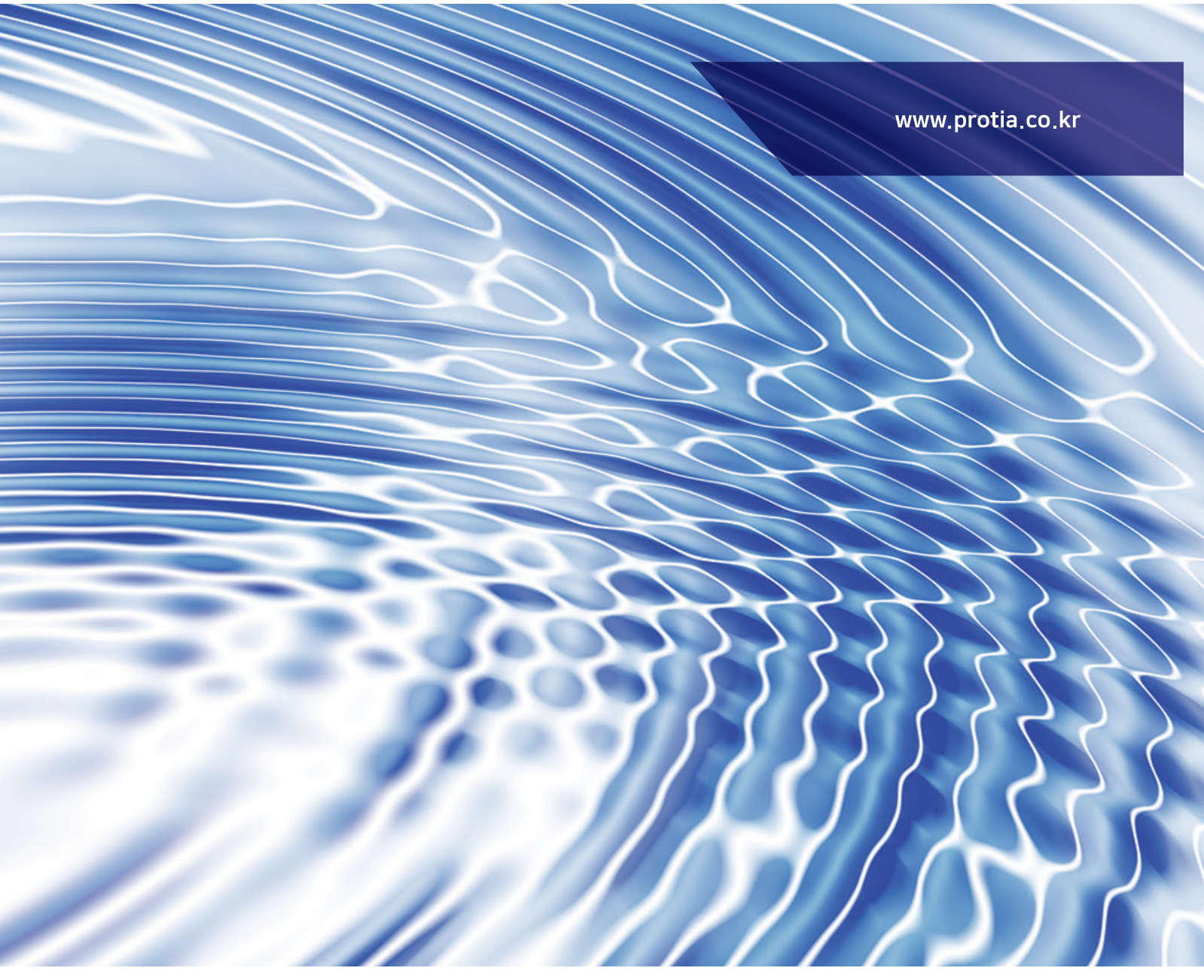
PROTIA

Innovative Technology & Novel Bio-Product



PRODUCT LIST

- Allergy test **"PROTIA Allergy-Q"**
- Food intolerance test **"PROTIA Food IgG"**
- Multiplex allergen - specific IgG4 **"PROTIA Specific IgG4"**
- Autoimmune test **"ANA profile 18"**
- Antibiotic susceptibility test **"PROTIA AST"**
- Novel concept of pregnancy test **"TriCheck"**
- Immune health monitoring kit **"ImmuneCheck"**
- Check your gut health with Saliva **"IMSAFE Saliva"**
- Animal allergy test **"ANITIA Canine IgE" "ANITIA Feline IgE" "ANITIA Equine IgE"**
- Animal food intolerance test **"ANITIA Food Intolerance"**
- Animal POCT **"Canine Pan Allergy" "Anicheck Bovine IgG" "Anicheck Equine IgG"**

