DNA4me

MY Allergy

Maria Musterfrau

DEMO_ML

COVER LETTER

Dear Ms. Musterfrau,

Your sample for the analysis arrived on 05/02/2018 in the laboratory and was evaluated according to the highest laboratory quality standards (ISO 15189). The results were evaluated and released by two independent geneticists and molecular biologists. After obtaining the results, your personal report was compiled. We hereby transmit the results to you in the format of your choice.

We would like to thank you for your trust and hope that you are satisfied with our service. We are always open for questions and suggestions, please do not hesitate to contact us. This is the only way we can continuously improve our services.

We hope the analysis meets your expectations.

Kind regards,

Dr. Daniel Wallerstorfer BSc.
Laboratory Director

Florian Schneebauer, MSc.
Laboratory Manager

Allergy Sensor

Personal analysis results for:
Maria Musterfrau | Date of birth: 01/01/1990

Order number:
DEMO_ML

This report contains personal medical information that is highly confidential. Data protection must be ensured.

ALLERGIES

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INTRODUCTION

Here you can find out all you need to know about allergies.

What are allergies?

Allergies are understood to be a hypersensitivity of the immune system against foreign substances (= allergen) which actually are harmless. They can develop in any phase of life, when the immune system incorrectly classifies a substance as dangerous and initiates atypical reactions to it.

Allergies have various differing elicitors, such as:

- Grass pollen and tree pollen
- Animal products (Animal hairs or dander, mite excrement)
- Food products (of plant and animal origin)
- Mold and other microorganisms
- Chemical substances (e.g. pharmaceuticals, preservatives)

Allergies have been on the rise for the past decades. It is estimated that one out of three Europeans suffers from allergic diseases. This can be attributed to altered conditions of living, such as improvements in the hygiene, but also to the increasing daily contact with environmental pollutants or chemicals. Furthermore, biological inheritance also has a large part in the developing of allergies, as could be shown in many studies. In the case of families in which both parents suffer from allergic diseases, their children will also be affected 50% of the time. Only the principal tendency toward developing allergies is passed on, not however the concrete characteristics of the allergy against particular triggers.

Children usually experience an increase in food allergies during their early years, which often fade away as they grow older. Adults in turn most commonly suffer from pollen- or house dust allergies.

From the point of view of those concerned, Allergies are primarily differentiated based on the mode of absorption into the following categories:

- Inhalant Allergies (e.g. pollen, spores, dust)
- Food Allergies (Fruits, Vegetables, Animal products)
- Pharmaceutical Allergies (e.g. Penicillin)
- Insect Poison Allergies (e.g. Bees, Wasps)
- Contact Allergies (e.g. metals such as nickel)
- Parasitic or Microbial Allergies due to infestation of the body with elicitors (e.g. fungi, bacteria and worms)

How does the allergic reaction develop?

The first contact with the allergen can lead to a false reaction of the immune system, causing the production of IgE antibodies against the respective allergen (=protein). This process is referred to as allergization. It can often take place years prior to the first reaction (such as is the case with insect poison allergies). Repeated exposition then leads to the actual allergic reaction. This occurs through the reciprocation of the IgE antibodies, the eliciting allergen and certain immune cells, the so-called mast cells. Mast cells contain large amounts of inflammatory substances (e.g. histamine) which will be released after contact with the allergen.

Which symptoms point to an allergy and in which manner do they become noticeable?

The manifestation of the allergy is primarily differentiate based on which regions of the body are affected by the allergic reaction. The most common symptoms of allergies are:

➤ Year-round colds, hay-fever

Only minutes after the initial inhalation of pollen or house dust the nose can become itchy, the typical urge to sneeze develops and the nasal mucosa become swollen.

➤ Inflammation of the conjunctiva of the eye (conjunctivitis), Watery eyes

The allergic conjunctivitis (pink eye) coincide often with hay fever. The subjective perception is similar to a foreign object in the eye.The eyes are watering, redness of conjunctiva and itchy or burning eyes. Eye lids can get redden and swollen. The symptoms can deteriorate by the itchiness and the involved eye rubbing.

➤ breathlessness, Asthma

If allergic reaction and associated local infection occur in the lounge, allergic asthma often develops. By narrowing of the bronchi and swelling of the lung passageways as well as over production of bronchial secretion a massive an sudden breathlessness can occur. Whistling breathing noises and slimy cough are typical after or during contact with allergen. This symptoms can be enhanced through physical efforts or bad air quality (e.g. smoke)

➤ eczemas, neurodermatitis, nettle rush

In the skin area, an allergy manifests itself by eczema, flush, blisters, or wheals. Usually, a severe itching appears together with the skin irritations, but generally disappears after one day at most. Children are more frequently affected, because rashes are frequently triggered by food, and because children are more susceptible food allergies.

➤ circulatory complaints, fatigue

For many affected persons, the inflammation in the body induced by the allergic condition may lead to a general fatigue or tiredness. Frequently, this is boosted by medicament, such as antihistamines.

➤ Gastro-intestinal complaints

The digestive system may also be affected by the allergy. Nausea, vomiting, abdominal pain an diarrhea may appear.

➤ Anaphylactic Shock

The anaphylactic shock is the most dangerous manifestation of an allergy and is potentially life threatening. This is an allergic reaction affecting the whole body. Some common causes include pesticide or medicament allergies, as the allergen is distributed by through the bloodstream in the whole body. Affected people will suffer from respiratory difficulties, circulatory problems, in severe cases even apnoea and circulatory collapse up to death.

Dangers of an untreated allergy

Anaphylactic Shock

The anaphylactic shock is the most severe form of an allergic reaction. This reaction affects vital organs and may be lethal as a consequence of circulatory failure.

What is the most frequent trigger?

- Insects: bee, weps, hornet
- Antibiotics: common example is penicillin
- Esculents: Seafoods, Peanut, Celery;
- Many other substances like pollen animal hair, Nuts, pome fruits and stone fruits, pain killer or latex can also lead to an anaphylactic reactions but these reactions are in most cases more harmless

How does an anaphylactic shock occur?

The main responsible is a substance naturally produced by the body named histamine. It is released by the blood cells in an avalanche-like manner, if the body gets in contact with a substance it reacts allergically to. Histamine is also released in situations of severe pain and can even be ingested externally by food (alcohol!).

The mentioned histamine leads to a widening and increased permeability of the vessels. Consequence are:

- At first, flushes
- Wheals
- Tingling in mouth, palms,
- Vertigo
- Nausea and vomiting
- Tachycardia
- Sweating
- Respiration difficulties up to blackout, and eventually death

How to treat an allergy?

