the Board
Fei-Peng, Lee

執行長兼分子醫學部主任：顧文輝
CEO & Chief, Dept. of Molecular Medicine
Ku, Wen-Hui

副執行長兼臨床病理部主任：何慧珍
Deputy CEO & Chief, Dept. of Clinical Pathology
Ho, Hui-Chen



解剖病理部主任：謝怡悅
Chief ,Dept. of Anatomical Pathology
Hsieh, Yi-Yueh

行政部主任：呂正期
Chief,Dept. of Administration
Lu, Cheng-Chi

技術主任：陳玉華
Chief of Medical Technologist
Chen,Yu-Hua

醫師：吳孝平
Pathologist
Wu,Hsiao-Ping

醫師：龔士雅
Pathologist
Kung, Shih-Ya

醫師：吳君潔
Pathologist
Wu, Chun-Chieh

醫師：林賜恩
Pathologist
Lin Sey-En

醫師：簡惠萍
Pathologist
Chien, Hui-Ping

醫師：林脩浩
Pathologist
Lin, Shiou-Fu

技術組長：林怡伶
Supervisor of Medical Technologist
Lin, Yi-Ling

技術組長：王里勻
Supervisor of Medical Technologist
Wang, Li-Yun

財務組長：沈佳蓉
Supervisor of Financial Section
Shen, Chia-Jung

人事組長：邱漢軒
Deputy Supervisor of Personnel Section
Chiu, Han-Hsuan

技術副組長：陳淑娟
Deputy Supervisor of Medical Technologist
Chen, Shu-Chuan

技術副組長：孔雯萍
Deputy Supervisor of Medical Technologist
Kong, Wen-Pyng

技術副組長：葉淑萍
Deputy Supervisor of Medical Technologist
Yeh, Shu-Ping

技術副組長：吳信宏
Deputy Supervisor of Medical Technologist
Wu, Hsin-Hung

行政部門 Department of Administration

行政部係配合業務單位之需求提供相關服務，現有主任一人、組長二人及其他同事四人，其主要業務如下：

一、總務組
- 辦公用品之採購管理
- 文書收發檔案之管理
- 辦公場所之安全維護
- 污染物及廢棄物之處理
- 財產設備之管理維修及其他總務事宜

二、人事組
- 員工勤惰之管理
- 員工聘用之管理
- 員工考核及獎懲
- 員工自強活動
- 員工福利事項及其他人事事宜

三、財務組
- 財務收支及出納管理
- 會計事務處理
- 資金調度
- 年度預算決算之編製
- 應收帳款及其他財務事宜

Provide services to meet the needs of business units. There are 1 Chief director, 2 section Supervisors, and 4 staffs. Main activities are as follow:

1. General Affairs Section
- Procurement and Management of office supplies
- Management of sending and receiving documents files
- Maintenance of office safety
- Treatment of pollutants and waste
- Facilities management and maintenance and other general matters

2. Personnel Section
- Attendance management
- Employment management
- Evaluation, rewards and punishments
- Entertainment activities
- Welfare and other relevant matters

3. Financial Section
- Financial revenues and expenditures and cashier management
- Accounting information management
- Fund application
- Controlling and auditing annual expenditures
- Accounts receivable and other financial matters

解剖病理部 Department of Anatomical Pathology

解剖病理部早年成立的宗旨，乃是為台北市立醫院培訓病理醫師。自成立以來，共有八位病理醫師經由本部門訓練且取得病理專科醫師執照，現任職於各大醫院，本部門已完成草創時期的目標。目前以提供各中小型醫院與診所優良的病理檢診服務為主，近年來又研發分子病理診斷，期以更先進的診斷方式，配合提供進步的臨床醫療需要，成為臺灣地區的標竿實驗室。解剖病理部目前為臺灣地區最大的婦女子宮頸抹片篩檢中心之一，工作人員陣容堅強，共有病理醫師 7 人，醫檢師 21 人 (其中 16 位具有細胞醫檢師執照) ，技術員 2 人，文書人員 6 人，檢體收件員 1 人。

主要業務可分為以下各項 :

(一) 外科病理

1. 病理切片檢診　2. 冰凍切片檢診
3. 特別染色　4. 免疫組織化學染色
5. 組織蠟塊及石蠟切片製作

The main functions are as follows :

(1) Surgical pathology
1.Pathology biopsy diagnosis
2.Frozen biopsy diagnosis
3.Special staining
4.Immunohistochemistry staining
5.Paraffin tissue block and paraffin section production

(二) 細胞病理：

1. 子宮頸抹片檢查：
婦女子宮頸抹片篩檢，是早期發現子宮頸癌最簡便最有效的方法，全民健康保險於民國 84 年開始，提供 30 歲以上婦女每年一次子宮頸抹片檢查。本中心為衛生福利部國民健康署所認可之病理醫療機構，所檢驗之結果皆可經由線上直接申報篩檢個案資料。

2. 液態薄層細胞學檢查：
有別於傳統檢驗方式，將採樣後的細胞檢體，裝進一個盛有特殊保存液的瓶子內，經微電腦抹片製作儀，將檢體製作為薄層抹片。主要應用於處理婦科和非婦科細胞學檢體。

3. 非婦科抹片：
除了子宮頸抹片以外之剝落細胞學檢查均屬之，包含兩大類，第一大類體液細胞檢查， 含痰、尿、腹水、腦脊髓液、胸水、心包膜積水、氣管刷取及氣管沖洗液等。第二大類穿刺細胞檢查，含甲狀腺、淋巴腺、乳房、肺臟、肝臟、胰臟、腫瘤等穿刺細胞檢查。

The primary aim for the establishment of the Department of Anatomical Pathology was to train pathologists in the Taipei City government hospitals. Since that time, 8 pathologists have been trained and licensed and are currently working in various well-known hospitals, thus fulfilling our initial objective. Our current focus is on providing quality diagnostic services for hospitals and clinics. In recent years, the institute has also set up and developed the Molecular Pathology Diagnosis Lab, earning it a national recognition as a “Benchmark Laboratory,” for its advanced diagnostic methods and comprehensive clinical services. The Department of Anatomical Pathology is currently one of Taiwan’ s biggest Pap smear screening centers. Our highly experienced team includes 7 pathologists, 21 technologists (16 of them are cytotechnologists), 2 laboratory technicians, 6 clerical staff, and 1 specimen collection staff members.

液態薄層抹片製片機
Cellprep PLUS

(2) Cytological pathology :

1. Cervical smear:
The Pap smear examination is the simplest and most effective way for early stage detection of cervical cancer. Since the establishment of the National Health Insurance Program in 1995, females aged 30 and above have been entitled to free annual Pap smear examinations. Our institute is recognized by the Department of Health (now Ministry of Health and Welfare) as a certified pathology medical institution, that registers reports directly with the government's screening statistics program.

2. Liquid-based cytology (LBC)：
This procedure is different from the traditional method in which the collected specimen is placed into a vial containing a pecial preservative. The sample is then made into a thin smear by an automated smear- making instrument. It is a technique that has gained popularity as a method of processing both gynecologic and non-gynecologic cytologic specimens.

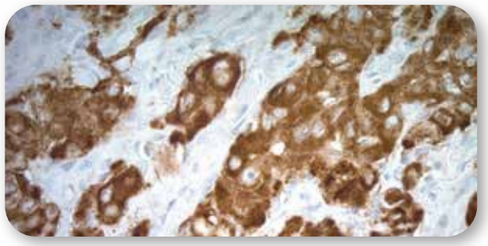
3. Non-gynecological body fluid cytology:
An Exfoliative Cytology examination includes 2 other categories apart from the Pap smear. The first is the body fluid cytology exam, which includes testing of sputum, urine, ascitic fluid, cerebrospinal fluid, pleural effusion, pericardial fluid, bronchial brushing, and bronchial washing. The second is the aspiration cytology examination, which includes the thyroid, lymph node, breast, lung, liver, pancreas, and tumor aspirations.