Multiplex Allergen Simultaneous Test

PROTIA
Allergy-Q

Identify the cause of YOUR ALLERGY!

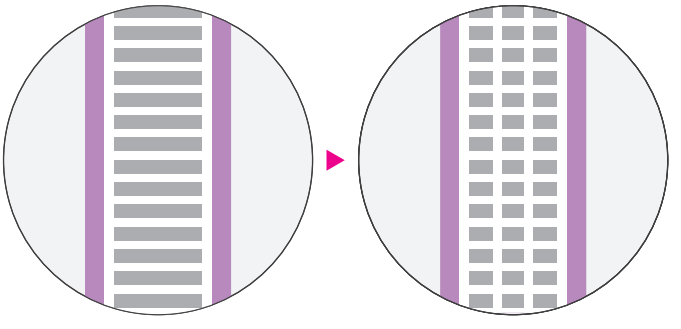
The pain can be reduced once you know the cause.

176 allergens in 1 panel



Allergy is an abnormal immune response in which the body's defense system overreacts to substances that are normally harmless to most people. Immunoglobulin E (IgE), one of the antibodies produced by our immune system, recognizes these substances as threats and binds to mast cells, a type of white blood cell, triggering the release of histamine and other chemical mediators. Depending on where this reaction occurs in the body, it can lead to conditions such as dermatitis, rhinitis, conjunctivitis, urticaria, and asthma — and in severe cases, life-threatening anaphylactic shock.

Compact diagnostic panel



- Parallel lines array(PLA) multiplex biochip technology
- Increase efficiency of test up to 2 ~ 6 fold
  (Patent: US 10900963, EP 2966447)
- Small sample volume

Broad allergen coverage

- Food
- Animal
- Mold
- Drug
- Component Allergen
- Pollen
- Insect
- Chemical
- Dust mites

Type of panel

PROTIA *Allergy-Q*	Atopy panel
PROTIA *Allergy-Q 64*	Inhalant panel
PROTIA *Allergy-Q 64*	Food panel
PROTIA *Allergy-Q 64S*	S panel
PROTIA *Allergy-Q 64D*	D panel
PROTIA *Allergy-Q 64G*	Inhalant panel
PROTIA *Allergy-Q 64G*	Food panel
PROTIA *Allergy-Q 96M*	M panel
PROTIA *Allergy-Q 128M*	M panel
PROTIA *Allergy-Q 128L*	L panel
PROTIA *Allergy-Q 192D*	D panel