The easiest allergy treatment method is to avoid, or at least reduce any contact to the allergy trigger. This is well possible in case of food allergies, however more difficult in case of reactions to pollen or house dust.

There are several active treatment options. The specific immune therapy (= hyposensitization, or desensitization) involves a vaccination with increasing doses of the allergens over a larger time period. This will change the immune response, and will ideally completely heal the allergy. However, this therapy is not effective for all patients, or all allergy triggers. The longer an allergy is already present, and the more triggers are present, the lower are the chances of the therapy. Furthermore, a hyposensitization involves a risk for the patient to develop a severe allergic reaction or to be sensitized to additional allergens.

In any case where immune therapy is not viable or has not been successful, the patient may be treated pharmacologically, e.g. with histamine release inhibiting medicament. Asthmatic patients often get prescriptions of respiration sprays with corticosteroid. These medications fight the inflammation in the respirational tract, and help to dilate the air passages, and to limit or completely prevent the allergic inflammation in the long run. Acute anaphylactic shock may be treated by administration of adrenaline and antihistamines.

Why is it important to identify the exact allergy trigger?

In order to permanently avoid any contact to the allergy trigger (referred to as allergen abstinence), the patient needs to know exactly what he is reacting to. Even for allergy types which can not be treated by allergen abstinence, such as allergies to pollen, it is important to isolate the perpetrator. This allows a better prediction of the period of the condition, and a medical treatment during the allergy season. Especially for specific immune therapy, it is important to identify the accurate allergen, because this treatment is based on this allergen. Therefore, any insufficient or wrong diagnostics will inevitably result in a wrong treatment. With accurate diagnostics, further potentially allergy triggering factors may be predicted by the known cross allergies.

Cross reactions may result from the surface structures of allergens, which are present in a very similar way in different related allergens. However, this relationship exists on a molecular level, and may not be obvious.

Example 1: People allergic to birch and primarily sensitized to birch pollen, are often inclined to the so called pollen associated food allergies, such as apple, carrot, peach or celery.

Example 2: a mites allergy may also result in a sensitization to seafood, snails, or insects.

Benefits of this allergy diacnistics method

Which benefits does the allergy sensor provide, compared to other tests?

As opposed to other blood tests, the allergy sensor is not only focused on the IgE screening (filtering of a limited number of allergens, e.g. birch pollen), but also allows a complete evaluation of any potentially allergy triggering substances in the blood serum. An evaluation of the IgE and IgG4 rate may support the physician in his or her determination of specific therapy recommendations, and specify the positive or negative course of a specific immune therapy. A benefit of the in vitro evaluation is, that the patient will not be exposed to any allergens in any moment, and thus there will be no risk of triggering any allergic reactions such as anaphylactic shock.

Our advanced immune solid phase allergen chip is based on the latest biochip technology, and has been designed in cooperation with internationally leading allergy researchers. This is the first biochip based test which has been approved for in vitro diagnostics in Europe. While other test processes use complex extracts of animal hair, pollen, mites, food, latex etc., this allergy test only uses natural or biotechnical produced, purified allergens. This ensures an absolute precise determination of the allergy triggering allergens, without any direct contact with the test substances as in the skin test.

As each manufacturer of allergen extracts (whether for skin tests or lab tests) uses different base materials and extraction methods, the extracts greatly differ regarding their composition and quality. Studies have shown, that in many commercially available extracts, some important extracts were completely missing. Even worse, the allergen extracts might be contaminated with different allergens. For example, mites allergens have been shown to be present in animal hair allergen extracts. Such a contaminated extract might lead to wrongly positive results when used in diagnostics.

Precise diagnostics are an important decision basis for choosing a specific, targeted immune therapy.

Use in Specific Immune-therapy (SIT)

A total measurement of IgG4 and IgE is essential in order to verify an immunological efficiency.

Assumption: patient with confirmed birch pollen allergy

- Evaluation of suitability for a birch pollen specific immune therapy
- Patient with high suitability for SIT
- After measuring IgG4 and IgE antibody concentration, start of therapy, e.g. with grass and/or birch pollen extract
- Successive measurements of IgG4 and IgE antibody concentrations every 3 months
- An increase of IgG4 level and decrease of IgE level shows the immunological efficiency of SIT

Which information does the allergy sensor provide?

DNA+Allergy determines your personal sensitization profile, and also allows conclusions about cross and multiple sensitization. People allergic to birch pollen often won't tolerate food with similar substances as birch pollen (such as apple, carrot, or celery). Such a cross reaction is a potential danger, which is easily predictable with the allergy sensor.

The allergy sensor allows your physician, among others:

- an accurate determination of the allergenes responsible for your symptoms, in just one step
- determination of your individual allergy profile, as a decision base for the best treatment option, e.g. with medicament, or an allergy vaccination (SIT)
- recommendation of prophylactic steps in order to prevent or reduce allergic symptoms, e.g. by excluding any contact with the allergen.

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RESULTS

This chapter will give you information on your laboratory results

Allergene-specific IgE test results

These are your analysis results. The allergens are listed individually, and show the severeness of wash reaction to the corresponding allergen.

Explanation of results

ISAC Standardized Units (ISU-E)	Level
lower 0.3	Undetectable
0.3 to 0.9	Low
1 to 14.9	Moderate / High
greater/equal 15	Very High

Mainly species-specific food components

Egg White	nGal d 1	Ovomucoid	lower 0.3 ISU-E
	nGal d 2	Ovalbumin	lower 0.3 ISU-E
	nGal d 3	Conalbumin/Ovotransferrin	10 ISU-E
	nGal d 5	Livetine/Serumalbumine	lower 0.3 ISU-E
Cow milk	nBos d 4	Alpha-Lactalbumine	lower 0.3 ISU-E
	nBos d 5	Beta-Lactoglobuline	lower 0.3 ISU-E
	nBos d 8	Caseine	lower 0.3 ISU-E
	nBos d lactof.	Transferrine	lower 0.3 ISU-E
Cod	rGad c 1	Parvalbumine	lower 0.3 ISU-E
Shrimp	nPen m 2	Arginin Kinase	lower 0.3 ISU-E
	nPen m 4	Sarcoplasmatic CBP	lower 0.3 ISU-E
Cashew Nut	rAna o 2	Legumine-like protein	lower 0.3 ISU-E
Brazil Nut	rBer e 1	Storage Proteine, 2S Albumine	lower 0.3 ISU-E
Hazelnut	nCor a 9	Storage Proteine, 11S Globuline	lower 0.3 ISU-E
Walnut	rJug r 1	Storage Proteine, 2S Albumine	lower 0.3 ISU-E
	nJug r 2	Storage Proteine, 7S Globuline	lower 0.3 ISU-E
Sesame	nSes i 1	Storage Proteine, 2S Albumine	lower 0.3 ISU-E
Peanut	rAra h 1	Storage Proteine, 7S Globuline	lower 0.3 ISU-E
	rAra h 2	Storage Proteine, 2S Albumine	lower 0.3 ISU-E

