

Datasheet for ABIN625757

Human Th1/Th2/Th17 Array Q1

1 Image

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Overview

Quantity:	8 samples
Reactivity:	Human
Method Type:	Sandwich ELISA
Application:	Antibody Array (AA), Multiplex ELISA (mpELISA)

Product Details

Purpose:	Quantibody® Human Th17 Array 1 Kit. Detects 20 Human Th1, Th2, and Th17 Cytokines. Suitable for all liquid sample types.
Brand:	Quantibody®
Sample Type:	Cell Culture Supernatant, Cell Lysate, Plasma, Serum, Tissue Lysate
Analytical Method:	Quantitative
Detection Method:	Fluorometric
Specificity:	GM-CSF, IFN-gamma, IL-1 beta (IL-1 F2), IL-10, IL-12 p70, IL-13, IL-17A, IL-17F, IL-2, IL-21, IL-22, IL-23, IL-28A (IFN-lambda 2), IL-4, IL-5, IL-6, MIP-3 alpha (CCL20), TGF beta 1, TNF alpha, TNF beta (TNFSF1B)
Characteristics:	<ul style="list-style-type: none">• Running an array is like running dozens of ELISAs simultaneously.• Quantibody arrays are stunningly simple to use, read, and analyze.• Each panel can quantify up to 40 different biomarkers simultaneously, and individual panels can be multiplexed to quantify as many as 660 different biomarkers at one time.• The entire process can be completed in just 4-6 hours.• More cost-effective than traditional ELISA• High specificity and system reproducibility• Suitable for diverse sample types

Product Details

- Low sample volume requirement: 50 µL or less
- Well-suited for high throughput assays

- More cost-effective than traditional ELISA
- High specificity and system reproducibility
- Suitable for diverse sample types
- Low sample volume requirement: 50 µL or less
- Get results same day (6-hour processing time)
- Well-suited for high throughput assays
- Q Analyzer software provides one-step computation

Components:

Glass Chip with antibody arrays
Sample Diluent
Lyophilized protein standard mix
Detection antibody cocktail
Streptavidin-Fluorescent dye
Wash buffer

Material not included:

Distilled or deionized water
Small plastic boxes or containers
Pipettors, pipette tips and other common lab consumables
Orbital shaker or oscillating rocker
Aluminum foil
Gene microarray scanner or similar laser fluorescence scanner

Target Details

Background:

Th17 cells are a unique set of T helper cells characterized by the production of IL-17 (also known as IL-17A), IL-17F, and many other inflammatory cytokines. Th17 cells are pro-inflammatory and are thought to be involved in the immune response to fungal and certain bacterial infections, as well as being associated with inflammation and airway hyper-responsiveness in asthma and several autoimmune diseases, including inflammatory bowel disease, rheumatoid arthritis, multiple sclerosis, and asthma.

Application Details

Application Notes:

Completely cover array area with sample or buffer during incubation. Avoid foaming during incubation steps. Perform all incubation and wash steps under gentle rocking or rotation. Cover the incubation chamber with adhesive film during incubation, particularly when incubation is

Application Details

more than 2 hours or <70 μL of sample or reagent is used. Several incubation steps such as step 6 (blocking), step 7 (sample incubation), step 10 (detection antibody incubation), or step 13 (Cy3 equivalent dyestrepavidin incubation) may be done overnight at 4 °C. Please make sure to cover the incubation chamber tightly to prevent evaporation.

Comment: The Quantibody arrays are quantitative multiplex ELISA arrays featuring fluorescent detection. The antibodies are spotted on glass slide solid supports and require a laser scanner for data collection. Cytokine standards are provided with the array for calculation of target protein concentrations.

All Quantibody arrays feature the sandwich immunoassay principle, utilizing an immobilized capture antibody along with a corresponding biotinylated detection antibody.

Sample Volume: 100 μL

Assay Time: 6 h

Plate: Glass Slide

Protocol:

1. Each Quantibody array starts with a single glass microscope slide, which acts as a support for the array. Slides are segmented using a rubber gasket. Up to 8 samples may assayed using a single slide.
2. Antibodies against a variety of different antigens (up to 40 biomarkers per slide) are printed onto the glass slide. Replicates are included, saving you both time and precious sample volume.
3. The end-user adds either known concentration standards (included) or aqueous sample to each well on the slide. Antibodies on the slide capture antigen off from the sample or standard.
4. The end-user adds a detection mix containing paired antibodies (compatible with the primaries pre-coated on the slide) conjugated to a fluorescent dye for detection.
5. Fluorescent signal from each spot is read using a laser slide scanner. The intensity from each spot is compared to the standard curve, and a quantitative expression profile for relevant biomarkers is established.

Sample Preparation: Use serum-free conditioned media if possible. If serum-containing conditioned media is required, it is highly recommended that complete medium be used as a control since many types of sera contains cytokines. We recommend the following parameters for your samples: 50 to 100 μL of original or diluted serum, plasma, cell culture media, or other body fluid, or 50-500 $\mu\text{g/ml}$ of protein for cell and tissue lysates. If you experience high background or the readings exceed the detection range, further dilution of your sample is recommended.

Assay Procedure: 1. Take out the glass slide from the box, and let it equilibrate to room temperature inside the sealed plastic bag for 20-30 minutes. Remove slide from the plastic bag, peel off the cover film,

and let it air dry for another 1-2 hours.

2. Reconstitute the Cytokine Standard Mix (lyophilized) by adding 500 μ l Sample Diluent to the tube. For best recovery, always quick-spin vial prior to opening. Dissolve the powder thoroughly by a gentle mix. Label the tube as Std1.