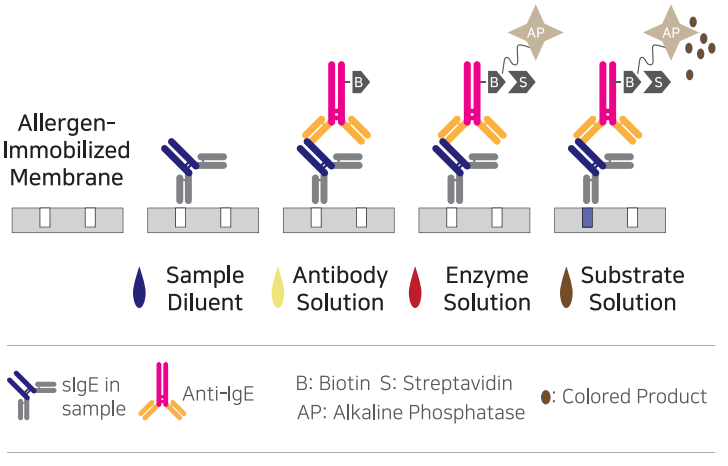
Multiplex Allergen Simultaneous Test

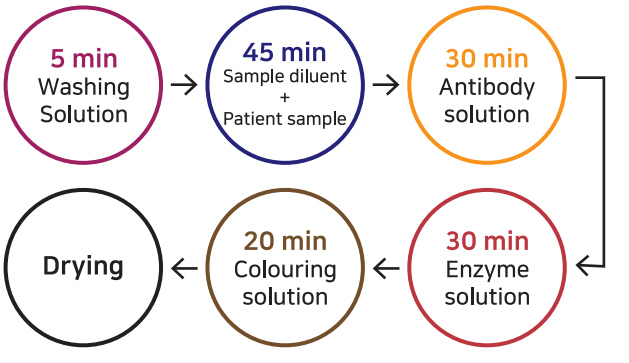
Parallel lines array diagnostic technology



- World class multiplex allergy testing
- Small serum volume for testing
  (96 Line: 100uL, 192 Line: 150uL)
- Compact diagnostic panel
- Simultaneous testing for greater
  efficiency and cost saving
- 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

Multiplex Allergen Simultaneous Test

Instruments for PROTIA's panel products



YouTube



YouTube



Q-STATION ELITE
Fully automatic system

- 40 ~ 48 tests in one process
- Testing different panels at once

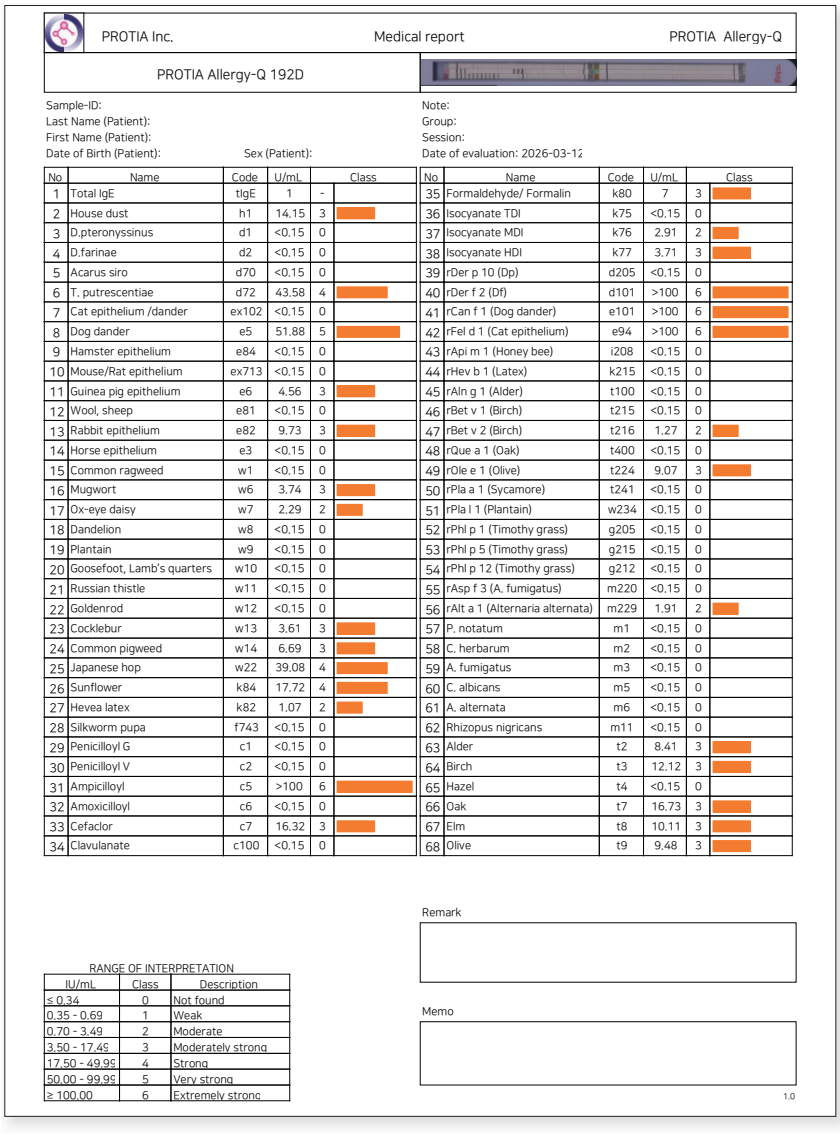
Q-Processor
Semi-automatic system

- Integrated PC
- 10 tests in one process

Q-Smart
Reading system

- Multiple language available
- 10 tests in one process
- Compact size & Light weight

