

Innovative Technology & Novel Bio-Product



PROTIA Inc.
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www.protia.co.kr

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PROTIA <i>Allergy-Q</i>	PROTIA <i>Food IgG</i>	PROTIA ANA Profile 18	PROTIA AST DL001
TriCheck	ImmuneCheck	ANITIA	AniCheck

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PRODUCT LIST

Allergy test "PROTIA Allergy-Q"
Food intolerance test "PROTIA Food IgG"
Autoimmune test "ANA profile 18"
Antibiotic Susceptibility test "PROTIA AST"
Novel concept of pregnancy test "TriCheck"
Immune health monitoring kit "ImmuneCheck"
Animal allergy test "ANITIA Canine IgE" "ANITIA Feline IgE" "ANITIA Equine IgE"
Bovine IgG concentration test "AniCheck Bovine IgG"

Allergy Screening Test

Identify the cause of **YOUR ALLERGY!**

The pain can be reduced once you know the cause.

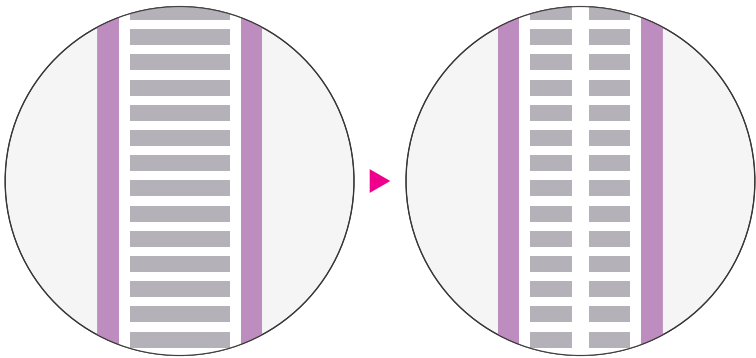
PROTIA *Allergy-Q*

122+ specific allergens in 1 panel



Parallel lines array diagnostic technology

Compact diagnostic panel



- Parallel lines array(PLA) multiplex biochip technology
- Increase efficiency of test up to 2 ~ 3 fold (Patent: KR 1570327)

Type of panel

192 lines panel : 176 specific allergens		
PROTIA Allergy-Q 192	D panel	Total 176 allergens
128 lines panel : 122 specific allergens		
PROTIA Allergy-Q 128	L panel	Total 122 allergens
PROTIA Allergy-Q 128	M panel	Total 118 allergens
96 lines panel : 107 specific allergens		
PROTIA Allergy-Q 96	M panel	Total 107 allergens
64 lines panel : Over 63 specific allergens		
PROTIA Allergy-Q 64	Inhalant panel	Total 64 allergens
PROTIA Allergy-Q 64	Food panel	Total 72 allergens
PROTIA Allergy-Q 64	S panel	Total 63 allergens
PROTIA Allergy-Q 64	G Inhalant panel	Total 60 allergens
PROTIA Allergy-Q 64	G Food panel	Total 60 allergens
50 lines panel : 48 specific allergens		
PROTIA Allergy-Q	Atopy panel	Total 48 allergens