	rAra h 3	Storage Proteine, 11S Globuline	lower 0.3 ISU-E
	nAra h 6	Storage Proteine, 2S Albumine	lower 0.3 ISU-E
Soy bean	nGly m 5	Storage Proteine, 7S Globuline	lower 0.3 ISU-E
	nGly m 6	Storage Proteine, 11S Globuline	lower 0.3 ISU-E
Buckwheat	nFag e 2	Storage Proteine, 2S Albumine	lower 0.3 ISU-E
Wheat	rTri a 14	Lipid Transfer Protein	lower 0.3 ISU-E
	rTri a 19.0101	Omega-g Gliadine	lower 0.3 ISU-E
	nTri a aA_TI	a-Amylase/Trypsine Inhibitor	lower 0.3 ISU-E
Kiwi	nAct d 1	Cysteine Protease	lower 0.3 ISU-E
	nAct d 5	Kiwelline	lower 0.3 ISU-E

Parvalbumin: Main allergen in fish. Markers for cross-reactivity between different fish species and amphibians. Stable to heat and digestion. Can also cause reactions to cooked fish.

Predominantly species-specific aero-allergene components

Grass pollen			
Bermuda grass	nCyn d 1	Grass, group 1	lower 0.3 ISU-E
Timothy Grass	rPhl p 1	Grass, group 1	lower 0.3 ISU-E
	rPhl p 2	Grass, Group 2/2	lower 0.3 ISU-E
	nPhl p 4	Berberine bridge enzyme	lower 0.3 ISU-E
	rPhl p 5b	Grass, group 5	lower 0.3 ISU-E
	rPhl p 6	Grass, group 6	lower 0.3 ISU-E
	rPhl p 11	Ole e 1 related protein	lower 0.3 ISU-E
Tree Pollen			
Birch	rBet v 1	PR-10 protein	lower 0.3 ISU-E
Japanese Cedar	nCry j 1	Pektate lyase	lower 0.3 ISU-E
Arizona Cypress	nCup a 1	Pektate lyase	lower 0.3 ISU-E
Olive Tree	rOle e 1	Olive, group 5	lower 0.3 ISU-E
	rOle e 9	1,3 Beta Glucanase	lower 0.3 ISU-E
Platane	rPla a 1	Invertase Inhibitor	lower 0.3 ISU-E
	nPla a 2	Polygalcturonase	lower 0.3 ISU-E

Ole e 1 is also a marker for ash pollen sensitization

Herb pollen			
Ragweed	nAmb a 1	Pektate lyase	lower 0.3 ISU-E
Common Wormwood	nArt v 1	Defensin-like protein	lower 0.3 ISU-E
White Goose Foot	rChe a 1	Ole e 1 related protein	lower 0.3 ISU-E
Wall Glasswort	rPar j 2	Lipid Transfer Protein	lower 0.3 ISU-E
Ribwort	rPla l 1	Ole e 1 related protein	lower 0.3 ISU-E
Saltwort	nSal k 1	Pectin methylesterase	lower 0.3 ISU-E
Animals			
Dog	rCan f 1	Lipocaline	lower 0.3 ISU-E

	rCan f 2	Lipocaline	lower 0.3 ISU-E
	rCan f 5	Arginine esterase	lower 0.3 ISU-E
Horse	rEqu c 1	Lipocaline	lower 0.3 ISU-E
Cat	rFel d 1	Uteroglobine	lower 0.3 ISU-E
	rFel d 4	Lipocaline	lower 0.3 ISU-E
Mouse	nMus m 1	Lipocaline	lower 0.3 ISU-E
Mildew			
A. alternata	rAlt a 1	Acid glycoprotein	lower 0.3 ISU-E
	rAlt a 6	Enolase	lower 0.3 ISU-E
A. fumigatus	rAsp f 1	Mitogillin group	lower 0.3 ISU-E
	rAsp f 3	Peroxysomal protein	lower 0.3 ISU-E
	rAsp f 6	MN Superoxyd dismutase	lower 0.3 ISU-E
C. herbarum	rCla h 8	Mannitol dehysdrogenase	lower 0.3 ISU-E
Mites			
B. tropicalis	rBlo t 5	Mites, group 5	lower 0.3 ISU-E
D. farinae	nDer f 1	Cysteine Protease	lower 0.3 ISU-E
	rDer f 2	NPC2 group	lower 0.3 ISU-E
D. pteronyssinus	nDer p 1	Cystein-Protease	lower 0.3 ISU-E
	rDer p 2	NPC2 group	lower 0.3 ISU-E
L. destructor	rLep d 2	NPC2 group	lower 0.3 ISU-E
Cockroach			
German Cockroach	rBla g 1	Cockroach, group 1	lower 0.3 ISU-E
	rBla g 2	Aspartate Protease	lower 0.3 ISU-E
	rBla g 5	Glutathion S-Transferase	lower 0.3 ISU-E

Other, mainly species-specific allergene components

Insect Poison			
Honey Bee Poison	rApi m 1	Phospholipase A2	lower 0.3 ISU-E
	nApi m 4	Melittine	lower 0.3 ISU-E
Field Wasp Poison	rPol d 5	Antigene 5	lower 0.3 ISU-E
Wasp poison	rVes v 5	Antigene 5	lower 0.3 ISU-E

If ImmunoCAP ISAC identifies a sensitization against insect poisons, a further evaluation is recommended. All linked insect poison allergy components on ImmunoCAP ISAC are free of CCDs.