Valuable and Informative report format



PROTIA Inc. Medical report PROTIA Allergy-Q

PROTIA Allergy-Q 192D

Sample-ID:
Last Name (Patient):
First Name (Patient):
Date of Birth (Patient): Sex (Patient):

Note:
Group:
Session:
Date of evaluation: 2026-03-12

No	Name	Code	U/mL	Class
1	Total IgE	tIgE	1	-
2	House dust	h1	14.15	3
3	D.pteronyssinus	d1	<0.15	0
4	D.farinae	d2	<0.15	0
5	Acarus siro	d70	<0.15	0
6	T. putrescentiae	d72	43.58	4
7	Cat epithelium /dander	ex102	<0.15	0
8	Dog dander	e5	51.88	5
9	Hamster epithelium	e84	<0.15	0
10	Mouse/Rat epithelium	ex713	<0.15	0
11	Guinea pig epithelium	e6	4.56	3
12	Wool, sheep	e81	<0.15	0
13	Rabbit epithelium	e82	9.73	3
14	Horse epithelium	e3	<0.15	0
15	Common ragweed	w1	<0.15	0
16	Mugwort	w6	3.74	3
17	Ox-eye daisy	w7	2.29	2
18	Dandelion	w8	<0.15	0
19	Plantain	w9	<0.15	0
20	Goosefoot, Lamb's quarters	w10	<0.15	0
21	Russian thistle	w11	<0.15	0
22	Goldenrod	w12	<0.15	0
23	Cocklebur	w13	3.61	3
24	Common pigweed	w14	6.69	3
25	Japanese hop	w22	39.08	4
26	Sunflower	k84	17.72	4
27	Hevea latex	k82	1.07	2
28	Silkworm pupa	f743	<0.15	0
29	Penicilloyl G	c1	<0.15	0
30	Penicilloyl V	c2	<0.15	0
31	Ampicilloyl	c5	>100	6
32	Amoxicilloyl	c6	<0.15	0
33	Cefaclor	c7	16.32	3
34	Clavulanate	c100	<0.15	0
35	Formaldehyde/ Formalin	k80	7	3
36	Isocyanate TDI	k75	<0.15	0
37	Isocyanate MDI	k76	2.91	2
38	Isocyanate HDI	k77	3.71	3
39	rDer p 10 (Dp)	d205	<0.15	0
40	rDer f 2 (Df)	d101	>100	6
41	rCan f 1 (Dog dander)	e101	>100	6
42	rFel d 1 (Cat epithelium)	e94	>100	6
43	rApi m 1 (Honey bee)	i208	<0.15	0
44	rHev b 1 (Latex)	k215	<0.15	0
45	rAln g 1 (Alder)	t100	<0.15	0
46	rBet v 1 (Birch)	t215	<0.15	0
47	rBet v 2 (Birch)	t216	1.27	2
48	rQue a 1 (Oak)	t400	<0.15	0
49	rOle e 1 (Olive)	t224	9.07	3
50	rPla a 1 (Sycamore)	t241	<0.15	0
51	rPla l 1 (Plantain)	w234	<0.15	0
52	rPhl p 1 (Timothy grass)	g205	<0.15	0
53	rPhl p 5 (Timothy grass)	g215	<0.15	0
54	rPhl p 12 (Timothy grass)	g212	<0.15	0
55	rAsp f 3 (A. fumigatus)	m220	<0.15	0
56	rAlt a 1 (Alternaria alternata)	m229	1.91	2
57	P. notatum	m1	<0.15	0
58	C. herbarum	m2	<0.15	0
59	A. fumigatus	m3	<0.15	0
60	C. albicans	m5	<0.15	0
61	A. alternata	m6	<0.15	0
62	Rhizopus nigricans	m11	<0.15	0
63	Alder	t2	8.41	3
64	Birch	t3	12.12	3
65	Hazel	t4	<0.15	0
66	Oak	t7	16.73	3
67	Elm	t8	10.11	3
68	Olive	t9	9.48	3

