

附件四、技術說明表



高通量、同步及快速檢測優良種豬基因組之平台

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簡歷： <https://scholars.lib.ntu.edu.tw/cris/rp/rp07191>



市場及需求：

在臺灣有中央檢定站及民間的場內檢定站，分別進行中央級及種豬場內種豬性能的選拔及有利基因篩選及育種選拔（如：緊迫基因 (PSS gene)、多產基因 (ESR gene)、高肉質基因 (H-FABP gene) 及增長基因...等）。但是目前不論是在中央檢定站或各個種豬場內種豬有利基因的篩選，皆使用單一基因的 PCR-RFLP (或 MS-PCR) 檢測方法進行檢測，不僅檢測耗時、費用較高及使用人力較多，農民需要花費較多的費用及等待時間，才能獲得相關豬隻基因檢測結果。因此本技術乃研發一高通量、同步、準確及快速的基因檢測平台，且檢測費用較現有檢測平台費用便宜許多，可提高豬農對於分子育種的意願，此亦將進一步加速臺灣種豬性能改進的速度。

技術摘要(含成果)：

本專利所研發，針對臺灣種豬進行豬群有利基因的篩選，萃取其 gDNA 後，以豬隻高通量、同步、準確及快速的基因檢測平台，應用全基因組關聯分析 (GWAS) 進行臺灣豬隻有利基因差異性候選基因檢測及分析。初步結果發現，本技術可所獲得的豬隻基因檢測結果與先前傳統技術所檢測結果相同。

優勢： 本技術相較於先前技術，具有高通量、同步、準確及快速的基因檢測平台，費用較低及具有基因檢測數目的擴充性，且不會影響其同步性及準確率。

競爭產品： 目前國內、外尚無相似的檢測平台。

專利現況：

1. 專利申請中。
2. 本研究團隊具有數十年研究經驗在豬隻基因檢測的研究方面，而且已經發表果數十篇有關豬隻基因檢測相關的試驗研究報告。

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A high-throughput, synchronous, accurate and rapid genetic testing platform

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Experience:

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Market Needs: In Taiwan, there are a central performance testing station and a private on-site performance testing station, which carry out the selection of breeding pig performance, favorable gene selection (such as: stress gene (PSS gene), prolific gene (ESR gene), high meat quality gene (H-FABP gene) and growth gene... etc.). But at present, whether it is the screening of favorable genes for breeding pigs in the central performance testing station or in various private breeding farms, the PCR-RFLP (or MS-PCR) detection method of single gene is used for detection, which not only consumes time, costs and uses more labor. Because farmers need to spend more expenses and waiting time to obtain results for genetic testing of pig. Therefore, this technology is to develop a high-throughput, synchronous, accurate and rapid genetic testing platform, and the testing cost is much cheaper than the existing testing platform. It can increase the willingness of pig farmers for MAS, which will further accelerate the improvement of breeding pig performance in Taiwan.

Our Technology: This patent is aimed at screening the beneficial genes of the pig herd for breeding pigs in Taiwan. After extracting their gDNA, it uses a high-throughput, synchronous, accurate and rapid genetic testing platform for pigs and applies whole-genome association analysis (GWAS) to Taiwan pigs. The detection and analysis of favorable gene difference candidate genes. Preliminary results found that the genetic test results of pigs obtained by this technology are the same as those obtained by the previous traditional technology.

Strength: Compared with the prior technology, this technology has a high-throughput, synchronous, accurate and rapid genetic testing platform. The new technology has lower cost and scalability of the number of genetic testing, and will not affect its synchronization and accuracy.

Competing Products: No related competing products.

Intellectual Properties:

1. Patent is pending.

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2. The research team has decades of research experience in pig genetic testing research, and has published many research reports related to pig genetic testing and phylogenetic relationship.

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