Cat No. K0046: Autoantibody Profiling System

AUTOANTIBODY PROFILING

Autoantibodies are the class of antibodies that are produced by the immune system against an individual's own protein(s). More than 32 million Americans have autoantibodies[1]. The production of autoantibodies may be due to genetic predisposition, hormones, therapeutic drugs or an environmental component including exposure to viruses and toxic chemicals. The presence of autoantibodies is associated with autoimmune disorders and literature suggests that the use of autoantibodies as a biomarker may enhance the sensitivity and specificity of early detection, diagnosis and monitoring of the progress of autoimmune disorders[2-5].

ITSI-Biosciences' unique Autoantibody Profiling System (iAPS) is specifically developed for rapid identification, discovery and quantitation of multiple autoantibodies that may be present in clinical and experimental specimens. Considering that more than one autoantibody maybe present, it is recommended to screen for multiple autoantibodies in each sample to have a better understanding of diseases associated with autoimmune disorders. The profiling system consists of a set of carefully selected and highly purified antigens that detects specific autoantibodies produced by the immune system against one or more of an individual's own proteins. It is presented in a 96-well microtiter plate format and the kit includes all reagents and materials required for screening, detection and interpretation of the results. The manufacturing process utilizes a unique blocking reagent and protocol that ensures high sensitivity and reproducibility. To increase experimental confidence, each plate has an internal standard for the generation of a standard curve, a positive and a negative control. The product is *easy-to-use* and no plate reader is required for qualitative and semi-quantitative assays.

KIT CONTENT

Each Autoantibody Profiling System consists of the following:

1. 96-well microtiter plate containing probes for autoantibodies and standard curve.
2. Buffer system.
3. Blocking Reagent.
4. Detection Antibody.
5. Colorimetric Reagent.
6. Quenching Reagent.
7. Color Scoring Card.
8. Protocol.

APPLICATION OF THE AUTOANTIBODY PROFILING SYSTEM

The autoantibody profiling system can be used to screen plasma and serum to discover new autoantibodies or elucidate the presence or absence of known autoantibodies. The available probes can detect a wide range of autoantibodies making the system useful in many research areas including cancer, cardiovascular disease, neuroscience and infectious diseases (Table 1).

Table 1: Representative research categories covered

1. Aging
2. Autism
3. Angiogenesis
4. Anti-apoptosis
5. Allergy
6. Cancer
7. Cardiovascular
8. Chronic Obstructive Pulmonary Disease (COPD)
9. Diabetes
10. Rheumatoid Arthritis

The profiling system will allow investigators to:

a) Identify multiple autoantibodies in a single specimen (iAPS-M; Cat No: K0046.1-90) or
b) Screen multiple specimens for the presence/absence of a single autoantibody (iAPS-S; Cat No.: K0046.1, K0046.2, etc).

Catalog No.	Name	Application
K-0046.1-90	Multiple autoantibody Profiling System (iAPS-M)	Identify multiple autoantibodies in a sample.
K-0046.1; .2; .3; etc	Single autoantibody profiling system (iAPS-S)	Identify a single autoantibody in multiple samples.

Each kit contains *ready-to-use* reagents, detection system and a Color Scoring Card. The entire process can be completed in 240 min (Figure 1).