RANGE OF INTERPRETATION

IU/mL	Class	Description
≤ 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
≥ 100.00	6	Extremely strong

Remark

Memo

1.0

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

PROVEN Quality



Kappa value : 0.87

Total Agreement : 93.5%

Class Agreement : 95.7%

*High agreement with
the gold standard product

**In 192D model

Food Intolerance test



PROTIA
Food IgG 60, 96, 128

- High-density diagnostic panel
- Line blot immunoassay: high reproducibility
- On-strip calibration
- Fully automated equipment available
- Detects over 60 food allergens on 1 panel

Food IgG 96: 89 allergens, Food IgG 128: 120 allergens

Comparison Between Food Intolerance and Allergy

Food Intolerance

Response after
2 ~ 72hrs of food intake

Inflammatory reaction of
IgG against Specific food allergens

Allergy

Immediate reaction
& Anaphylaxis Shock

Histamine reaction of
IgE against food allergens

Food IgG 96

Food IgG 96 panel

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

Total 89 Allergens

Multiplex Allergen - specific IgG4

PROTIA *specific IgG4*



Specific IgG4

The Antibody that turns down allergic reaction

During immunotherapy, your body gradually produces more allergen-specific IgG4 —
a blocking antibody that helps block allergens before they can trigger an allergic reaction.
Over time, this may help reduce your allergy symptoms.

The Value of Testing Specific IgG4



Reflects immune changes during AIT



Helps evaluate IgE-IgG4 balance



May support symptom improvement

What may change during immunotherapy?

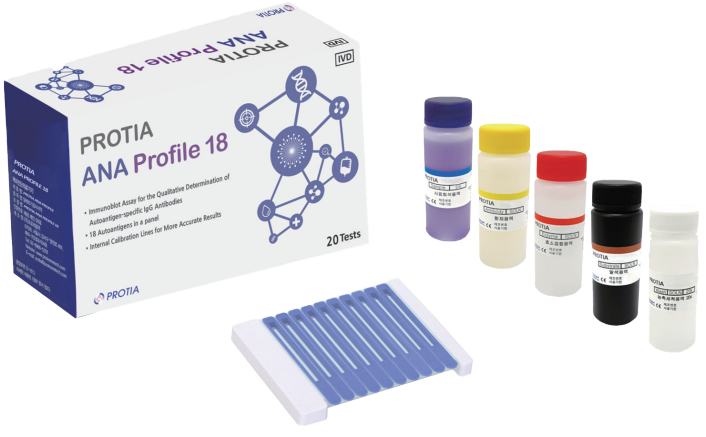
Specific IgG4 ↑ ----> Allergy Symptoms ↓



A simple way to understand it : more blocking support, fewer allergy symptoms.

IgG4									
Specific IgG4 panel									
No.	Allergen	No.	Allergen	No.	Allergen	No.	Allergen	No.	Allergen
1	D. pteronyssinus	10	Japanese hop	19	Chicken	28	Crab	37	Almond
2	D. farinae	11	Aspergillus fumigatus	20	Egg yolk	29	Shrimp	38	Peach
3	Cat epithelium&dander	12	Penicillium notatum	21	Egg white	30	Blue mussel/ Oyster	39	Apple
4	Dog dander	13	Alternaria alternata	22	Milk	31	Wheat	40	Kiwi
5	Alder/ Birch	14	Bee venom	23	Casein	32	Buckwheat	41	Mango
6	Oak	15	Wasp venom	24	α-lactalbumin	33	Rice	42	α-Gal (Thyroglobulin)
7	Sweet vernal grass/ Bermuda grass/ Orchard grass/ Timothy grass	16	Cockroach	25	β-lactoglobulin	34	Soy bean		
8	Common ragweed	17	Pork	26	Codfish	35	Peanut		
9	Mugwort	18	Beef	27	Mackerel	36	Walnut		
Total 42 Allergens									