4. 人類乳突病毒篩檢：
經過醫界半世紀的努力，子宮頸癌的致病原因，已經確認和人類乳突病毒有高度的相關性，人類乳突病毒是雙股 DNA 病毒，有超過 100 種型別，其中 30-40 型別式透過性行為傳染，其中和引發癌症相關的型別稱為「高危險型」約 13 種，分別為 16、18、31、33、35、39、45、51、52、56、58、59、68。經由人類乳突病毒檢驗篩檢，更早檢查身體遭病毒感染的警訊，幫助女性早期發現，早期治療。

免疫染色機
VENTANA BenchMark® ULTRA

(三) 分子病理 :

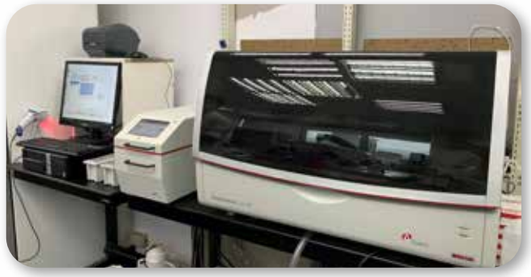
1. 肺癌間變性淋巴瘤激酶（ALK）蛋白的檢測：
使用 OptiView DAB IHC 檢測套組檢測， 並搭配自動免疫組織化學染色機系統，主要針對經過福馬林固定與石蠟包埋之非小細胞肺癌組織檢體，抗 -ALK（D5F3）兔子單株抗體是一個一級單株抗體，它能和檢體中 ALK 結合，並藉由使用 OptiView DAB IHC 檢測組及 OptiView 放大套組，此特異性抗體便可以在光學顯微鏡下肉眼觀察。此檢測可輔助篩選適合 XALKORI(crizotinib) 治療的患者。



ALK

2. 乳癌 HER-2/neu 的基因擴增檢測：
使用 HER2 Dual ISH DNA Probe Cocktail 檢測。針對經過福馬林固定與石蠟包埋之人類乳癌和胃癌組織檢體，搭配全自動多功能組織病理染色系統，利用雙色原位雜交染色技術，可直接在光學顯微鏡下量化 HER2 基因擴增的現象。此檢查主要為評估病患是否適合接受 Herceptin(trastuzumab) 治療。

4. Human papilloma virus DNA testing:
After 50 years of relentless research, it has been confirmed that cervical cancer is definitely linked to the Human Papilloma virus (HPV) infection. The HPV genome is a double-stranded DNA with more than 100 genotypes of which 30~40 are sexually transmitted. Thirteen of them, namely Types 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59,and 68 are considered “high risk” types related to cancer. HPV screening allows early detection and early treatment if necessary.

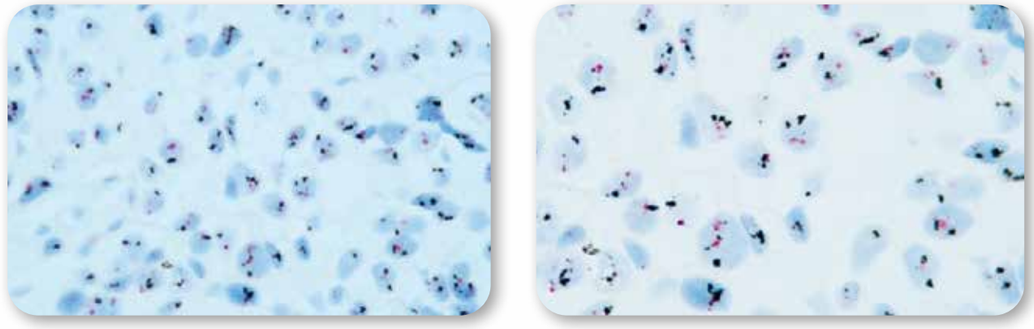


免疫染色機
Dako Autostainer Link48

(3) Molecular Pathology:

1. Anaplastic lymphoma kinase (ALK) Protein for lung cancer detection:
The OptiView DAB IHC Detection Kit and automated immunohistochemical staining with automatic systems, primarily uses formalin-fixed and paraffin-embedded non-small cell lung cancer tissue specimens. The anti-ALK (D5F3) rabbit monoclonal antibody is the primary monoclonal antibody that combines ALK and specimens. By using the OptiView DAB IHC detection Unit and OptiView amplification kit, this specific antibody can be visually observed under an optical microscope. This test assists in screening suitable candidates for XALKORI (crizotinib) treatment.

2. HER2/neu gene amplification for breast cancer detection:
The HER2 Dual ISH DNA Probe Cocktail was designed to quantitatively detect amplification by microscopy; the HER2 gene, via two colour chromogenic in situ hybridization(ISH) in formalin-fixed, paraffin-embedded human breasts; and gastric cancer, including the gastroesophageal junction. Following staining on automated slide strainers, the result can be used as an aid in the assessment of patients for whom Herceptin (trastuzumab) treatment is being considered.



DISH

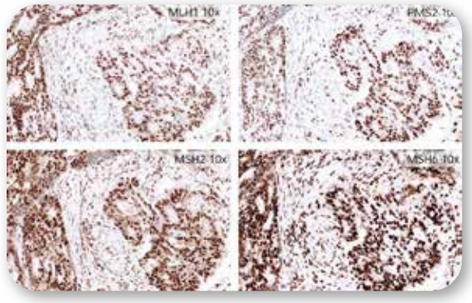
3. 肺癌 PD-L1 蛋白檢測：
PD-L1 是一種表現在腫瘤細胞上的生物免疫標記。透過檢測癌症細胞是否具有 PD-L1 蛋白，可協助臨床醫師判斷病人是否適用目前的免疫抗癌療法。現在對非小細胞肺癌進行 PD-LI 檢測的方法主要為免疫組織化學染色， 在經福馬林固定及石蠟包埋處理後的組織檢體，透過自動化的染色系統，有多家廠商生產的不同 PD-L1 抗體株可供選擇，染色結果可作為使用不同的肺癌免疫治療用藥之參考依據。

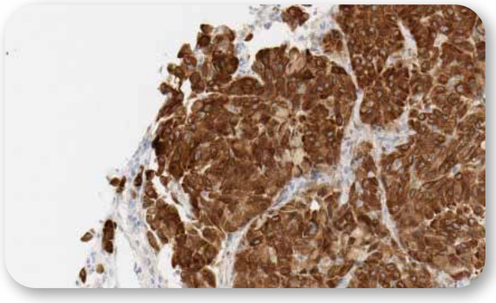
3. PD-L1 is an immune-related biomarker that can express in the tumor cells. The patients' eligibility for anti-cancer immunotherapy highly relates to the expression of the PD-L1 protein in the tumor. The primary detection method for the PD-L1 protein in non-small cell lung cancer (NSCLC) is immunohistochemical stains. With the automatic immunohistochemical staining system, a variety of PD-L1 antibody clones produced by different manufacturers could be applied on the formalin-fixed and paraffin-embedded tissue specimen. The staining results aid the clinicians in the decision on whether or which anti-cancer immunotherapy they should prescribe for the patient.

PD-L1

4. 大腸直腸癌 MMR 核酸誤配修復基因檢測： 遺傳性非息肉大腸直腸癌 (Hereditary nonpolyposis colorectal cancer; HNPCC) 是遺傳性大腸直腸癌最常見的疾病之一，約佔所有大腸直腸癌的 2-5%。主要是由於核酸誤配修復基因 (Mismatch repair gene；MMR gene) 突變所導致，這些基因產物主要負責細胞內基因修復相關工作，包含：MLH1、MSH2、MSH6、PMS2，這四個基因突變是目前被證實誘發 HNPCC 產生的主要基因，因此利用 IHC 檢測癌組織中 MMR 基因 之蛋白質表現，若喪失則表示其相對的基因有突變而失去其功能。

4. Mismatch repair gene (MMR gene) for colorectal cancer detection :
Hereditary nonpolyposis colorectal cancer (HNPCC) is one of the most common diseases of hereditary colorectal cancer, accounting for about 2-5% of all colorectal cancers. It is caused by the mutation of mismatch repair gene (MMR gene). These gene products are mainly related to gene repair in cells, including: MLH1, MSH2, MSH6, and PMS2. These four gene mutations that induces HNPCC production is confirmed. Therefore, IHC is used to detect the protein expression of MMR gene in cancer tissue. If there is no expression, it means that the relative gene has mutated and loses its function. intraepithelial lesion), or in patients with positive high-risk HPV test results.