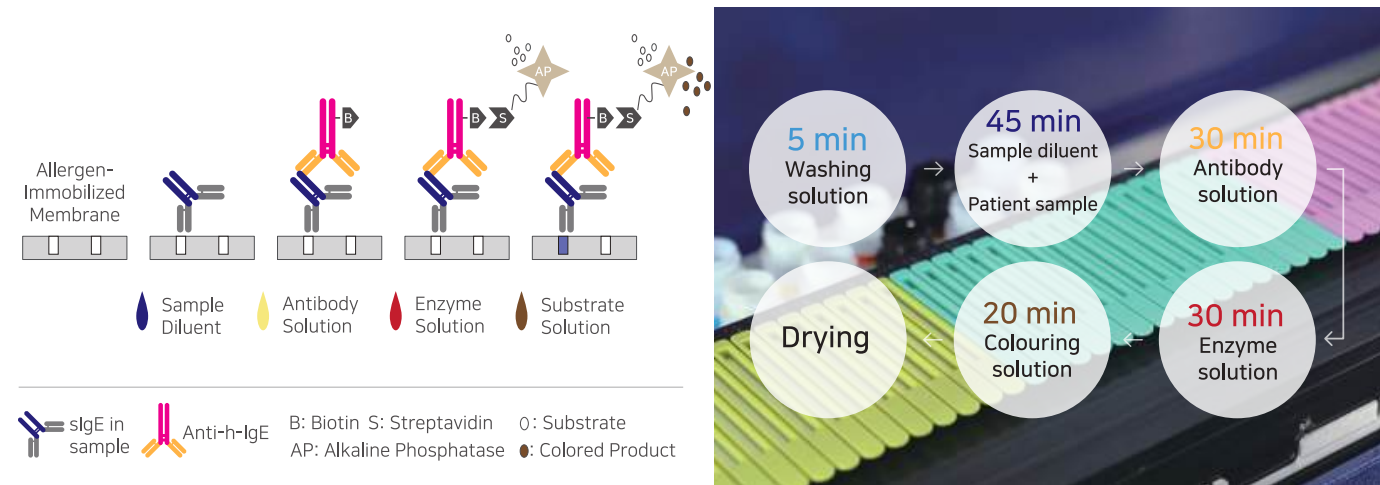
Allergy Screening Test

Parallel lines array diagnostic technology



- The World's largest number allergen testing
 - Small serum volume for testing (96 Line: 100uL, 128 Line: 150uL)
- Compact diagnostic panel
 - Increased test and cost efficiency
 - On strip calibration
 - Multiple panels

Action Mechanism



Evaluation

Allergen-specific IgE		
IgE concentration (IU/mL)	Class	Allergen-specific IgE
≤ 0.34	0	Not found
0.35~0.69	1	Weak
0.70~3.49	2	Moderate
3.50~17.49	3	Moderately strong
17.50~49.99	4	Strong
50.00~99.99	5	Very strong
≥ 100	6	Extremely strong

Allergy Screening Test

Instruments for PROTIA's panel products



Q-STATION ELITE
Fully automatic system

- 40 ~ 48 tests in one process
- Testing different panels at once
- Controlling several Q-STATION ELITE with one PC



Q-STATION ELITE



Q-Processor
Automatic processor

- Integrated PC
- 10 tests in one process



Q-Smart
Reading system

- Safe and Easy handling
- Multiple language available
- 10 tests in one process
- Compact size & Light weight



Q-Processor & Q-Smart

Valuable and Informative report format

PROTIA Inc.

Medical report

PROTIA Allergy-Q

PROTIA Allergy-Q 96M panel

- Type of allergen panel
 - Sample information
 - Analyst's comments
 - Allergen information
 - Photo of the test panel
 - IgE concentration (IU/mL, class)
 - Interpretation of the class
- (Classification of specific IgE concentration)

PROVEN Quality



Accuracy : 93.0%

Specificity : 90.3%

Sensitivity : 97.6%

*High agreement with the gold standard product

**In 128M model

Food Intolerance test

PROTIA Food IgG 96

Immunoblot assay for the quantitative detection of food specific IgG antibodies in human serum & plasma



Specification of PROTIA Food IgG 96

- Required sample amount: 9ul
- High-density diagnostic panel
- Line blot immunoassay: High reproducibility
- On-strip calibration
- Detection limit: 2.00 mg/L
- Detects 89 food allergens on 1 panel
- Fully automated equipment available

Food Hypersensitivity

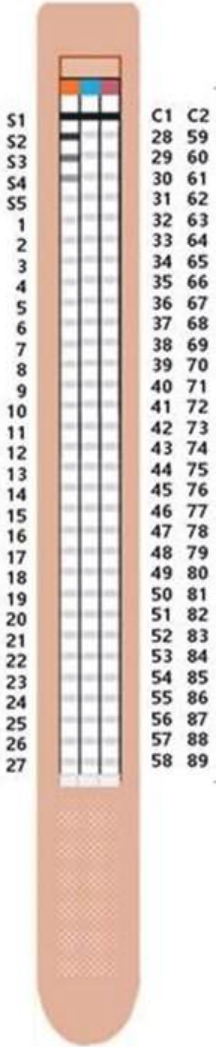
   	Food Intolerance Response after 2 ~ 72 hr of food intake ↓ Inflammatory reaction of IgG against particular food PROTIA Food IgG 96	Acute Allergy Immediate reaction & Anaphylaxis shock ↓ Histamine reaction of IgE against allergen PROTIA Allergy-Q	   
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Specific IgG-mediated delayed food intolerance test
A single test covers 89 food that can cause food hypersensitivities
PROTIA Food IgG 96