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

An innovative inspection system using the capacitance measurement method

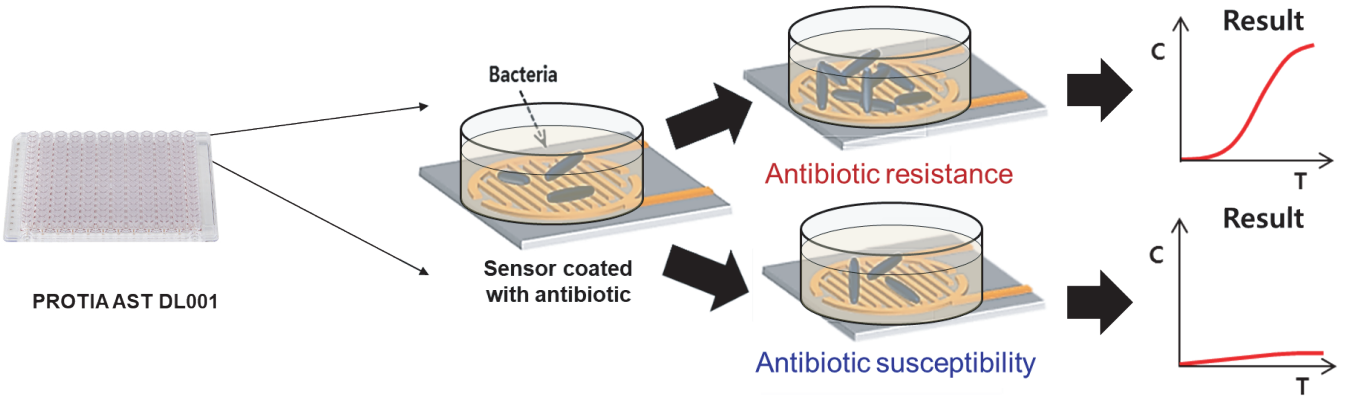
- 40 antibiotic testable systems
- Inspection time is around 4 hours
- World's highest inspection capacity
- World's first electrical capacity measurement technology
- Conveniently with fully automated equipment
- Use of a 192-channel microelectrode and high inspection accuracy
- Patent KR 10-2919117, 10-1776698, US 12146879

List of Antibiotic and Concentration

No.	Antibiotic	Concentration (ug/ml)	No.	Antibiotic	Concentration (ug/ml)
1 ~ 8	Ampicillin	0.25 ~ 32	105	Gentamicin	1000
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	Amoxiicillic/ 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	Impenem	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

Antibiotics susceptibility test concepts



Antibiotic susceptibility testing using a bio-sensor with inter-digitated electrodes via electrical capacitance measurement

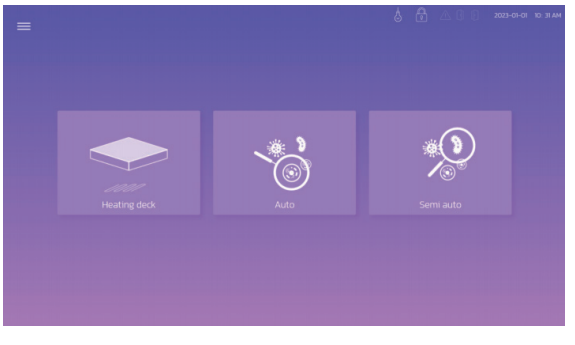
Q-AST 192 Pro



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**

Point of Care Test (POCT) for Human

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
Conception (High conc. Of hCG & hCGβcf)	Positive	Positive
	False Negative	Positive
	T C	T1 C T2

ImmuneCheck

Diagnosis of the Personal Immune System using whole blood or serum



Check your immune system!