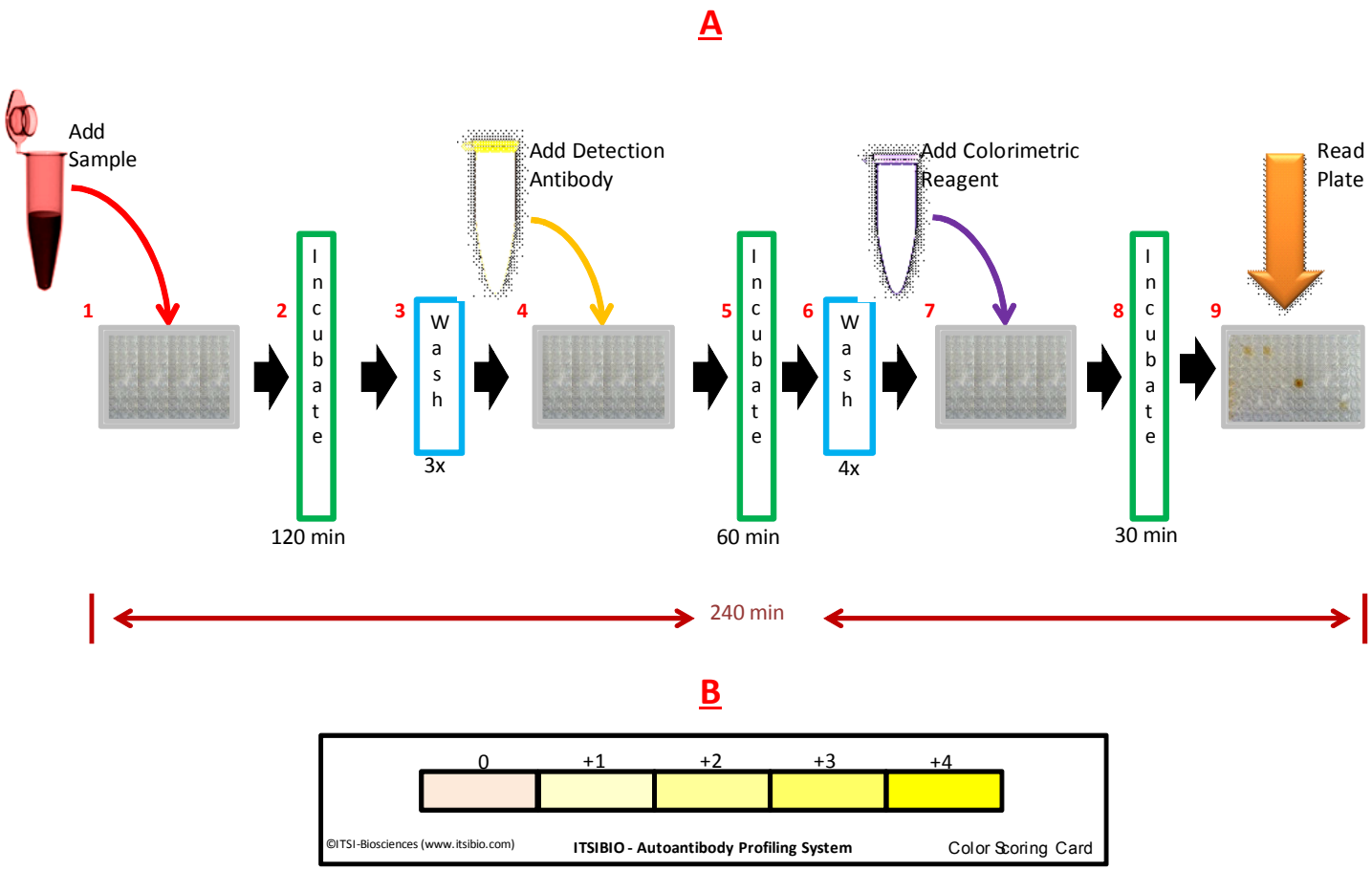

Figure 1: Use of ITSI Autoantibody Profiling System involves 9 *easy-to-follow* steps. All reagents are provided in a *ready-to-use* format and the entire process can be completed in about 240 min (Panel A). A visible color is generated in positive wells. In the absence of a spectrophotometer the intensity of the color can be estimated with a standardized Color Scoring Card provided with each kit (Panel B).

VALIDATION

The autoantibody profiling system has been extensively tested and successfully applied to several human specimens. iAPS can be used to confirm the presence or absence of autoantibodies, and to detect new autoantibodies and disease associations. Figure 2 shows the level of autoantibodies against C-reactive protein (CRP) and cardiolipin in plasma from donors with and without ovarian cancer.

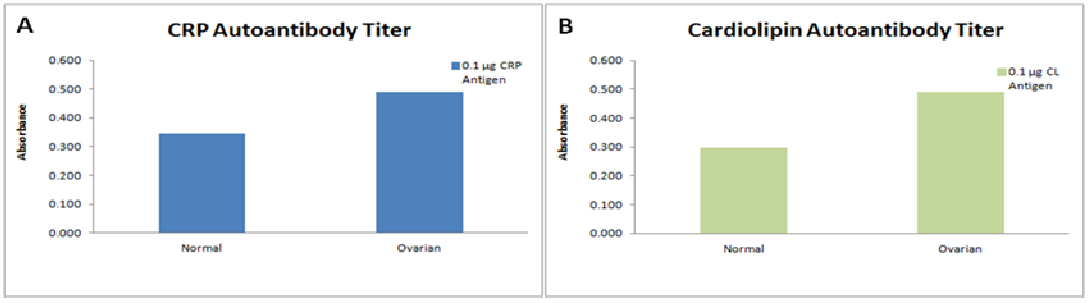

Figure 2: Panel A and B shows elevated levels of autoantibodies against CRP and Cardiolipin detected in plasma from female donors diagnosed with "ovarian cancer compared to donors with no history of cancer "Normal"". The values are the average of two donors per group.

LITERATURE CITED

[1]NIH News (January 13, 2012): http://www.nih.gov/news/health/jan2012/niehs-13.htm; [2]Mol Immunol. 2013 Jan 25;54(3-4):338-346.; [3]Atheroscler Suppl. 2013 Jan;14(1):219-22.; [4]Curr Rheumatol Rep. 2013 Mar;15(3):312.; [5]Atheroscler Suppl. 2013 Jan;14(1):161-5.