Parasites			
Herring Worm	rAni s 1	Serin Protease Inhibitor	lower 0.3 ISU-E
Latex			
Latex	rHev b 1	Rubber elongation Factor	lower 0.3 ISU-E
	rHev b 3	Small rubber particle protein	lower 0.3 ISU-E
	rHev b 5	Acid protein	lower 0.3 ISU-E
	rHev b 6.01	Prohevein	lower 0.3 ISU-E

Cross Reactive Allergene Components

Serum Albumine			
Cow Milk / Meat	nBos d 6	Serum Albumine	lower 0.3 ISU-E

Dog	nCan f 3	Serum Albumine	lower 0.3 ISU-E
Horse	nEqu c 3	Serum Albumine	lower 0.3 ISU-E
Cat	nFel d 2	Serum Albumine	lower 0.3 ISU-E

A protein frequently present in animal tissues (e.g. blood, milk, beef or chicken meat, eggs). Cross reactivities between albumin are well known , e.g. between cat and dog or cat and pig.

Tropomysine			
Herring Worm	rAni s 3	Tropomysine	lower 0.3 ISU-E
German Cockroach	nBla g 7	Tropomysine	lower 0.3 ISU-E
D. pteronyssinus	rDer p 10	Tropomysine	lower 0.3 ISU-E
Shrimp	nPen m 1	Tropomysine	lower 0.3 ISU-E

An actin binding protein for muscle fibers. A marker for cross reactivity between crustaceans, mites, cockroaches, mollusks and the fish parasite anisakis simplex.

Lipid Transfer Protein			
Peanut	rAra h 9	Lipid Transfer Protein	lower 0.3 ISU-E
Hazelnut	rCor a 8	Lipid Transfer Protein	lower 0.3 ISU-E
Walnut	nJug r 3	Lipid Transfer Protein	lower 0.3 ISU-E
Peach	rPru p 3	Lipid Transfer Protein	lower 0.3 ISU-E
Common Wormwood	nArt v 3	Lipid Transfer Protein	lower 0.3 ISU-E
Olive Tree	nOle e 7	Lipid Transfer Protein	lower 0.3 ISU-E
Platane	rPla a 3	Lipid Transfer Protein	lower 0.3 ISU-E

Lipid transfer proteins (nsLTPs) are heat stable and digestion resistant proteins. They often trigger not only oral allergy syndrome (OAS), but also systemic reactions. In Southern Europe often associated with allergic reactions to fruits and vegetables.

PR-10 protein			
Birch	rBet v 1	PR-10 protein	lower 0.3 ISU-E
Alder	rAln g 1	PR-10 protein	lower 0.3 ISU-E
Hazel Pollen	rCor a 1.0101	PR-10 protein	lower 0.3 ISU-E
Hazelnut	rCor a 1.0401	PR-10 protein	lower 0.3 ISU-E
Apple	rMal d 1	PR-10 protein	lower 0.3 ISU-E
Peach	rPru p 1	PR-10 protein	lower 0.3 ISU-E
Soy bean	rGly m 4	PR-10 protein	lower 0.3 ISU-E
Peanut	rAra h 8	PR-10 protein	lower 0.3 ISU-E
Kiwi	rAct d 8	PR-10 protein	lower 0.3 ISU-E
Celery	rApig1	PR-10 protein	lower 0.3 ISU-E

In Northern and Central Europe, birch and related tree pollen are the main cause of a sensitization, which mostly is accompanied with respiratory symptoms. PR-10 proteins are present in vegetable food, and often responsible for symptoms caused by cross reactivity. Many of these proteins are unstable to heat and thus tolerated in cooked food. Often associated with local symptoms such as the oral allergy syndrome (OAS), allergic reactions in Northern Europe after consuming fruits and vegetables.

Thaumatin-like protein (TLP)			
Kiwi	nAct d 2	Thaumatine-like protein	lower 0.3 ISU-E

Act d 2 may cross react with other thaumatin-like proteins. Thaumatin-like proteins have been identified in pollen, fruit (e.g. apples and grapes), mildew (alternaria), mites and insects.

Profiline			
Birch	rBet v 2	Profiline	lower 0.3 ISU-E

Latex	rHev b 8	Profiline	lower 0.3 ISU-E
Annual Mercury	rMer a 1	Profiline	lower 0.3 ISU-E
Timothy Grass	rPhl p 12	Profiline	lower 0.3 ISU-E

Profilines show distinct homologies and cross reactions. Cross reactions may occur even in remotely related species. Rarely associated with clinical symptoms, but may even cause severe reactions in a minority of patients (e.g. to citrus fruit, melon, banana, litchi, and tomato).

CCD	nMUXF3		lower 0.3 ISU-E

A marker for sensitization to cross reactive carbohydrate determinants. Often, allergens are glycoproteines, meaning proteins with connected carbohydrate chains (glycanes). Rarely associated with clinical symptoms, but may have clinical significance in a minority of patients.

Polcalcin (calcium binding protein)			
Birch	rBet v 4	Polcalcine	lower 0.3 ISU-E
Timothy Grass	rPhl p 7	Polcalcine	lower 0.3 ISU-E

A marker for cross reactivity between different types of pollen

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Here you can find information on all tested allergens.

Egg white

Egg white allergy is a food allergy with the main triggers ovomucoide, ovalbumine, ovotransferine and lysozome. Any sensitization mainly targets egg white components, and very rarely egg yolk components. It is the second most important food allergy in children after milk allergy, with a prevalence of 1% to 2 %. In case of a sensitization to the heat stable ovalbumine, boiled and fried eggs are generally well tolerated. Ovomucoide however remains as an allergen, even if eggs are hard boiled. An egg white allergy may also play a role in several vaccinations, as the drugs are partly produced in chicken embryos. The highest egg white content is present in yellow fever and influenza vaccines. Symptoms such as dermatitis, asthma, urticaria and anaphylactic shock may occur.

Analysis result			
Egg white			
Egg White	nGal d 1	Ovomucoid	-
	nGal d 2	Ovalbumin	-
	nGal d 3	Conalbumin/Ovotransferrin	RISK!
	nGal d 5	Livetine/Serumalbumine	-

Food

- Boiled or raw eggs
- Baked goods
- Meat products (sausages, patés,etc.)
- Sweets
- Drinks
- Emulgators
- Stabilizers

Many foods contain traces of eggs. Thus, allergic people must watch out for these hidden allergens. Be mindful of the following terms in the ingredients list: egg oil, egg protein, liquid egg white, frozen egg, dry egg, dry egg white, dry egg yolk, (ovo-)albumine, ovoprotein, Simplesse, full egg, E322, E1105, and the term: "may contain traces of egg".