- Measuring concentration of Immunoglobulin using whole blood, serum and plasma
- Get the results in 20 minutes
- Visually determine using concentration reference chart without any extra instrument

Check Your Gut Health with Saliva

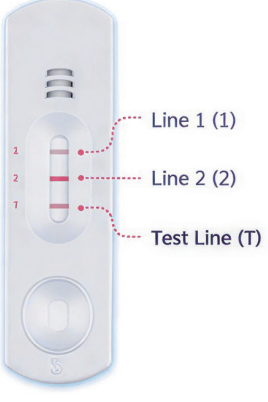
IMSAFE Saliva

Check your immune level with saliva
Manage your immune health!

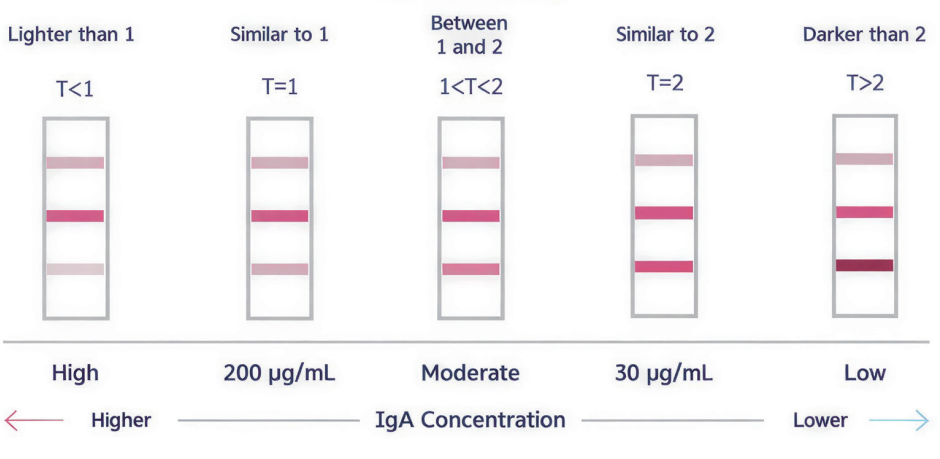
- Non-invasive immunity check (IgA)
- Management for overall wellness
- Anytime, Anywhere, At-home test
- In 15 minutes



Result Window Layout



Test Line Intensity



Products for Animal

Allergy Test for Animal

ANITIA Canine IgE



ANITIA Feline IgE



ANITIA Equine IgE



- Requires small volume of serum
- Canine/Feline : 180+ allergens, Equine : 120 allergens
- Line blot Immunoassay : accurate and reproducible test
- On strip calibration

Food Intolerance Test for Animal

ANITIA Canine/ Feline Food Intolerance Test

If your pet has **abnormal symptoms** that can not figure out the cause, you should consider **"Food Intolerance"**

Check **60 ~ 122 food allergens** in a single test!

Diarrhea | Excessive Itching | Persistent Flatulence | Patches of Missing Hair | Tiredness &Lethargy

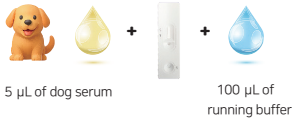


Point of Care Test (POCT) for Animal

Test for Allergy

Canine Pan Allergy

- Uses a mix of the most frequently positive allergens
- Guides further allergy testing
- 5 µL of serum

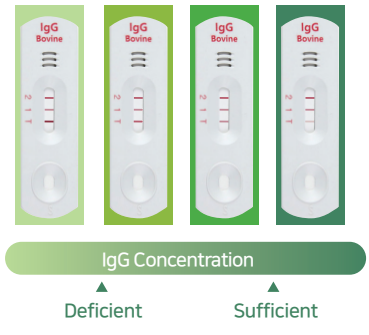




Test for Immune Health

Anicheck Bovine/ Equine IgG

- Quantitative detection
- Result in 15 minutes
- No need of lab test
- Prevent FPT (Failure of Passive Transfer)
- 5 µL of blood or colostrum



Innovative Technology & Novel Bio-Product

PRB-ProductList-EN01-rev.1

www.protia.co.kr

PROTIA

PROTIA *Allergy-Q*

PROTIA *Food IgG*

PROTIA ANA Profile 18

PROTIA AST DL001

PROTIA *specific IgG4*

TriCheck

ImmuneCheck

IMSAFE Saliva

ANITIA

AniCheck

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ISO 13485:2016