3. Label 6 clean microcentrifuge tubes as Std2 to Std7. Add 200 μ l Sample Diluent to each of the tubes.

4. Pipette 100 μ l Std1 into tube Std2 and mix gently. Perform 5 more serial dilutions by adding 100 μ l Std2 to tube Std3 and so on.

5. Add 100 μ l Sample Diluent to another tube labeled as CNTRL. Do not add standard cytokines or samples to the CNTRL tube, which will be used as negative control. For best results, include a set of standards in each slide.

6. Add 100 μ l Sample Diluent into each well and incubate at room temperature for 30 minutes to block slides.

7. Decant buffer from each well. Add 100 μ l standard cytokines or samples to each well.

Incubate arrays at room temperature for 1-2 hour.

8. Wash:

- Decant the samples from each well, and wash 5 times (5 min each) with 150 μ l of 1X Wash Buffer I at room temperature with gentle rocking. Completely remove wash buffer in each wash step. Dilute 20x Wash Buffer I with H₂O.

- Decant the 1x Wash Buffer I from each well, wash 2 times (5 min each) with 150 μ l of 1X Wash Buffer II at room temperature with gentle rocking. Completely remove wash buffer in each wash step. Dilute 20X Wash Buffer II with H₂O.

9. Reconstitute the detection antibody by adding 1.4 ml of Sample Diluent to the tube. Spin briefly.

10. Add 80 μ l of the detection antibody cocktail to each well. Incubate at room temperature for 1-2 hour.

11. Decant the samples from each well, and wash 5 times (5 mins each) with 150 μ l of 1X Wash Buffer I and then 2 times with 150 μ l of 1x Wash Buffer II at room temperature with gentle rocking. Completely remove wash buffer in each wash step.

12. After briefly spinning down, add 1.4 ml of Sample Diluent to Cy3 equivalent dye-conjugated streptavidin tube. Mix gently.

13. Add 80 μ l of Cy3 equivalent dye-conjugated streptavidin to each well. Cover the device with aluminum foil to avoid exposure to light or incubate in dark room. Incubate at room temperature for 1 hour.

14. Decant the samples from each well, and wash 5 times (5 mins each) with 150 μ l of 1X Wash Buffer I at room temperature with gentle rocking. Completely remove wash buffer in each wash

Application Details

step.

15. Disassemble the device by pushing clips outward from the slide side. Carefully remove the slide from the gasket.

16. Place the slide in the Slide Washer/Dryer (a 4-slide holder/centrifuge tube), add enough 1x Wash Buffer I (about 30 ml) to cover the whole slide, and then gently shake at room temperature for 15 minutes. Decant Wash Buffer I. Wash with 1x Wash Buffer II (about 30 ml) and gently shake at room temperature for 5 minutes.

17. Remove water droplets completely by gently applying suction with a pipette to remove water droplets. Do not touch the array, only the sides.

18. Imaging: The signals can be visualized through use of a laser scanner equipped with a Cy3 wavelength (green channel) such as Axon GenePix. Make sure that the signal from the well containing the highest standard concentration (Std1) receives the highest possible reading, yet remains unsaturated.

Calculation of Results: Data extraction can be done using the GAL file that is specific for this array along with the microarray analysis software (GenePix, ScanArray Express, ArrayVision, MicroVigene, etc.).

Assay Precision: Reproducibility: CV < 20%

Restrictions: For Research Use only

Handling

Handling Advice: Do not touch the surface of the slides, as the microarray slides are very sensitive. Hold the slides by the edges only. Handle all buffers and slides with powder free gloves. Handle glass slide/s in clean environment. The Quantibody slides do not have bar codes. To help distinguish one slide from another, transcribe the slide serial number from the slide bag to the back of the slide with an ultra-fine point permanent marker. Please Note: Red permanent marker can significantly interfere with fluorescent signal detection. We recommend marking your slides with a green, blue or black ultra-fine point permanent marker. Please write the number on the very bottom edge of the slide. Do not write on the arrayed well areas.

Storage: -20 °C

Storage Comment: For best results, store the entire kit frozen at -20°C upon arrival. Stored frozen, the kit will be stable for at least 6 months which is the duration of the product warranty period. Once thawed, store array slide(s), standard mix, detection antibody cocktail, and Cy3-Conjugated Streptavidin at -20°C and all other reagents undiluted at 4°C for no more than 3 months.

Expiry Date: 6 months

Publications

Product cited in: Meireles, Marques, Norberto, Fernandes, Mateus, Rendeiro, Spencer, Faria, Calhau: "The impact of chronic blackberry intake on the neuroinflammatory status of rats fed a standard or high-fat diet." in: **The Journal of nutritional biochemistry**, Vol. 26, Issue 11, pp. 1166-73, (2015) ([PubMed](#)).

Hanaoka, Nicolls, Fontenot, Kraskauskas, Mack, Kratzer, Salys, Kraskauskiene, Burns, Voelkel, Taraseviciene-Stewart: "Immunomodulatory strategies prevent the development of autoimmune emphysema." in: **Respiratory research**, Vol. 11, pp. 179, (2010) ([PubMed](#)).

There are more publications referencing this product on: [Product page](#)

Images

Each antibody is printed in quadruplicate horizontally								
	1	2	3	4	1	2	3	4
A	POS1				POS2			
B	GM-CSF				IFN-gamma			
C	IL-1 beta				IL-2			
D	IL-4				IL-5			
E	IL-6				IL-10			
F	IL-12 p70				IL-13			
G	IL-17A				IL-17F			
H	IL-21				IL-22			
I	IL-23				IL-28A (IFN-lambda 2)			
J	MIP-3 alpha (CCL20)				TGF-beta 1			
K	TNF-alpha				TNF-beta (TNFSF1B)			

Image 1.