Cross reactions

An allergic reaction may appear with these substances, because of their structurally similar allergens

- Eggs of different animals (e.g. quail eggs)

Treatment

Treatment of an egg allergy should consist of avoiding eggs and egg products. Without a sensitization to ovomucoide, it may be assumed, that heated food is well tolerated. With a severe egg allergy, it is reasonable to have an emergency dispensary available. In case of children, the allergy may disappear during adolescence. Thus it is recommended to perform another allergy test during the condition.

Cow milk

Milk is one of the most common food allergy triggers. In Europe, it is estimated that up to 7 % of infants, and about 1% of adults suffer from cow milk allergy. As with any allergy, this is a defense reaction of the immune system, and must be differentiated from the more common milk lactose intolerance. The most important allergen components of cow milk are four whey proteins (Bos d 5 Alpha-Lactalbumine, Bos d 4 Beta-Lactoglobuline, Bos d 6 Serumalbumine BSA, Bos d lactoferrine), and the main allergen Bos d 8 (caseine).
In case of a sensitization to one of the four heat unstable proteins, it may be assumed that a reaction will only happen to fresh cow milk, as these proteins are destroyed with temperatures of about 77° C. Bos d 8 however, may also trigger symptoms after heating. In case of Bos d 6, a beef meat allergy may also occur. In this case, caution is due in case of substances containing albumin (e.g. in artificial insemination or cell therapy). Symptoms of a cow milk allergy are very manifold, and may affect skin and respiration, or the digestive tract, or heart and circulatory system. It may be assumed for a majority of the affected infants (about 75 %), that a tolerance will develop within the first 2 years, and afterwards, milk will be tolerated.

Analysis result			
Cow milk			
	nBos d 4	Alpha-Lactalbumine	-
	nBos d 5	Beta-Lactoglobuline	-
	nBos d 8	Caseine	-
	nBos d 6	Transferrine	-

Food

- Cow milk in any form
- Chese, butter, cream, yoghurt, and other dairy products
- Whey
- Cocoa powder
- Chocolate
- Diverse baby foods
- Diverse baking goods
- Convenience products

Allergic persons should be aware of the following terms in the ingredients list: casein, lacto-, low fat milk, milk powder, whey protein, acid whey, sweet whey, animal protein

Cross reactions

An allergic reaction may appear with these substances, because of their structurally similar allergens

- Other animal milk
- Soy milk
- Beef

Treatment

According to whether people react allergically to whey protein or casein, different treatments are recommended. If there is a sensitization only to whey proteins, only certain, unheated foods must be avoided. In case of an additional sensitization to casein (Bos d 8), any foods containing cow milk should be avoided. As cow milk contains many important nutrients, such as quality protein, calcium, vitamin b12 and vitamin d, other foods containing these nutrients should be consumed in case of an eliminatory diet. Especially in case of small children it is essential to use substitutes (cow milk free, hypoallergenic foods), in order to avoid deficiencies. In case of a cow milk allergy, there is also the option of an oral hyposensitization. This involves an intake of an increasing amount of milk over the course of several years and under medical supervision, in order to achieve a tolerance.

Fish

In Europe, allergic reactions to fish are often observed. Here, fish belongs to the most common triggers of food allergies, and may lead to severe allergic reactions. A fish allergy is mostly triggered as an immunological reaction to the protein in the white muscle meat (parvalbumin). Parvalbumin is very heat resistant, and remains intact even in cooked food. Furthermore, it has a high structural similarity to other fish allergens, which can often cause cross allergies. The most common symptoms of a fish allergy include: dyspepsia, diarrhea, nausea, rashes and OAS (oral allergic syndrome). In the worst case, an anaphylactic shock may occur.

Analysis result			
Fish			
Cod	rGad c 1	Parvalbumine	-

Food

- Cod

Attention! With a severe fish allergy, symptoms such as asthma may already occur inhaling the steam when preparing fish. In case of processed products, always be aware of the labeling

Cross reactions

An allergic reaction may appear with these substances, because of their structurally similar allergens

- Other fish meat

Treatment

Mostly, therapy consists of avoiding the allergy triggering fish types. As with a fish allergy, very little amounts of allergens may trigger an allergic reaction, and it is especially recommended to take care of cross contamination in the kitchen or in restaurants. In case of a fish eliminatory diet, omega 3 fatty acids, trace elements and other nutrients should be consumed from different food sources. Because of the high risk of an anaphylactic shock, an emergency set (antihistamine, adrenaline, cortisone, asthma spray) should be available at any time.

Wheat

Soft wheat (triticum aestivum), also called bread wheat, is one of the most common cereal types in the world, and an important staple food. In case of a wheat allergy, the body will react allergically to the protein part of the wheat grain, which any person gets in contact with very early in life. Persons working in bakeries, mills, or in the food industry are especially endangered, because a sensitization by inhalation of wheat dust may lead to the so called baker asthma. Symptoms of a wheat allergy include asthma, digestive problems, neurodermitis, nausea, and psychological distortions.

Analysis result			
Wheat			
	rTri a 14	Lipid Transfer Protein	-
	rTri a 19.0101	Omega-g Gliadine	-
	nTri a aA_TI	a-Amylase/Trypsine Inhibitor	-

Food

- Bread
- Flour
- Wheat starch
- Pasta (noodles, etc.)
- Cakes
- Dumplings
- Processed foods
- Baby food

Allergic persons should be aware of the following terms: gluten, bulgur, couscous, hard wheat, flour, starch, wheat bran, wheat malt, wheat protein, breadcrumbs, vital glue, spelt

Cross reactions

An allergic reaction may appear with these substances, because of their structurally similar allergens

- Different wheat types

Treatment

Wheat allergy is a life-long, incurable condition. The only treatment option is a diet change and avoidance of wheat products. Avoiding wheat products means an important diet change, thus it is important to consider a balanced diet. Substitutional products such as spelt, corn, or rice may help. A hyposensitization might be viable under medical supervision.

Peanut

A peanut allergy is a food allergy type I, triggered by the so called Ara h allergens. In the US, an average of each 100th suffers from this condition, and in Europe, the number is constantly increasing due to an increased use in food industry. Peanut allergy is considered one of the most aggressive allergies, because contact to very small amounts (few micrograms) can trigger severe allergic reactions. Symptoms commonly affect the skin, the digestive tract, and the respiratory tract. Furthermore, an anaphylactic shock can occur, which may lead to death.

Analysis result			
Peanut			
	rAra h 1	Storage Proteine, 7S Globuline	-
	rAra h 2	Storage Proteine, 2S Albumine	-
	rAra h 3	Storage Proteine, 11S Globuline	-
	nAra h 6	Storage Proteine, 2S Albumine	-

Food

- Peanut
- Peanut Butter

Peanuts are processed in many different foods. Allergic people should be aware of the following labeling: "May contain traces of nuts".