ROS1

5. 肺癌 ROS1 蛋白檢測：
ROS1 是一種胰島素受體家族中的酪胺酸激酶受體。在非小細胞肺癌中，多種 ROS1 基因的融合配偶體已確認，這些融合蛋白具有激酶活性，可增強細胞生長與增殖並減少細胞凋亡。此檢測可輔助篩選適合 XALKORI(crizotinib） 治療的患者。

5. ROS1 protein for lung cancer detection :
ROS1 is a tyrosine kinase receptor in the insulin receptor family. In non-small cell lung cancer, multiple fusion partners of ROS1 genes have been confirmed. These fusion proteins have kinase activity, which can enhance cell proliferation and reduce cell apoptosis.This test assists in screening suitable candidates for XALKORI (crizotinib) treatment.

6 .Claudin 18.2 (CLDN18.2) 蛋白檢測 - 免疫化學法 (IHC):
CLDN18.2 蛋白是細胞間緊密連接的主要成分，可調節細胞旁屏障通透性和膜極性，控制離子跨細胞的選擇性運輸並維持上皮和內皮層的完整性。CLDN18.2 通常在惡性轉化過程中保留，但當細胞極性破壞和結構喪失時，CLDN18.2 會更容易暴露而被監測出。CLDN18.2 也可以表達於胃腺癌的淋巴結轉移以及其他遠端轉移部位。CLDN18.2 是近年胃癌治療領域中繼 HER2 之後的另一個重要標靶，在消化系統腫瘤中，特別是胃癌、胰腺癌、膽道系統腫瘤以及部分結直腸癌中表達量較高，具有廣泛的潛在受益人群。

6.Claudin 18.2 (CLDN18.2) protein detection - immunohistochemistry (IHC):
CLDN18.2 protein is a major component of intercellular tight junctions, regulating paracellular barrier permeability and membrane polarity, controlling selective ion transport across cells, and maintaining the integrity of epithelial and endothelial linings. CLDN18.2 is typically retained during malignant transformation, but when cell polarity is disrupted and architecture is lost, CLDN18.2 becomes more readily visible and detectable. CLDN18.2 can also be expressed in lymph node metastases and other distant metastatic sites of gastric adenocarcinoma. Following HER2, CLDN18.2 has become another important target in gastric cancer treatment in recent years. It is highly expressed in digestive system tumors, particularly gastric, pancreatic, and biliary tract tumors, as well as some colorectal cancers, potentially benefiting a wide range of patients.

陽性定義：

細胞佔比：75% 的腫瘤細胞表現染色。

染色強度：達到 中度 (2+) 到強烈 (3+) 的膜染色強度。

CLDN18.2 positivity was defined as moderate-to-strong (2+ 或 3+)membranous expression in ≥75% of tumor cells by IHC

資料來源 : What Is CLDN18.2? | CLDN18.2 Pathology Hub

本部門亦提供各大學及研究單位之蠟塊代製業務，不僅只判讀診斷，更協助學術單位之切片品質提升， 以期有更好的研究結果發表，以符合本中心之服務宗旨。服務項目包含人類或動物的組織切片代製、HE 染色、免疫組織化學染色、冰凍切片及各類特殊染色如 Masson-trichrome 及 PAS 等染色。

Our Department also provides paraffin making and embedding tissue services to various universities and research labs, not only for diagnostic purposes, but also with the goal of supporting the mission to help these institutions improve the quality of their biopsy interpretation skills. Our services includes generating human and animal tissue biopsies, hematoxylin- eosin (HE) staining, immunohistochemical staining, frozen tissue biopsies, and various special stains such as Masson- trichrome and PAS, etc.

臨床病理部 Department of Clinical Pathology

臨床病理部組織架構為生化免疫組及新生兒篩檢組，成員有 3 位臨床病理醫師、17 位專業醫檢師及四位行政人員。

本中心為 TAF ISO15189 認證實驗室，各項檢驗前、中、後流程都遵循 ISO15189 品質與能力要求之規範執行，所有項目均定期參加國內外能力測試、品質保證計畫與實驗室室間比對。歷年來成績優異，同時進行各項持續改善計畫，以確保檢驗之準確性。

本部的業務為特殊及高科技檢驗，檢體來源為各大醫院及診所，以集中檢驗來避免醫療資源浪費。檢驗項目主要為重金屬檢驗、放射免疫分析、新生兒篩檢等。

106 年添購超高效能液相層析儀及高精密度液相串聯質譜儀，規劃發展新檢驗項目，如血中維生素、氨基酸檢測及抗黴菌及抗癌藥物濃度檢測。111 年底汰換現有的生化分析儀及免疫分析儀，改以更高通量的生化免疫複合機，提升檢驗速度。112 年添購感應耦合電漿質譜儀 (ICP-MS) 串聯高效能液相層析儀，汰換舊的原子吸收光譜儀外提升開發檢驗重金屬元素的量能。

各組檢驗業務為：

(一) 生化免疫：

1. 重金屬檢測 : 重金屬之定量檢驗為本中心發展重點，提供服務項目包括鉛、鋁、鎘、汞、銅、鋅、鎳等項目。且於 102 年 10 月通過勞動部衛生安全署認可特殊勞工健檢項目，包含血中鉛、尿中鉛、尿中鎳、血中汞、尿中汞及尿中鎘，並持續維持認可資格。
   114 年完成血清硒 TAF 認證 , 提供臨床服務。
   未來將再開發鉻、錳及鉬的檢測。
2. 肝炎檢查 : 各項病毒性肝炎抗原抗體檢測，另有分子醫學部的 DNA、RNA 病毒量檢測及基因型檢測，提供完整的臨床檢驗服務。
3. 荷爾蒙檢測 : 包含甲狀腺荷爾蒙、性荷爾蒙及生長激素等。
4. 癌症標誌檢測 : 提供各項癌症標誌檢測。
5. 自體免疫抗體檢測 : 利用螢光免疫染色、酵素免疫分析、電化學冷光法等提供各項自體免疫抗體檢測服務。
6. 藥物濃度檢測 : 除一般常規檢驗外，更添購高精密液相串聯質譜儀發展抗黴菌及抗癌藥物濃度檢測。
7. 過敏原分析檢測 : 提供各種過敏原套組滿足受測者之需求。
8. 放射免疫分析 : 提供無法利用其它方法檢驗之項目以放射免疫分析法檢測，以符合臨床醫師之需求。
9. 一般生化、免疫學及血液學檢測。
10. 協助學術研究之檢體分析 : 提供各種客製化之服務，接受國內學術機構及醫學中心委託，協助特殊項目之檢驗分析，檢驗結果深獲委託單位信賴。

The Department of Clinical Pathology is comprised of 3 clinical pathologists, 17 well-experienced senior medical technologists and 4 clerical staff members.

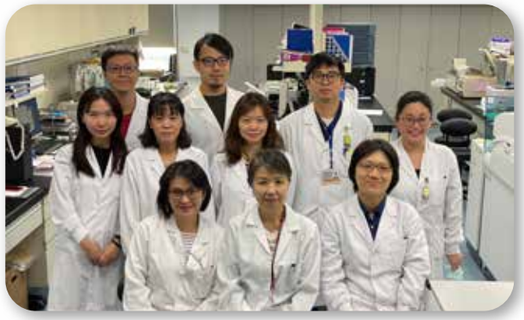
The Department of Clinical Pathology Clinical Pathology department abides by the requirements of the TAF ISO 15189 accreditation in every aspect of the pre-analytical, analytical and post analytical process. The laboratory participates regularly in local and international proficiency testing and inter-laboratory comparisons for the analysis performed. Over the years we' ve maintained an excellent record, while at the same time implementing continuous improvement plans to ensure the accuracy of our test results.