Food Intolerance test

Type of Panel

PROTIA Food IgG 96					
No.	Allergen	No.	Allergen	No.	Allergen
1	Rice	28	Tuna	59	Mushroom
2	Barley meal	29	Salmon	60	Tomato
3	Corn	30	Trout	61	Apple
4	Wheat flour	31	Codfish	62	Banana
5	Gluten	32	Mackerel	63	Grape
6	Rye	33	Plaice	64	Peach
7	Buckwheat	34	Eel	65	Strawberry
8	Soybean	35	Anchovy	66	Orange
9	Peanut	36	Clam	67	Mango
10	Pea	37	Blue mussel	68	Kiwi
11	Red kidney bean	38	Scallop	69	Apricot
12	Lentil	39	Oyster	70	Avocado
13	Sesame	40	Crab	71	Blueberry
14	Pine nut	41	Shrimp	72	Cherry
15	Sweet chestnut	42	Lobster	73	Lemon
16	Walnut	43	Pacific squid	74	Melon
17	Brazil nut	44	Octopus	75	Pear
18	Almond	45	Olive fruit	76	Pineapple
19	Hazel nut	46	Cucumber	77	Plum
20	Pistachio nut	47	Carrot	78	Watermelon
21	Macadamia nut	48	Eggplant	79	Egg white
22	Cashew nut	49	Garlic	80	Egg yolk
23	Coconut	50	Onion	81	Chicken
24	Sunflower	51	Lettuce	82	Pork
25	Mustard	52	Cabbage	83	Beef
26	Cacao	53	Celery	84	Lamb meat
27	Yeast, bakers	54	Spinach	85	Goat milk
		55	Broccoli	86	Milk
		56	Potato	87	α -lactalbumin
		57	Sweet potato	88	β -lactoglobulin
		58	Pumpkin	89	Casein



Autoimmune test

PROTIA ANA Profile 18

Quantitative Immunoassay for 18 autoantigen using Serum and Plasma

- Detection of Autoantigen-specific IgG
- High-density diagnostic panel
- On strip Calibration
- Line blot Immunoassay kit (patent: KR 1570327)
- Detection of 18 types of autoantigens in a panel
- Compatible with automated equipment



List of Autoantigen

No.	Autoantigen Name	Code	Disease
1	Histidyl-tRNA Synthetase	Jo-1	PM, DM
2	PM-Scl 100	PM-Scl	PM, SSc
3	Centromere Protein B	CENP-B	SSc
4	Scl-70	Scl-70	SSc
5	Ro/SS-A (60kDa)	SSA 60	SjS, SLE
6	Ro/SS-A (52kDa)	SSA 52	SjS, SLE
7	La/SS-B	SSB	SjS, SLE
8	M2	M2	PBC
9	dsDNA	dsDNA	SLE
10	Nucleosome	Nuc.	SLE
11	Histone	Histone	SLE
12	Proliferating Cell Nuclear Antigen	PCNA	SLE
13	Ribosomal Phosphoprotein P0	RPP	SLE
14	Sm	Sm	SLE
15	U1-snRNP 68/70 kDa	RNP 70	MCTD
16	U1-snRNP A	RNP A	MCTD
17	U1-snRNP C	RNP C	MCTD
18	RNP/Sm	RNP/Sm	MCTD

Antimicrobial Susceptibility Test

PROTIA AST

PROTIA AST DL001

An innovative inspection system using the capacitance measurement method

- 40 antibiotic testable systems
- Inspection time is around 4 hours
- World's Highest Inspection Capacity
- World's First Electrical Capacity Measurement Technology
- Conveniently with fully automated equipment!
- Use of a 192-channel microelectrode and high inspection accuracy



NO.	Antibiotic	Concentration (ug/ml)	NO.	Antibiotic	Concentration (ug/ml)
1 ~ 8	Ampicillin	0.25 ~ 32	105	Gentamicin	1,000
9 ~ 12	Ertapenem	0.5 ~ 4	106 ~ 109	Doxycycline	2 ~ 16
13 ~ 19	meropenem	0.25 ~ 16	110 ~ 114	Tetracycline	1 ~ 16
20 ~ 24	Cefoxitin	2 ~ 32	115 ~ 118	Tigecycline	0.5 ~ 4
25 ~ 30	Cefuroxime	1 ~ 32	119 ~ 121	Minocycline	4 ~ 16
31 ~ 36	Amoxicillin/Clavulanate	2/1 ~ 64/32	122 ~ 128	Ciprofloxacin	0.06 ~ 4
37 ~ 39	Amoxicillin	2 ~ 8	129 ~ 135	Levofloxacin	0.12 ~ 8
40 ~ 47	Penicillin	0.12 ~ 16	136 ~ 139	Moxifloxacin	0.5 ~ 4
48 ~ 54	Cefepime	0.5 ~ 32	140 ~ 142	Teicoplanin	8 ~ 32
55 ~ 59	Piperacillin	8 ~ 128	143 ~ 148	Vancomycin	1 ~ 32
60 ~ 66	Cefotaxime	0.5 ~ 32	149 ~ 151	Linezolid	2 ~ 8
67 ~ 68	ESBL, Dime-C (Ceftazidime/Clavulanate)	1/4 ~ 2/4	152 ~ 153	ICR (Clindamycin/Erythromycin)	1/0.5 ~ 4/0.5
69 ~ 70	ESBL, taxi-C (Cefotaxime/Clavulanate)	0.25/4 ~ 0.5/4	154 ~ 159	Erythromycin	0.25 ~ 8
71 ~ 77	Ceftriaxone	0.5 ~ 32	160 ~ 164	Clindamycin	0.25 ~ 4
78 ~ 79	Oxacillin	0.25 ~ 0.5	165 ~ 169	Trimethoprim/Sulfamethoxazole	0.5/9.5 ~ 8/152
80 ~ 84	Cefazolin	2 ~ 32	170 ~ 172	Nitrofurantoin	32 ~ 128
85 ~ 90	Aztreonam	1 ~ 32	173 ~ 174	Mupirocin	128 ~ 256
91 ~ 95	Imipenem	1 ~ 16	175 ~ 176	Nitroxoline	16 ~ 32
96 ~ 99	Gentamicin	2 ~ 16	177 ~ 180	Colistin	1 ~ 8
100 ~ 103	Amikacin	8 ~ 64	181 ~ 186	Positive control	-
104	Streptomycin	500	187 ~ 192	Negative control	-