Cross reactions

An allergic reaction may appear with these substances, because of their structurally similar allergens

- Walnut
- Cashew nut
- Brazil nut
- Pistache
- Soy bean

Treatment

According to the allergy grade, any peanuts containing food should be strictly avoided. This may result difficult in practice, as in many products, peanuts or peanut oils are "hidden". In case of packaged food, the ingredients list should be consulted. Because of the high risk of an anaphylactic shock, an emergency set (antihistamine, adrenaline, cortisone), should always be available Another therapy option in case of a severe allergy is a hyposensitization, which involves ingesting small traces of peanuts under medical supervision. This will not lead to a peanut tolerance, only to a limitation of the allergic reaction.

Soy bean

Soy beans have got a long tradition in many countries, and are becoming more and more popular in Europe. Vegetarians and also the food industry have discovered the versatile qualities of this legume. Soy is present in many foods, in form of flakes, flour, lecithin, and especially, oil. Thus, the soy bean has become a worldwide staple food in the past years, which led to a significant increase of soy allergies. Soy allergies often occur together with cow milk allergies. Two allergens of the soy bean (Gly m 5, Gly m 6) are very stable, and hardly affected by temperature, oxygen, or fermentation. In heated foods, Gly m 4 is only present in small amounts, and mostly is not offending. As Gly m 4 has a high structural similarity to the birch pollen protein (Bet v 1), reactions may occur in birch pollen allergic persons. Type and grade of symptoms may greatly vary. Symptoms include nausea, vomiting, digestive problems, skin problems, respiratory reactions up to death.

Analysis result			
Soy bean			
	rGly m 4	PR-10 protein	-
	nGly m 5	Storage Proteine, 7S Globuline	-
	nGly m 6	Storage Proteine, 11S Globuline	-
Birch	rBet v 1	PR-10 protein	-

Food

- Soy bean
- Soy germs
- Tofu
- Soy drinks
- Soy flour
- Soy sauce
- Soy oil

Allergic people should be aware of the following terms when shopping: edamame, kinako, miso, natto, okara, shoyu, tamari, tempeh, tofu, tvp, e322, lecitine, e426, yuba. Soy is also used in cosmetics, and medicaments such as narcotics, antibiotics, pain medications, psychotropic drugs, and vitamins. Even if the amount of protein is not relevant in most cases, allergic people should be aware of the ingredients. The so called soy germ is the germ of the mango bean, and may be consumed by people with soy allergy without any problems.

Cross reactions

An allergic reaction may appear with these substances, because of their structurally similar allergens

- Legumes
- Peas
- Lentils
- Beans

Treatment

In case of soy allergy, the same recommendations apply as for most allergies. Therapy mainly consists of a diet change. Soy and soy products must be totally avoided in case of a primary soy allergy (Gly m 5;Gly m 6). In case of a sensitization to Gly m 4, or the structurally similar Bet v 1, boiled and fermented soy products are often well tolerated. However, caution is due in case of a severe allergy. These products may contain allergens, according to the production process. Because of the high risk of an anaphylactic shock, an emergency set (antihistamine, adrenaline, cortisone) should always be available.

Hazelnut

Hazelnuts are a common food allergy trigger worldwide. They are widely used in foods, and may show different symptoms, according to the grade of sensitization and trigger. A significant correlation between trigger and grade of symptoms has been shown. If there is a sensitization to the pollen allergen Cor 1, oral reactions with swellings in mouth and throat, and rhinitis and skin reactions may occur. The hazelnut shrub blooms from February to April. In a 50 % of people with a hazel pollen allergy, there has been a clinically relevant sensitization to hazelnuts. If a sensitization to Cor a 9, or Cor a 8 is present, there are frequently strong reactions up to anaphylactic shock. People with a birch pollen allergy often show allergies to hazelnuts.

Analysis result			
Hazelnut			
	nCor a 9	Storage Proteine, 11S Globuline	-
	rCor a 8	Lipid Transfer Protein	-
	rCor a 1.0101	PR-10 protein	-
	rCor a 1.0401	PR-10 protein	-

Food

- Hazelnuts (ground, roasted, etc.)
- Hazelnut Flour
- Hazelnut Creme
- Nougat

Hazelnuts may also be present in many different foods. Allergic people should be aware of the following labeling: "may contain traces of nuts".

Cross reactions

An allergic reaction may appear with these substances, because of their structurally similar allergens

- Other types of nuts (peanuts, walnuts, Brazil nuts, cashew nuts, pistachios, pecan nuts, coconuts)
- Pollen (birch, mugwort, alder, hornbeam, oak, elm, poplar, ash, maple)
- Fruit (apple, peach, apricot, plum)

Treatment

Hazelnut and hazelnut products should be avoided. As in all nut allergies, it is sometimes difficult to follow these directions as nuts are often hidden ingredients in a variety of food products. In case of industrially packages products always check the packaging for “may contain nuts” warnings. Due to the increased risk of an anaphylactic shock, an emergency kit (containing an anti-histamine, adrenaline and cortisone) should be kept close. A

hyposensibilisation can be attempted under close medical supervision.

Prawn

Different types of prawn and shrimps are consumed worldwide. Due to the increased popularity of the Asian cuisine, consume has increased in the past years. A prawn allergy belongs to the less common food allergies, but reactions may be very severe. In most cases, very small amounts may trigger a reaction. The allergens belong to the tropomysine group, and show strong homologies to the allergens of other crustecea (crabs, langouste, lobster), and also house dust mites, which can introduce cross reactions. Typical symptoms of a prawn allergy are the oral allergy syndrom (OAS), swellings of the skin, itching, circulatory problems, digestive problems, and in worst case, anaphylactic shock

Analysis result			
Prawn			
	nPen m 1	Tropomysine	-
	nPen m 2	Arginin Kinase	-
	nPen m 4	Sarcoplasmatic CBP	-

Food

- Prawn
- Scampi
- Shrimps

People with severe allergy should be aware of medicaments and cosmetics with ingredients such as fish oil and cod liver oil

Cross reactions

An allergic reaction may appear with these substances, because of their structurally similar allergens

- Seafood
- Lobster
- Mussles
- Mites
- Insects
- Parasites

Treatment

Treatment of a prawn allergy consists of the consequent avoidance of prawns and relevant seafood. People with allergy should be aware of the ingredients list in case of processed products. Caution is also due in restaurants, because of possible cross contamination. Because of the severe reactions caused by prawn allergies, an emergency set should always be available (antihistamine, adrenaline, cortisone). A hyposensibilization may be appropriate, and should

be discussed with the concerned physician.