The wide array of services offered by the Department of Clinical Pathology includes special and high technology test items. At the same time they collaborate with various hospitals and clinics in centralizing test analysis to conserve medical resources. Testing services mainly include heavy metal testing, newborn screening, and molecular medicine testing. The department is known for its accurate and fast test results, professionalism, and dedicated services. A specimen collection network has been established to pick up specimens from health institutions around Taipei City and New Taipei City. It also provides preventative health care and other laboratory testing-related consultation services.

Two Classifications of Testing Services:

(1) Biochemistry and Immunology:

1. Heavy Metals Tests: Includes lead (Pb), aluminum (Al),cadmium (Cd), mercury (Hg), copper (Cu), zinc (Zn), and nickel (Ni) testing. Aside from being the Council of Labor Affairs designated certified laboratory for blood Pb level testing, TIP also passed an inspection conducted by the TAF during October 2013. This was done in conjunction with the "Inspection of designated testing laboratory for Occupational Safety and Health," which included several metal testing capabilities such as urine Cd, Hg, Ni, Hg and blood Hg and Pb. Quantitative analysis of heavy metals is the Department' s key development test item.
2. Hepatitis markers tests
3. Hormone tests
4. Tumor markers screening
5. Therapeutic drug monitoring
6. Auto-immune disease antibody tests
7. Allergen tests
8. Radioimmunoassay tests
9. General Biochemistry and Hematology tests
10. Assist in Academic Research Institutions' sample analysis:
    For many years now our institute has built trust with several important academic institutions and medical centers in Taiwan for conducting analysis on special research test items.



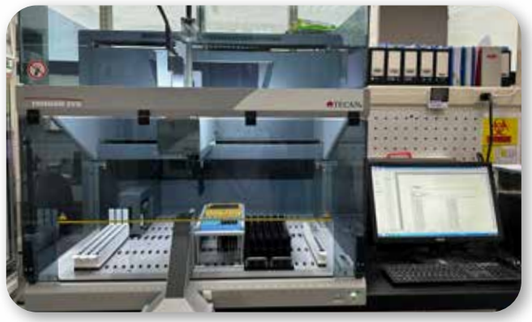
生化免疫工作團隊
Team of Biochemical and Immunological Division

超高效能液相層析儀
UPLC H Class

感應耦合電漿質譜儀
PerkinElmer NexION 1000G ICP-MS 及 NexSAR HPLC

紅外線光譜分析儀
FANci2 sb 16

生化免疫複合機
Roche cobas pro c503 及 e801



自動化檢體處理工作平台
TECAN FREEDOM EVO 100 Air LiHa

(二)、新生兒篩檢：

衛生福利部於民國 73 年開始，針對疾病發生率高、有可靠的篩檢方法、治療方法及檢驗成本低的先天性代謝異常疾病，建立了全國性的新生兒先天性代謝異常疾病之篩檢系統，希望對病童能早期發現、早期診斷並開始治療。本中心於民國 82 年接受衛生福利部委託承接新生兒篩檢業務，參與並見證了這項卓越的工作成果。歷年來在國民健康署的監督下，承接國內近三分之一的新生兒篩檢工作量，為國內三大新生兒篩檢中心之一。同時與臺北市、新北市衛生局合作，負責新生兒聽力篩檢及先天性危急型心臟病篩檢資訊系統管理作業。

(2) Newborn Screening

In 1984 the Ministry of Health and Welfare set an aim to provide reliable and low cost screening tests for high incidence congenital metabolic diseases. It established a nationwide congenital metabolic disorder screening system to diagnose diseases in newborns during the early stages and provide early medical treatment. TIP has been entrusted by The Ministry of Health and Welfare with conducting newborn congenital metabolic screening testing since 1993. Their participation has surpassed all expectations with remarkable achievements. Under the supervision of the Health Promotion Administration, we have been conducting screening tests for almost one third of the newborns, making it one of the three premier screening centers in Taiwan. At the same time, we also work hand- in-

篩檢項目包括兩大類：國民健康署指定篩檢項目 21 項及選擇性自費項目。

指定篩檢項目：

1. 先天性甲狀腺低能症 (CHT)
2. 半乳糖血症 (GAL)
3. 葡萄糖 6 磷酸鹽去氫酶缺乏症 (G6PDD)
4. 先天性腎上腺增生症 (CAH)
5. 苯酮尿症 (PKU)
6. 高胱胺酸尿症 (HCU)
7. 楓糖尿症 (MSUD)
8. 瓜胺酸血症第 I 型 (CIT1)
9. 瓜胺酸血症第 II 型 (CIT2)
10. 中鏈醯輔酶 A 去氫酶缺乏症 (MCAD)
11. 戊二酸血症第一型 (GA-1)
12. 異戊酸血症 (IVA)
13. 甲基丙二酸血症 (MMA)
14. 丙酸血症 (PA)
15. 三羥基三甲基戊二酸尿症 (HMG)
16. 全羧化酶合成酶缺乏 (HCSD)
17. 原發性肉鹼缺乏症 (PCD)
18. 極長鏈醯輔酶 A 去氫酶缺乏症 (VLCAD)
19. 肉鹼棕櫚醯基轉移酶缺乏症第 I 型 (CPT1)
20. 肉鹼棕櫚醯基轉移酶缺乏症第 II 型 (CPT2)
21. 戊二酸血症第 II 型 (GA2)

其中第 5 項 ~ 第 21 項是由串聯質譜儀 (LC MS/MS) 檢測之代謝異常疾病，包括先天性胺基酸、有機酸及脂肪酸等代謝異常。僅需一個血點，藉由此高精密儀器可同時檢驗出多達 20 幾種的代謝異常疾病。同時針對部分篩檢疾病亦設計了進階檢測來提高篩檢的特異性及敏感度。

進階檢測項目：

1. 甲基丙二酸 (MMA) 及丙酸血症 (PA) 之串聯質譜儀進階篩檢。[Methylmalonic Acidemia (MMA) and Propionic Acidemia(PA)]
2. 4 項脂肪酸代謝異常 NGS 檢測 (第 18~21 項疾病)
3. 第二型瓜胺酸血症常見突變熱點檢測

選擇性篩檢項目：

1. 五合一溶小體儲積症篩檢：法布瑞氏症、龐貝氏症、高雪氏症及黏多醣症第一型與第二型。
2. 三合一溶小體儲積症先驅篩檢計畫：第四 A 型、第六型黏多醣症及嬰兒晚發型神經元蠟樣脂褐質沉積症。
3. 嚴重複合型免疫缺乏症。(Severe combined immuno-deficiency /SCID)
4. 生物素酶缺乏症。(Biotinidase Deficiency/BTD)
5. 腎上腺腦白質失養症。(Adrenoleukodystrophy/ALD)
6. 脊髓型肌肉萎縮症。(Spinal Muscular Atrophy/SMA)
7. 裘馨氏肌肉失養症。(Duchenne Muscular Dystrophy/DMD)
8. 新生兒常見聽損基因檢測

其他臨床服務檢測項目：

1. 法布瑞氏症治療成效指標乾血片 Lyso-GL3 檢測。(DBS Lyso-GL3)
2. 臨床個案胺基酸、有機酸、脂肪酸追蹤檢測
3. 高危個案溶小體儲積症篩檢

hand with the Taipei City Health Department in newborn hearing test screening projects and congenital acute cardiac disease screening systems and management. Listed below are the two classifications of newborn screening tests. The first is the Health Promotion Administration Designated tests and the second is listed as the other Undesignated tests.

