my**food**profile

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myfoodprofile for efficient laboratory diagnostics:
Detection of food-specific IgG antibodies

Food sensitivity

Food sensitivity is an overreaction of the immune system that is associated with an increased production of IgG antibodies against foods and can lead to health complaints (▷ Fig. 1). The underlying immunological processes are similar to those in allergy (type I allergy), which is why food sensitivities are also called type III allergies. However, unlike allergy, where the reaction occurs within minutes of contact with the allergen, the production of IgG antibodies is gradual and symptoms occur with a time delay after ingestion of the food antigens in question (▷ Fig. 2). Since the symptoms of food sensitivity are also manifold and can be non-specific, the identification of the trigger and adequate treatment are difficult in most cases. However, a simple and quick laboratory test can provide clarity: **myfoodprofile** enables efficient determination of IgG antibodies against more than 200 different foods.

The myfoodprofile concept

The **myfoodprofile** products are reliable and validated enzyme immunoassays that support the detection of food sensitivities and can be easily integrated into existing laboratory routines. Each multiparameter line blot contains up to 54 food extracts immobilised on separate membranes (▷ Fig. 3). If there are specific IgG antibodies present in the patient sample, these bind to the antigens contained in the extract and can be detected semiquantitatively by means of a colour reaction in the last step of the test procedure – an established test principle in serology (▷ p. 4). To ensure the high quality of the **myfoodprofile** test systems, they are developed and optimised in a standardised special procedure. The extracts used in the coating of the blot membranes are obtained exclusively from high-quality foods in our own, likewise standardised manufacturing processes and are carefully validated. All **myfoodprofile** tests can be performed both manually and automatically in daily laboratory routine.

Digestive tract
Constipation/diarrhoea
Flatulence
Irritable bowel syndrome
Crohn's disease/ulcerative colitis

Metabolism
Overweight/obesity

CNS
Headache/migraine
Fatigue

Skin
Eczema/dermatitis
Psoriasis

Musculoskeletal system
Joint pain
Rheumatic diseases

1   Potential complaints in food sensitivity *

*   *This list is not exhaustive and the complaints mentioned are not necessarily associated with elevated titers of food-specific IgG antibodies. However, a large number of peer-reviewed publications and case studies suggest a connection between IgG antibodies directed against food antigens and various chronic inflammatory diseases. This discourse has not yet been concluded among experts, nor has a consensus been reached.*

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At a glance:
Advantages of the myfoodprofile concept

> CE marking of all **myfoodprofile** tests

> Proven immunoblot technology including ready-to-use reagents

> Automated test processing with up to 44 patient samples in one run possible

> Only small sample volume necessary ($\leq 80\,\mu l$)

> Rapid test performance, semiquantitative results after $\sim 4\,h$

> Verification of correct test performance possible due to a control band and 4 calibrator bands on each blot strip

> Excellent reproducibility of test results

> Software-based, objective evaluation and archiving of results

> Convenient and correct assignment of the results to the corresponding patient data by means of barcodes

> Determination of IgG reactivity against more than 200 foods possible

> Various test profiles available

> Generation of result-based, individualised nutritional recommendations for the patient

	Sensitivity (type III allergy)	Allergy (type I allergy)
Reaction time	Time delayed	Normally immediately
Mediated by antibodies of the class …	IgG	IgE
Mechanism	Gradual production of immune complexes	Release of histamine
Symptoms	Not life-threatening	Sometimes serious to life-threatening
Time	Often transient, especially with dietary changes (with temporary elimination)	Mostly lifelong

2   Food sensitivity and type I allergy compared

| Calibrators and controls | 54 – 49 | 48 – 43 | 42 – 37 | 36 – 31 | 30 – 25 | 24 – 19 | 18 – 13 | 12 – 7 | 6 – 1 |
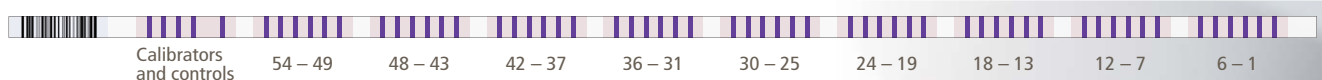
3   myfoodprofile blot strips coated with 54 different food extracts