Cat

In many countries, cats belong to the most popular pets, and often are a reason for an allergic reaction of the respiratory tract. A cat allergy is caused by a hypersensitivity to a protein in saliva and skin dander of cats. The main allergen of cats, Fel d 1, is responsible for a 90 % of all hypersensitivity cases. The allergen spreads easily due to the very small particle size, and easily attaches to cloths, furniture, mattresses, carpets, and curtains. This easy ability to spreading will make it difficult to completely avoid cat allergens. A cat allergen mainly causes oral conditions, such as allergic rhinitis, sneezing, asthma, dyspnea, hives and redness of eyes. IN case of a sensitization to Fel d 2 (serum albumin), there often is a cross reactivity to dog, and sometimes other animals (such as horse, cattle, pig)

Analysis result			
Cat			
	rFel d 1	Uteroglobine	-
	nFel d 2	Serum Albumine	-
	rFel d 4	Lipocaline	-

Cross reactions

An allergic reaction may appear with these substances, because of their structurally similar allergens

- Big cats
- Dogs
- Other fur animals

Treatment

One approach is to avoid the relevant allergens. However, this may result difficult, because cat allergens may be present anywhere due to their strong prevalence. Especially in common spaces, such as class rooms, waiting rooms, and public buildings, it is merely impossible to avoid cat allergens. Cat owners with an approved allergy should consider to give away their pet. The following steps may help to reduce cat allergens: frequent cleaning of living space, remove carpets and upholstery, avoid cat access in sleeping rooms, special air filters, washing the cat, frequent ventilation. The only causal therapy will be a hyposensibilization (SIT), and should be discussed with the concerned physician.

Dog

After cat allergies, dog allergies are among the most common sensitization to animals. However, the symptoms are generally less severe. The specific dog allergens Can f 1, Can f 2 and Can f 5 are proteins from the animal's saliva and skin flakes. Can f 3 is the dog's serum albumin, and is responsible for cross reactions. However, not only the dog itself may trigger a hypersensitivity in allergic people, but also people who have been in contact with the dog. Basically, each dog breed can trigger an allergy, but very hairy dogs generally are a greater risk. Dog allergy is a type I allergy whose symptoms occur directly after deposition. Mostly these are conditions of throat, nose and mouth, such as rhinitis, cough, sneezing, dyspnea, until allergic asthma, rhinitis, and conjunctivitis.

Analysis result			
Dog			
	rCan f 1	Lipocaline	-
	rCan f 2	Lipocaline	-
	rCan f 5	Arginine esterase	-
	nCan f 3	Serum Albumine	-

Cross reactions

An allergic reaction may appear with these substances, because of their structurally similar allergens

- Cats
- Other fur animals

Treatment

Basically, an avoidance of dogs would be recommended, which is not always viable in practice. Moreover, dog allergens are not only present in households with dogs, but also in public spaces and transport vehicles. However there are several steps how allergic persons can minimize allergic reactions (frequent vacuum cleaning, frequent bathing of dogs, special air filters, washing of hands after contact). Symptoms may be treated with antihistamines. For a causal treatment of the issue, hyposensitization is the only option.

Mite

The house dust mite belongs to the family of spiders, and is present in any households below 1500 meters above sea level. The allergy trigger is not the mite itself, but it's protein containing excrement which accumulate in the house dust. Especially mattresses are affected, because they provide an ideal habitat for mites. Studies have shown that house dust mites are among the most common triggers of all year asthma, rhinitis, and conjunctivitis. A reduction of the mites concentration frequently alleviates the symptoms significantly.

Analysis result			
Mites			
B. tropicalis	rBlo t 5	Mites, group 5	-
D. farinae	nDer f 1	Cysteine Protease	-
	rDer f 2	NPC2 group	-
D. pteronyssinus	nDer p 1	Cysteine Protease	-
	rDer p 2	NPC2 group	-
L. destructor	rLep d 2	NPC2 group	-
D. pteronyssinus	rDer p 10	Tropomysine	-

Allergen exposition

- Dust
- Bed
- Carpets
- Cushions
- Upholstery furniture
- Stuffed toys

Cross reactions

An allergic reaction may appear with these substances, because of their structurally similar allergens

- Other mites species
- Prawn, snails, cockroaches (tropomysine, Der p 10)

Treatment

A reduction of mites concentration by reducing air humidity and temperature, frequent change of bedding, and general hygiene can significantly reduce mites allergy symptoms. Also, antihistamines may alleviate conditions such as sneezing, rhinitis, rash, and watery eyes. Besides proper house maintenance and symptomatic treatments, there's a high chance that people with mites allergy may lose their symptoms due to hyposensitization.

Insect Poison

Insect poison allergies (also called hymenopteran poison allergies) are quite rare compared to food allergies, but present a severe danger for people concerned. In case of a sensitization, even one stitch may be life threatening. Reactions commonly occur after bee and wasp stitches, less frequently hornets and bumblebees. The symptoms vary, and are separated in 5 grades. They vary from light swellings of the face, and itching, up to apnea and circulatory arrest. Therefore, emergency medical care must be called immediately, if an allergic reaction occurs.

Analysis result			
Insect Poison			
Honey Bee Poison	rApi m 1	Phospholipase A2	-
	nApi m 4	Melittine	-
Field Wasp Poison	rPol d 5	Antigene 5	-
Wasp poison	rVes v 5	Antigene 5	-

Cross reactions

An allergic reaction may appear with these substances, because of their structurally similar allergens

- Bee
- Bumblebee
- Wasp
- Hornet

Treatment

Because of the strong allergic reactions, allergic persons should avoid to be stung. This involves avoiding eating outdoors, cloths covering arms and legs, not walking barefoot and avoiding intense perfumes. Affected persons should always have an emergency set (antihistamine, cortisone, and adrenaline) available, in order to treat the allergic reaction. In case of an insect poison allergy, hyposensitizations have a high success rate (more than 80% after 5 years).

Timothy Grass

Timothy grass is one of the most common grasses, and a popular animal feeding plant. Timothy grass blooms from early summer to mid summer, and can be found on fields and grasslands, and on roadsides. Grasses distribute their pollen through the wind, which leads to veritable pollen clouds during the blooming time. Timothy grass is an aero-allergen, and one of the most common causes of rhinitis, conjunctivitis, and allergic asthma during the summer months.