Designated Tests:

1. Congenital hypothyroidism (CHT)
2. Galactosemia (GAL)
3. Glucose 6 phosphate dehydrogenase deficiency (G6PD)
4. Congenital adrenal hyperplasia (CAH)
5. Phenylketonuria (PKU)
6. Homocystinuria (HCU)
7. Maple syrup urine disease (MSUD)
8. Citrullinemia type 1 (CIT1)
9. Citrullinemia type 2 (CIT2)
10. Medium-chain acyl-CoA dehydrogenase deficiency (MCAD)
11. Glutaric acidemia type 1 (GA-1)
12. Isovaleric acidemia (IVA)
13. Methylmalonic acidemia (MMA)
14. Propionic Acidemia (PA)
15. 3-hydroxy-3-methylglutaric aciduria (HMG)
16. Holocarboxylase synthetase deficiency (HCSD)
17. Primary carnitine deficiency (PCD)
18. Very long-chain acyl-CoA dehydrogenase deficiency (VLCAD)
19. Carnitine palmitoyltransferase I deficiency (CPT1AD)
20. Carnitine palmitoyltransferase II deficiency (CPT2D)
21. Glutaric aciduria type 2 (GA-2)

Of these designated tests, items 5-21 are tested by using the Tandem Mass Spectrometer to screen newborns for congenital defects, as well as amino acid, organic acid and fatty acid metabolic disorders. This high-precision instrument can test more than 20 types of congenital metabolic disorders from a single blood spot. For raising the specificity and the sensitivity of the screening test for certain diseases, second tier tests are developed as follows.

Second tier screening tests:

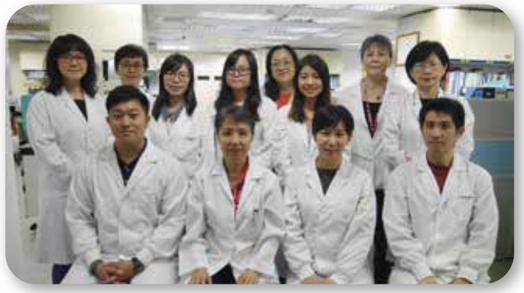
1. Methylmalonic Acidemia (MMA) and Propionic Acidemia (PA).
2. NGS test for 4 fatty acid metabolic diseases (Disease No. 18-21)
3. Mutation Hotspot test for Citrullinemia type 2

Undesignated Tests :

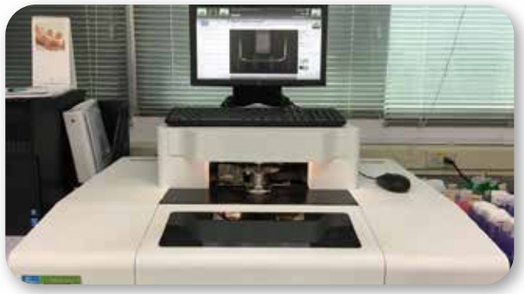
1. 5-Plex LSD screening test for Pompe, Fabry, Gaucher, Mucopolysaccharidosis (MPS) type 1 and 2.
2. 3-Plex LSD screening pilot study test for Mucopolysaccharidosis (MPS) type 4A and 6 and late infantile neuronal ceroid lipofuscinosis type 2 (CLN2).
3. Severe combined immunodeficiency (SCID).
4. Biotinidase Deficiency (BTD).
5. Adrenoleukodystrophy (ALD).
6. Spinal Muscular Atrophy (SMA).
7. Duchenne Muscular Dystrophy/DMD)
8. Test for common mutations of hearing loss.

Other test service :

1. Dried blood spot Lyso-GL3 test.
2. Amino acid, organic acid and fatty acid test for clinical patient follow-up.
3. High-risk patient screening test for LSD.



新生兒篩檢工作團隊
Team of Newborn Screening



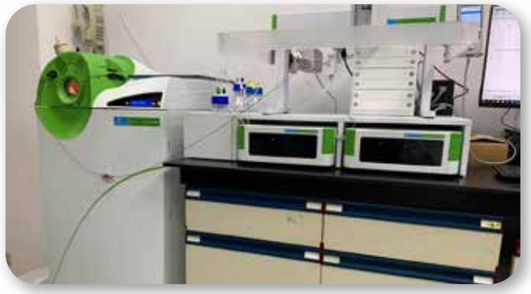
高通量自動血片打孔機
Puncher

高通量自動螢光免疫分析系統 (GSP)

自動分注儀

高階串聯質譜儀
SCIEX API4000

高階串聯質譜儀
Waters Xevo TQ-XS

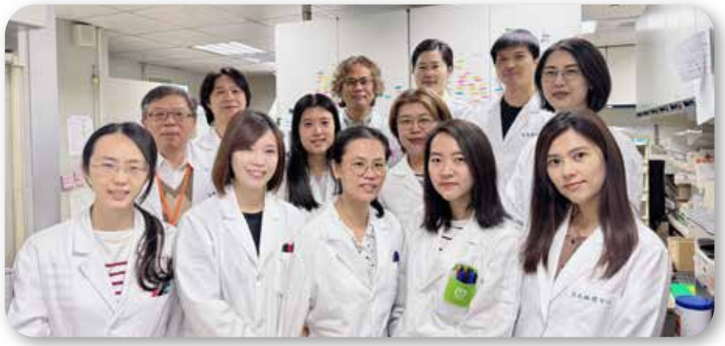


高階串聯質譜儀
PE Qsight MD210

分子醫學部 Department of Molecular Medicine

近年來分子生物學的技術與儀器之發展非常快速，特別是核酸方面的檢驗應用在病理檢測上越來越多。分子醫學實驗室於 2005 年成立，隔年開始對外服務， 隨著業務量的增加與分子檢測需求的快速成長，中心將二樓重新規劃，考慮到核酸檢驗的特殊規格 : 各區獨立、注意氣流、因地制宜、方便工作。於 2010 年建構完成高規格的分子醫學實驗室，並配合業務量的增加，添購先進儀器與設備提供高品質精確檢測。2010 年首度通過 TAF 認證，2012 年也順利完成台灣病理學會的分子醫學實驗室認證。2017 年起開始發展 NGS 這一個領域，目前針對乳癌與肺癌等癌症提供多種 Panel 讓客戶選擇。

Recently, there have been rapid achievements in molecular biology, especially in nucleic acid testing. It has been widely applied to pathology studies. In 2005, the Molecular Medical Lab was established and started clinical operations the following year. As the cases and the demand for molecular testing increased, the second floor of the laboratory was renovated to accommodate an independent molecular medicine laboratory. With specifications conforming to the strict requirements of a molecular biology lab, it was reconstructed in 2010 and equipped with advanced instruments within separated working areas with adequate airflow to provide high-quality and accurate tests. In the same year, our molecular medicine lab obtained its initial accreditation by TAF (Taiwan Accreditation Foundation, ISO 15189). In 2012 our lab was also certified by the Taiwan Society of Pathology as a molecular pathology laboratory. Since 2017, the field of NGS has been developed. Currently, a variety of Panels are provided for customers to choose from for cancers such as breast cancer and lung cancer.



分子醫學部工作團隊
Team of Molecular Medicine

目前實驗室有三大方向 :

(一) 病毒學的檢查：

1.B、C 肝炎方面檢測運用：
使用食藥署核可之體外診斷（IVD）檢測試劑，提供自動化 B、C 型肝炎病毒量檢驗及 C 肝病毒基因型檢驗。

2. 人類乳突病毒定性檢測 :
使用食藥署核可之 HPV 基因分型的體外診斷（IVD）試劑，可檢測包括高風險，低風險和基因型 16 & 18 等型別。

(二) 藥物基因學相關檢測 :

目前提供由卡巴氮平及安樂普諾等藥物引起的嚴重藥物反應之 HLA-B*1502 及 HLA-B*5801 檢測，MAYZENT 藥物代謝基因 CYP2C9 檢測。此外，也自行開發針對癌症化療用藥 Irinotecan 代謝有關之基因 UGT1A1 之多型性，以及酒精代謝相關酵素 (ADH1B，ALDH2) 基因多型性的檢查。

Currently, there are three major points of focus for the lab.

(1)Virology tests:

1.Hepatitis B and C test applications:
We use in vitro diagnostic (IVD) reagent kits (real-time PCR methods) approved by the Ministry of Health and Welfare for the hepatitis B & C viral load tests and hepatitis C genotyping tests.

2. Currently provides in vitro diagnostic (IVD) reagent for HPV genotyping including high risk, low risk, and genotype 16&18.