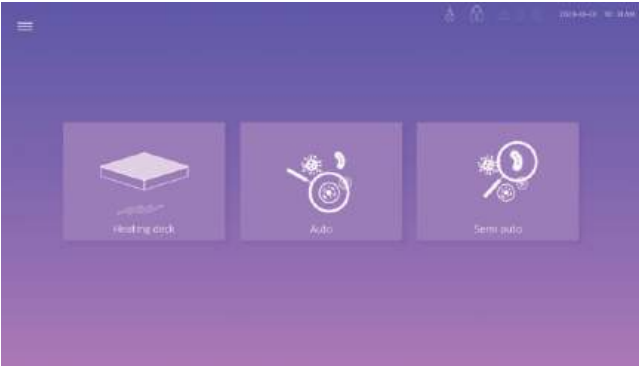
Antimicrobial Susceptibility Test

Q-AST 192 Pro



- ✓ **Automated system** from strain inoculation to test results analysis
- ✓ **User friendly interface**

Main



Heating deck option



Running page



- ① **Progress window**
- ② **Tracking tip location window**
- ③ **Plate deck progress window**

Novel concept of Pregnancy test

TriCheck

Solution for False Negative with additional line (T2) specially loaded in TriCheck



Reading the result

Pregnancy Status	Existing Diagnostic Kit	TriCheck
Non-conception	 Negative	 Negative
	 Positive	 Positive
Conception (High conc. Of hCG & hCGβcf)	 False Negative	 Positive
	T C	T1 C T2

TriCheck Midstream

For general public & pharmacy



TriCheck-C Cassette

For clinic & hospital



TriCheck combo

For clinic & hospital

Providing quantitative result using urine and serum



Immune Health monitoring kit

ImmuneCheck

Diagnosis of the Personal Immune System using whole blood or serum

Check your immune system!

- Mesuring concentration of Immunoglobulin using whole blood, serum and plasma
- Get the results in 20 minutes
- Minimum sample volume using lancet
- Useful for children with difficult blood collection
- Visually determine using concentration reference chart without any extra instrument



ImmuneCheck IgG



- Quantitative measurement of Total IgG
- Require 5μL of whole blood, serum and plasma
- Predictive diagnosis of Immune level
- Assay range : 0.12 ~ 4,000 mg/dL

ImmuneCheck IgE



- Quantitative measurement of Total IgE
- Require 10μL of whole blood, serum and plasma
- Predictive diagnosis of allergic diseases
- Assay range : 20 ~ 2,000 IU/mL

Products for Animal

Allergy Test for Animal, ANITIA **Canine** / **Feline IgE** / **Equine IgE**

ANITIA
Canine IgE

ANITIA
Feline IgE

ANITIA
Equine IgE



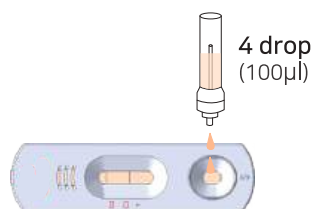
Animal Allergy Screening Test

- Requires small volume of serum 50µL
- 64 + 61(Canine), 64 + 61(Feline), 60 + 60(Equine) specific IgE Test
- Line blot Immunoassay : An accurate and reproducible test
- On strip calibration

AniCheck

Rapid test for Animal, **AniCheck Bovine IgG**

Rapid test of Bovine IgG in Blood and Colostrum



 Only takes 15 minutes!

- ✓ Small volume of sample
- ✓ Simple method
- ✓ Accurate result



AniCheck Bovine IgG
Blood and Colostrum

Measurement of IgG concentration in bovine blood and colostrum

Calves are Immune-deficient when they are born.
Feed your calves with appropriate colostrum and
monitor your calves concentration of IgG to save them.

- Requires small volume of blood and colostrum (5µL)
- Total IgG test in 15 minutes simple method
- Quantitative data with Q-Reader
Semi-quantitative data with color reference chart
- Assay range : 2.3 ~ 120 mg/ml