Analysis result			
Timothy Grass			
	rPhl p 1	Grass, group 1	-
	rPhl p 2	Grass, Group 2/2	-
	nPhl p 4	Berberine bridge enzyme	-
	rPhl p 5b	Grass, group 5	-
	rPhl p 6	Grass, group 6	-
	rPhl p 11	Ole e 1 related protein	-
	rPhl p 12	Profiline	-

Allergen exposition

- Early summer to mid summer (blooming time June to August)

Cross reactions

An allergic reaction may appear with these substances, because of their structurally similar allergens

- Other grasses
- Tomato
- Peanut
- Kiwi
- Fruit and vegetables

Treatment

Treatment strongly depends of the type of allergic symptoms. First, allergens should be avoided as much as possible (avoiding meadows, pastures, and fields). Especially recently mowed pastures will lead to a severe allergen load. Symptoms may also be treated with medicament containing antihistamines, or cortisone. A hyposensitization may be conducted under medical supervision, according to the type of symptoms.

Birch

A birch pollen allergy is one of the most common pollen allergies (high fever). Many birch pollen allergies have already been described. The main allergen of the birch is Bet v 1, the main trigger of birch pollen allergy in humans. In Northern and Central Europe, these tree pollen are the main causes of sensitization, which is mostly accompanied with respiratory symptoms. A pollen exposure of the allergen source may cause conjunctivitis, rhinitis, and asthma in spring, and is associated with oral allergy syndrome. Birch pollen may also trigger severe cross reactions with other types of pollen, and diverse foods.

Analysis result			
Birch			
	rBet v 1	PR-10 protein	-
	rBet v 2	Profiline	-
	rBet v 4	Polcalcine	-

Allergen exposition

- Spring to early summer

Cross reactions

An allergic reaction may appear with these substances, because of their structurally similar allergens

- Other pollen types
- Apple
- Tomato
- Carrot
- Potato
- Peanut
- Hazelnut
- Celery
- Soy

Treatment

Primarily, the optimal treatment consists in avoiding the allergens. Allergic people should be aware of times with especially strong pollination (mostly late morning), and keep windows and doors closed during this time. Furthermore, there are special pollen grids which may be installed. Combination medicament with antihistamines and cortisone are recommended treatments. The option of a hyposensitization exists for especially severe symptoms.

Olive

In Southern Europe, olive pollen allergies are among the most common type I allergies, with a 35 % of all persons with pollen allergy. Therefore, the olive tree is the most important cause for respiration allergies. Pollination mainly happens through insects, in the blooming period from April to June. The main allergens of the olive are Ole e 1, and Ole e 9, which are responsible for more than 70% of olive pollen allergies. Ole e 7 (LTP) belongs to the cross reactive allergen components. Symptoms of an olive pollen allergy are mainly respiratory problems such as rhinitis, conjunctivitis, and asthma. Allergic reactions to the olive fruit, and the obtained oil have been reported very rarely.

Analysis result			
Olive			
	rOle e 1	Olive, group 5	-
	rOle e 9	1,3 Beta Glucanase	-
	nOle e 7	Lipid Transfer Protein	-

Allergen exposition

- Spring (April to June)

Cross reactions

An allergic reaction may appear with these substances, because of their structurally similar allergens

- Olive tree
- Privet
- Lilac
- Ash
- Cypress

Treatment

An olive pollen allergy may be equally treated as most pollen allergies. First step is avoidance of the relevant allergens. Symptoms may be alleviated with antihistamines and cortisone. The only "causal" therapy consists of a hyposensitization, which has an especially high success rate in pollen allergies.

Mugwort

Mugwort pollen is one of the main herb pollen allergens, and a common trigger of high fever. Mugwort is a wild herb which can be found on grasslands, and on roadsides. Blooming times vary regionally, between July and September. Mugwort pollen is an especially aggressive allergy trigger, and may cause symptoms such as asthma, allergic rhinitis, allergic-conjunctivitis, eczema, and anaphylaxy. Because of the close relationship of mugwort with other herbs, there are frequently cross reactions with foods.

Analysis result			
Mugwort			
	nArt v 1	Defensin-like protein	-
	nArt v 3	Lipid Transfer Protein	-

Allergen exposition

- Summer (July to September)

Cross reactions

An allergic reaction may appear with these substances, because of their structurally similar allergens

- Pennycress
- Herbs
- Spices

Treatment

Just as with most pollen associated allergens, a hyposensitization is the only causal treatment. This should be performed under supervision by the concerned physician. Light to medium symptoms may be treated by antihistamines and cortisone drugs. As a mugwort allergy is often accompanied by allergic reactions to certain food items, which is why these must be strictly avoided,

ALLERGIES

YOUR LAB FINDINGS

YOUR RESULTS

SCIENCE

ADDITIONAL INFORMATION

SCIENCE

This chapter shows the science behind the test.

References

All our results and processes are based on current scientific information and comply with all legal requirements.

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ALLERGIES

YOUR LAB FINDINGS

YOUR RESULTS

SCIENCE

ADDITIONAL INFORMATION

ADDITIONAL INFORMATION

In this chapter you will receive useful and helpful information

Certifications

Our laboratory is one of the most modern and automated laboratories in Europe, and has numerous certifications and quality assurance systems that meet international standards or even exceed them. The various fields of business are certified separately to the highest standards.

Analysis for Lifestlye-purposes

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Customer Service

Questions or comments about our service?

Our customer service team is happy to help with any enquiries, questions or problems. You can contact us in the following ways:

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Our team is looking forward to your call. Customer satisfaction is our first priority. If you are not fully satisfied with our service, please let us know. We will do our best to help find a satisfactory solution to your problem.

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Established analysis methods
qRT-PCR, DNA sequencing, fragment length analysis, CNV assay, GC-MS, Immunocap ISAC, Cytolisa

Detection rate
~>99%

Report generated
07/02/2018

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V515

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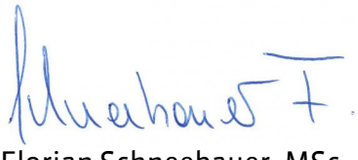
Florian Schneebauer, MSc.

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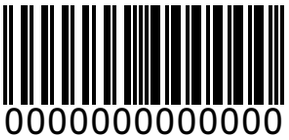
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MY Allergy

Maria Musterfrau

DEMO_ML