(2) Pharmacogenetic related tests:

Currently provides HLA-B1502 and HLA-B5801 (IVD reagents) tests for serious drug reactions induced by carbamazepine and allopurinol, and the MAYZENT drug metabolism gene CYP2C9 test (IVD reagents). We also use laboratory developed tests for detecting UGT1A1 polymorphism for colorectal cancer chemotherapy, and tests for detecting ADH1B and ALDH2 polymorphism for alcohol metabolism.

NextSeq 550Dx 次世代定序系統

自動化次世代晶片定序儀 Genexus System

(三) 癌症標靶藥物相關基因檢測 :

乳癌病患組織可利用螢光原位雜交 (FISH) 方法，檢測是否為 HER2/neu 基因大量複製狀態，做為標靶藥物的使用依據；肺癌病患組織也可利用 FISH 方法檢測 ROS1 基因融合變異。在大腸癌檢測方面，我們利用核酸質譜技術 (MALDI-TOF) 分析腫瘤組織 KRAS、NRAS 及 BRAF 基因有無突變狀態。肺癌則針對非小細胞肺癌 (NSCLC) 組織或血漿游離之核酸，利用 Real-time PCR 方法檢測 EGFR 基因是否有突變情況並新增使用 Real-time PCR 技術的肺癌多基因檢測，可降低多基因檢測費用，讓更多肺癌病人受惠。另外我們也建立多項腫瘤基因檢測，包括甲狀腺癌 / 肺癌 / 黑色素細胞癌 (melanoma)BRAF 基因突變的檢測、神經膠母細胞瘤 (Glioblastoma, GBM) MGMT Promoter 基因甲基化檢測、微衛星不穩定 (MSI) 檢測、乳癌 PIK3CA 基因突變檢測與泌尿道上皮細胞癌 FGFR 基因突變檢測。

另外，我們提供多種次世代基因定序（NGS）檢測，包括 Archer FusionPlex Lung Panel、Archer VariantPlex CTL Panel、Archer VariantPlex BRCA + PALB2 Panel、AmpliSeq for Illumina Focus Panel、新生兒脂肪酸代謝異常相關致病基因 NGS 檢測，以及客製化設計，與遺傳性視網膜失養症 (inherited retinal dystrophy，IRD) 用藥相關的 RPE65 Panel NGS 檢測，與近期新增的 Oncomine Precision Assay NGS 檢測。我們針對相關癌症的治療提供檢測，例如乳癌 / 卵巢癌 / 攝護腺癌 (BRCA1/2+PALB2) 與肺癌，以及基因融合（Fusion gene 包含 ALK、ROS1、FGFR、NTRK⋯等）Panel。以上各項檢驗結果目的，均是作為使用各式癌症化療藥物或標靶藥物之參考依據。本部門亦提供研究單位、生技公司與藥廠相關檢測項目開發與測試服務，不僅協助技術開發，更提供高品質的臨床檢驗結果，以期有更好的研究結果發表，以符合本中心之服務宗旨。

(3) Genetics testing for cancer target therapy:

By using the fluorescence in situ hybridization (FISH) technique, we can confirm the presence of HER2/neu gene amplification in breast cancer. Moreover, the FISH method could be used for detection the presence of ROS1 gene rearrangement in non-small cell lung cancer cells. In colorectal cancer testing, we use MALDI-TOF mass spectrometry technique to analyze tumor tissue for the presence of mutations in the KRAS, NRAS and BRAF genes. We also provide Real-time PCR tests detecting mutations in the EGFR gene of Non-small Cell Lung Cancer (NSCLC) cells and/or in patient' s plasma. Recently, we have also launched a multi-gene test for lung cancer using Real-time PCR technology in order to reduce the cost of multi-gene testing and benefit lung cancer patients. For thyroid cancer, lung cancer and melanoma, the BRAF mutation test is also tested by using laboratory developed pyrosequencing test. We also provide MGMT promoter methylation status assay for Glioblastoma, PIK3CA mutation test for breast cancer, FGFR mutation test for urothelial carcinoma, and microsatellite instability (MSI) for many cancers.

In addition, we provide a variety of next generation sequencing(NGS) tests , including Archer FusionPlex Lung Panel, Archer VariantPlex CTL Panel, Archer VariantPlex BRCA + PALB2 Panel, AmpliSeq for Illumina Focus Panel, NGS testing for pathogenic genes related to neonatal fatty acid metabolism disorders, customized design of the RPE65 Panel NGS test related to the medication of inherited retinal dystrophy (IRD), and the recently added Oncomine Precision Assay NGS test. We also provide next generation sequencing for the treatment of related cancers, such as breast cancer/ ovarian cancer/prostate cancer (BRCA1/2+PALB2) and lung cancer, as well as panels for fusion gene such as ALK, ROS1, FGFR and NTRK. All these testing results are important references for current cancer target therapies. We also provide research labs, biotechnology companies and pharmaceutical companies related testing project development and testing services, such as the recent customized design of the QIAseq RPE65 Panel next generation sequencing test related to the medication of inherited retinal dystrophy (IRD). Our department not only assists in technique development, but also provides high-quality clinical test results in order to have better research results published to meet the purpose of our services.

1. 自動病毒核酸萃取及即時定量系統 Cobas 5800 System
2. QuantStudio 5 Real-Time PCR 系統
3. 即時定量聚合酶連鎖反應儀 Rotor-Gene Q MDx
4. 基因分析儀 SeqStudio Genetic Analyzer System

教學與訓練 Research and Education

本中心對內主要為提升員工職能與身心健康所舉辦的各種活動與訓練課程，對外則是提供醫院及相關研究單位進行學術研究及技術開發計畫。經常舉辦演講活動，除了主要邀請醫療相關領域之專業人員來中心演講外，並穿插藝文、資訊、生活等相關議題之演講；另外每年舉辦年度中心訓練，參觀先進醫療單位設施與儀器，邀請國內外著名大學、醫院之教授、醫師、醫檢師進行專題演講。

積極參加國內外相關之學術研討會議，吸收新知並與國際接軌。本中心每年編有學術研究預算，提供台北市立聯合醫院及其他教學研究醫療單位有志從事學術研究之醫師提供申請管道，經過專家學者審核通過後提供經費補助；另外中心也與其他醫療研究單位合作，除了研究成果發表於國外著名醫學雜誌外，並開發擴展中心服務項目，增加業務。

The Taipei Institute of Pathology mainly aims to upgrade the employees' occupational abilities. Physical and mental health is also maintained by regularly holding all sorts of training courses and activities. The department also participates and conducts academic research projects in cooperation with hospitals and other related research units. Besides inviting experts in the medical field to conduct medically-related lectures, other topics such as arts and lifestyle-related lectures are also arranged. In addition, the annual training that is conducted includes: visitations to medical institutions and their advanced facilities; and listening to lectures given by various professionals such as, professors, doctors, and medical laboratory scientists, who come from renowned international and local universities and hospitals.

We also participate in domestic and international academic meetings and conferences in order to keep updated on the latest knowledge and to meet international standards. Each year the TIP allocates a certain amount of their budget to those physicians from the Taipei City hospitals and other research hospitals, who are interested in conducting academic research. First an application is filed and then it is reviewed and approved by experts in the field. Not only is research conducted in cooperation with other medical research units, but the publication of the research results in international medical journals provides TIP with the opportunity to extend its testing services and in the process increase its business opportunities.

我們的網站 Our Website

病理中心有專屬網站為員工與客戶提供更有效率的互動與服務。該網頁除了提供最新的訊息之外，在專業領域有各檢驗項目與結果的查詢，亦有專區可供採檢手冊及申請表單之下載。

The Taipei Institute of Pathology has a specially designed website that provides an effective tool for interaction and service between its staff and clients.

Aside from providing the latest information, the website also allows healthcare personnel to browse for information regarding various test analyses and result query. A specimen collection manual and various application forms are available for downloading if needed, providing convenience to the clients.

