

Production of genetic test strip enabling simple infectious diseases test and export to ASEAN countries

TBA Co., Ltd. manufactures test strip PAS (Printed Array Strip) used for easy-to-use genetic testing by the STH method. DNA is printed in a line on the PAS, and it is manufactured with our DNA printing machine. We are engaged in business that directly sells to genetic test kit manufacturer as its main component supplier (Intel model of B to B business).

As genetic testing tool that can be easily used at various on-sites, our PAS is used in food industry to identify meat species (especially pork) and cultivar discrimination, etc. In the medical field, various infectious disease testing (TB testing, Dengue/Zika virus detection testing, STD testing) and food poisoning bacteria testing etc.



Genetic testing Kit using PAS



Genetic testing with PAS

In our STH method, it is a feature that single-stranded tag DNA acting as marker is bound to PCR primer and amplified by PCR. The PCR amplicon has single-stranded tag, which is chromatographed on the strip PAS and is trapped by complementary DNA printed in advance in line shape. That is, if the target gene is present in the sample, it is detected as blue line in the PAS. The point that the gene can be detected by such a simple visible result is brand new and unique.

Compared with the conventional genetic testing method, it has the following advantage.

1) High reactivity because detection proceeds by hybridization reaction between single-stranded DNA

(= High sensitivity, and denaturation step in the conventional method is unnecessary)

2) PAS can be commonly used for test kits targeting any gene.

(= Small varieties, mass production possible)

Tag DNA can be bound to any primer. Therefore, if you design suitable primer (binding with tag DNA) for target viral or bacterial gene, PAS can be used for any genetic test.



This method is a very unique and simple genetic testing method which uses chromatographic detection by replacing the characteristic sequence (= sequence of bases) of the target gene with its single stranded tag DNA. Previous genetic testing methods required expensive dedicated equipment and specialized trained expert staff. In this method, no special knowledge or technical training is necessary. Just a simple PCR device without signal detecting function is required. Such a genetic testing method which can be carried out cheaply and conveniently is expected to be widely spread also in the distribution site of food and agricultural products or in the medical field of medical care, particularly in emerging ASEAN countries where development of infrastructure is not progressed. We hope to provide a variety of infectious disease genetic testing in emerging ASEAN countries having high field-testing demands, and contribute to eradicating worldwide infectious diseases.

We will exhibit PAS at "BioJapan2017" to be held at PACIFICO Yokohama from October 11 to October 13.

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TBA Co., Ltd