網址 < https://www.tipn.org.tw >

我們的服務項目 Items of Examination

解剖病理 / Anatomical Pathology

◆ 外科病理 / Surgical Pathology
- 病理切片 / Surgical biopsy
- 冷凍切片 / Frozen section
- 免疫組織化學染色 / Immunohistochemistry staining
- 表皮生長因子接受器 / EGFR
- 間變性淋巴瘤激酶 /ALK
- 核酸誤配修復基因 /MMR
- PD-L1 (22C3、SP263、28-8、SP142)
- ROS1
- CLDN18.2
- 乳癌表皮受體基因擴增雜交試驗 /HER2 Dual ISH
- 蠟塊代製業務 / Paraffin-embedding tissue service

◆ 細胞病理 / Cytological Pathology
- 子宮頸抹片檢查 / Cervical smear
- 液基薄層細胞學檢查 / Liquid based cytology
- 非婦科抹片體液檢查 / Non-gynecological body fluid cytology
- 非婦科穿刺細胞檢查 /Non-gynecological needle aspiration cytology
- 人類乳突病毒 DNA 檢測 / Human papilloma virus DNA test

臨床病理 / Clinical Pathology

◆ 一般生化檢查 / Routine Biochemistry
◆ 一般血液檢查 / Routine Hematology
◆ 葡萄醣 -6- 磷酸脫氫酶 / G-6-PD
◆ 甲狀腺功能 / Thyroid Function
- 四碘甲狀腺素 / T4
- 三碘甲狀腺素 / T3
- 三點甲狀腺原氨酸攝取率 / T3 uptake
- 游離甲狀腺素 / Free T4
- 游離甲狀腺素分析 / FTI
- 甲狀腺刺激素 / TSH
- 甲促素結合抗體 / TSH Receptor Ab
- 抗甲狀腺過氧化酶抗體 / Anti-TPO Ab
- 甲狀腺體蛋白抗體 / Anti-Tg

◆ 副甲狀腺素 / PTH-Intact
◆ 性荷爾蒙 / Sex Hormone
- 二氫基春情素 / E2 Estradiol
- 春情素醇 / E3 Estriol
- 濾泡刺激素 / FSH
- 黃體化激素 / LH
- 催乳激素 / Prolactin
- 絨毛膜促性腺激素 - 乙亞單體 / β-HCG
- 脫氫異雄固酮 / DHEAS
- 黃體脂酮 / Progesterone
- 睪丸脂醇 / Testosterone

◆ 腦下垂體荷爾蒙 / Pituitary hormones
- 促腎上腺皮質素 / ACTH

◆ 腎上腺素荷爾蒙 / Adrenal hormones
- 皮質醇 / Cortisol
- 醛固酮 / Aldosterone
- 腎泌素 / Renin (PRA)
- 氫氧靛基醋酸 / 5-HIAA
- 17 酮類固醇類 / 17-ketosteroids
- 17 氫氧根腎上腺酮 / 17-OHCS
- 香莢杏仁酸定量 / VMA
- 鄰苯二氛氨 / Catecholamines

◆ 胃泌激素 / Gastrin
◆ 醣尿病 / Diabetes Mellitus
- 血醣 / Glucose
- 醣化血色素 / HbA1c
- 胰島素 / Insulin
- C- 胜肽胰島素 / C-Peptide
- 糖化白蛋白 Glycated albumin

◆ 血脂 / Lipids
- 中性脂肪 / Triglyceride
- 膽固醇 / Cholesterol
- 高密度膽固醇 / HDL-Cholesterol
- 低密度膽固醇 / LDL-Cholesterol
- 脂蛋白素酶原 A1, B / Apo A1, B

◆ 心臟酵素 /Cardio enzyme
- 乳酸脫氫同功酶 / LDH-Isoenzyme
- 肌酸磷化同功酶 / CPK-Isoenzyme

◆ 貧血檢查 / Anemia
- 血清鐵 / Serum Iron
- 總鐵結合能 / TIBC
- 鐵蛋白 / Ferritin
- 血色素電泳 / Hemoglobin EP
- 維他命 B12/ Vitamin B12
- 葉酸 / Folate

◆ 肝炎標識 / Hepatitis marker
- B 型肝炎表面抗原 / HBsAg
- B 型肝炎表面抗體 / Anti-HBs Ab
- B 型肝炎 e 抗原 / HBeAg
- B 型肝炎 e 抗體 / Anti-HBe Ab
- B 型肝炎核心抗體 / Anti-HBc Ab
- B 型肝炎核心抗體免疫球蛋白 M / Anti-HBc IgM
- A 型肝炎抗體 / Anti-HAV Ab
- A 型肝炎抗體免疫球蛋白 M / Anti-HAV IgM
- C 型肝炎抗體 / Anti-HCV Ab

◆ 血清免疫 / Serology and Immunology
- 滲透壓 / Osmolarity
- 前降鈣素元 / Procalcitonin
- 原生 B 型利納太 / NT-proBNP
- 細胞間質抗體 / Anti-Intercellular Substance Ab
- 基底膜帶抗體 / Anti-Basement Membrane Zone Ab
- 抗腎絲球基底膜抗體 /Anti-Glomerular Basement Membrane Ab
- 抗嗜中性球細胞質抗體 /Anti-Neutrophil Cytoplasmic Ab
- 壁細胞抗體 / Anti-Gastric Parietal Cell Ab
- 抗心脂抗體 / Anti-Cardiolipin IgG, IgM
- 乙醯膽鹼抗體 / Acetylcholine receptor Ab
- 免疫球蛋白 G / IgG
- 免疫球蛋白 A / IgA
- 免疫球蛋白 M / IgM
- 免疫球蛋白 D / IgD
- 免疫球蛋白 E / IgE
- 特異性免疫球蛋白 E(過敏原) / Specific IgE (Allergen)
- 血液補體 3 / C3
- 血液補體 4 / C4
- 抗核抗體 / ANA
- 去氧核醣核酸抗體 / Anti-DNA Ab
- 可抽取的核抗體 / Anti-ENA Ab,
- Anti-RNP, Anti-Sm, Anti-SSA, Anti-SSB, Anti-Scl 70, Anti-Centromere , Anti-Jo 1
- 粒線體抗體 / Anti-Mitochondrial Ab
- 平滑肌抗體 / Anti-Smooth muscle Ab
- 轉銅素 / Ceruloplasmin
- 血清蛋白電泳 / Serum protein EP
- 免疫電泳 / Immuno Fixation EP
- 類風濕性因子 / RF
- 德國麻疹免疫球蛋白 G / Rubella IgG
- 德國麻疹免疫球蛋白 M / Rubella IgM
- 單純皰疹病毒型 I 抗體 / HSV type I IgG
- 單純皰疹病毒型 II 抗體 / HSV type II IgG
- 單純皰疹免疫球蛋白 M / HSV IgM
- 巨細胞病毒抗體 / CMV IgG
- 巨細胞病毒免疫球蛋白 M / CMV IgM
- 弓漿蟲抗體 / Toxoplasma IgG
- 弓漿蟲免疫球蛋白 M / Toxoplasma IgM
- EB 病毒囊鞘免疫球蛋白 G / EB-VCA IgG
- EB 病毒囊鞘免疫球蛋白 A / EB-VCA IgA
- EB 病毒囊鞘免疫球蛋白 M / EB-VCA IgM
- 帶狀皰疹 (水痘) 病毒抗體 / VZV IgG
- 披衣菌抗體 / Chlamydia IgG, IgM
- 麻疹病毒抗體 / Measles IgG, IgM
- 幽門桿菌抗體 / H, pylori Ab
- 幽門桿菌呼氣檢驗 / UBT

◆ β2- 細球蛋白 /β2-Microglobulin
◆ 重金屬檢查 / Heavy metals
- 鉛 / Lead
- 銅 / Copper
- 鎳 / Nickel
- 鋅 / Zinc
- 鋁 /Aluminum
- 汞 / Mercury
- 鎘 / Cadmium
- 鋰離子 / Lithium
- 硒 /Selenium

◆ 藥劑及麻醉毒物 / Drugs and Narcotics
- Digoxin, Theophylline, Phenytoin, Carbamazepine, Valproic Acid, Phenobarbital, Vancomycin, Ethanol, Methanol, Amphetamine, Phencyclidine, Morphine, Cannabinoid, Cocaine, Busulfan

◆ 癌症標識 / Tumor marker
- 癌胚胎抗原 / CEA
- α- 胎兒蛋白 / AFP
- CA-125 標記 / CA 125
- CA-199 標記 / CA 199
- CA-153 標記 / CA 153
- SCC 標記 / SCC
- 攝護腺酸性磷酸酶 / Prostate Acid P 游離攝護腺特異抗原 / 攝護腺特異抗原 / Free PSA / PSA

◆ 專案委託項目
- IL-1α, IL-1β, IL-4, IL-6, IL-8, IL-10, IL-27, TNF-α, IFN-α, IFN-γ, BDNF, Ghrelin, Leptin, Adiponectin, Vitamin B1, B2, B6
- Orexin A, RBP-4, 8-OHdG, Angiotensin II, IGF- 1, IGF-2, sIL-6 R

◆ 新生兒篩檢 / Newborn Screening
◆ 國民健康署指定項目 / newborn screening tests designated by Health Promotion Administration
- 先天性甲狀腺低能症 / Congenital hypothyroidism, CHT
- 半乳糖血症 / Galactosemia, GAL
- 葡萄糖 6 磷酸鹽去氫酶缺乏症 / Glucose 6 phosphate dehydrogenase deficiency, G6PDD
- 先天性腎上腺增生症 / Congenital adrenal hyperplasia, CAH
- 苯酮尿症 / Phenylketonuria, PKU
- 高胱胺酸尿症 / Homocystinuria, HCU
- 楓糖尿症 / Maple syrup urine disease, MSUD
- 瓜胺酸血症第 I 型 / Citrullinemia type 1, CIT1
- 瓜胺酸血症第 II 型 / Citrullinemia type 2, CIT2
- 中鏈醯輔酶 A 去氫酶缺乏症 / Medium-chain acyl-CoA dehydrogenase deficiency, MCAD
- 戊二酸血症第一型 / Glutaric acidemia type 1, GA-1
- 異戊酸血症 / Isovaleric acidemia, IVA
- 甲基丙二酸血症 / Methylmalonic acidemia, MMA
- 丙酸血症 / Propionic Acidemia, PA
- 三羥基三甲基戊二酸尿症 / 3-hydroxy-3-methylglutaric aciduria, HMG
- 全羧化酶合成酶缺乏 / Holocarboxylase synthetase deficiency, HCSD
- 原發性肉鹼缺乏症 / Primary carnitine deficiency, PCD
- 極長鏈醯輔酶 A 去氫酶缺乏症 / Very long-chain acyl-CoA dehydrogenase deficiency, VLCAD
- 肉鹼棕櫚醯基轉移酶缺乏症第 I 型 / Carnitine palmitoyltransferase I deficiency, CPT1
- 肉鹼棕櫚醯基轉移酶缺乏症第 II 型 / Carnitine palmitoyltransferase II deficiency, CPT2
- 戊二酸血症第 II 型 / Glutaric aciduria type 2, GA2

◆ 進階檢測項目 / Second tier screening tests
- 甲基丙二酸 (MMA) 及丙酸血症 (PA) 之串聯質譜儀進階篩檢 /Methylmalonic Acidemia and Propionic Acidemia
- 4 項脂肪酸代謝異常 NGS 檢測 (第 18~21 項疾病)/ NGS test for 4 fatty acid metabolic diseases (Disease No. 18-21)
- 第二型瓜胺酸血症常見突變熱點檢測 / Mutation Hotspot test for Citrullinemia type 2

◆ 選擇性篩檢項目 / Undesignated Tests
- 五合一溶小體儲積症篩檢：法布瑞氏症、龐貝氏症、高雪氏症及黏多醣症第一型與第二型 /5-Plex LSD screening test for Pompe, Fabry, Gaucher, Mucopolysaccharidosis (MPS) type 1 and 2.
- 三合一溶小體儲積症先驅篩檢計畫：第四 A 型、第六型黏多醣症及嬰兒晚發型神經元蠟樣脂褐質沉積症 /3-Plex LSD screening pilot study test for Mucopolysaccharidosis (MPS) type 4A and 6 and late infantile neuronal ceroid lipofuscinosis type 2 (CLN2).
- 嚴重複合型免疫缺乏症 / Severe combined immunodeficiency, SCID
- 生物素酶缺乏症 / Biotinidase Deficiency, BD
- 腎上腺腦白質失養症 / Adrenoleukodystrophy, ALD
- 脊髓型肌肉萎縮症 / Spinal Muscular Atrophy, SMA
- 新生兒常見聽損基因檢測 / Test for common mutation of hearing loss
- 新生兒裘馨氏肌肉失養症 / Duchenne Muscular Dystrophy, DMD

◆ 其他臨床服務檢測項目 / Other test service
- 法布瑞氏症治療成效指標乾血片 Lyso-GL3 檢測 (DBS Lyso-GL3)
- 臨床個案胺基酸、有機酸、脂肪酸追蹤檢測
- 高危個案溶小體儲積症篩檢

分子醫學檢驗 /Molecular Medicine Test

◆ 癌症標靶藥物相關基因檢測 /Genetic testing for cancer target therapy test
- 乳癌 HER2 螢光原位雜交檢測 /Breast cancer HER2 Fluorescence in situ hybridization test
- 肺癌 EGFR 基因突變檢測 (組織、血漿)/Lung cancer EGFR gene mutation test(tissue、plasma)
- 肺癌 ROS1 螢光原位雜交檢測 /Lung cancer ROS1 Fluorescence in situ hybridization test
- 乳癌 PIK3CA 基因突變檢測 /Breast cancer PIK3CA gene mutation test
- 大腸癌 KRAS,NRAS,BRAF 基因突變檢測 /Colorectal cancer KRAS,NRAS,BRAF gene mutation test
- 甲狀腺癌、肺癌、黑色素細胞癌 BRAF 基因突變檢測 /Thyroid cancer、Lung cancer、Melanoma BRAF gene mutation test
- 泌尿上皮癌 FGFR 基因突變檢測 /Urothelial cancer FGFR gene mutation test
- 肺癌多基因檢測 /Pan Lung cancer PCR panel test

◆ B、C 型肝炎病毒量與基因分型檢測 /Hepatitis B、C viral load test and Hepatitis C genotyping test
◆ 藥害基因 HLA-B*1502、HLA-B*5801、UGT1A1*28 檢測、CYP2C9 檢測 /Pharmacogenetic related gene: HLA-B*1502 test、HLA-B*5801 test、UGT1A1*28 test、and CYP2C9 test
◆ 人類乳突病毒分型定性檢測 /HPV genotyping test
◆ 酒精代謝基因檢測 /ALDH2 and ADH1B genotyping test
◆ 微星體不穩定檢測 /Microsatellite Instability Assay, MSI
◆ MGMT promoter 基因甲基化檢測 / MGMT promoter methylation status assay
◆ 次世代定序基因檢測 / Next Generation Sequencing, NGS
- AmpliSeq for Illumina Focus Panel 次世代定序基因檢測 / AmpliSeq for Illumina Focus Panel NGS test
- 乳癌 Archer VariantPlex BRCA 次世代定序基因檢測 / Archer VariantPlex BRCA NGS test
- 肺癌 Archer FusionPlex Lung Panel 次世代定序基因檢測 / Archer FusionPlex Lung Panel NGS test
- 肺癌 Archer VariantPlex CTL Panel 次世代定序基因檢測 / Archer VariantPlex CTL Panel NGS test
- 新生兒脂肪酸代謝異常相關致病基因 NGS 檢驗 / NGS test of pathogenic genes associated with abnormal fatty acid metabolism in neonates
- Oncomine Precision Assay 次世代定序基因檢測 /Oncomine Precision Assay NGS test

◆ 研究案及臨床檢驗方法之開發 / Development of tests for research and clinical use
- 遺傳性視網膜失養症 (inherited retinal dystrophy, IRD) 用藥相關 RPE65 Panel 次世代定序基因檢測 / RPE65 Panel NGS test

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專業

服務

熱忱

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