The myfoodprofile test principle

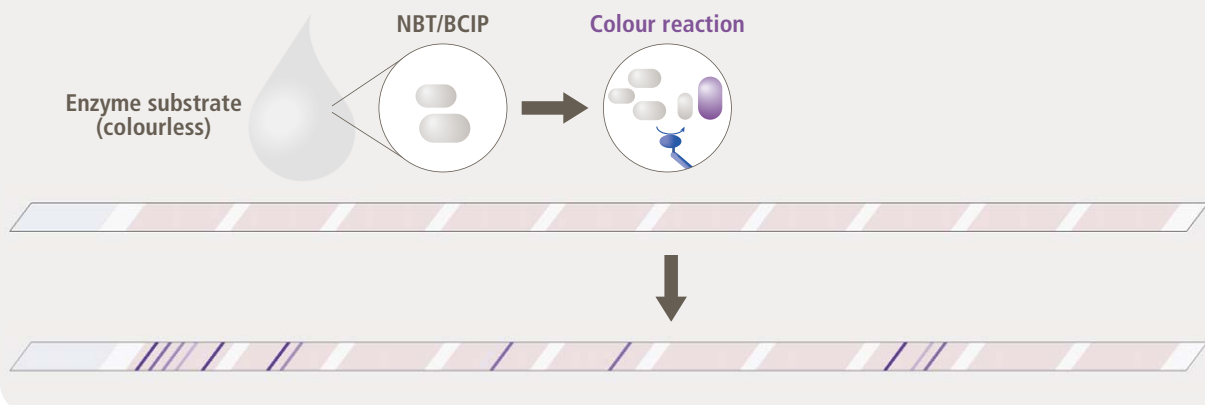### 1. Incubation of the blot strip with diluted patient sample *

Sample

Food-specific IgG-antibody

Immobilised antigens from food extracts

Specific binding

* Serum or EDTA, citrate or heparin plasma

2. Incubation with enzyme conjugate

Enzyme conjugate

Antibody against human IgG, labelled with alkaline phosphatase

Specific binding
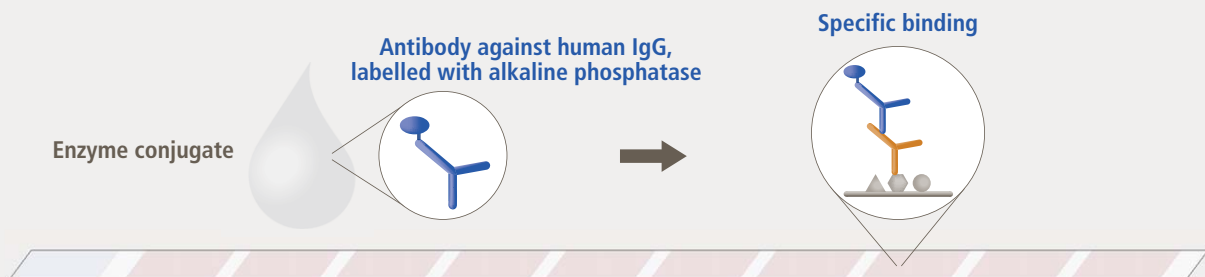
3. Incubation with enzyme substrate (NBT/BCIP)

Enzyme substrate (colourless)

NBT/BCIP

Colour reaction

4. Software-based detection and categorisation of the band intensities

Four calibrator bands

Serum control band to confirm correct test performance

Bands with different colour intensities indicate IgG reactivities to food antigens

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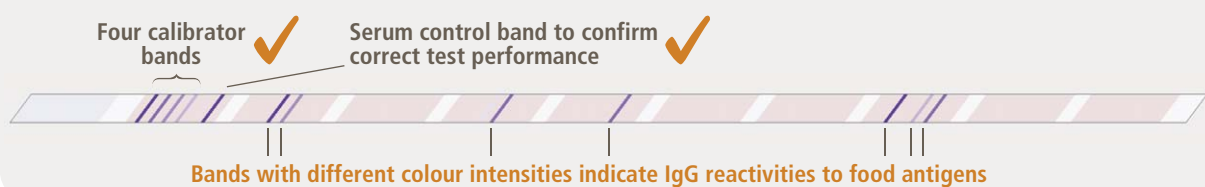
Automation solutions for myfoodprofile

The EUROBlotOne (▷ Fig. 4) and the EUROBlotMaster 44 (▷ Fig. 5) are suitable for fully or semiautomated processing of the **myfoodprofile** blot strips. Both instruments enable effective, reliable and standardised processing of the tests, resulting in particularly high precision and reproducibility of the test results.

Fully automated processing

The EUROBlotOne is a compact benchtop instrument that handles the automated sample identification and dilution, all incubation and washing steps as well as the drying and photography of the incubated strips. Up to 44 strips can be processed per run.

4   EUROBlotOne

Semiautomated processing

With the EUROBlotMaster 44, up to 44 strips can be processed. The compact benchtop device prepares the strips and performs all incubation and washing steps. The visual recording and digitisation of the incubated strips is carried out with a flatbed scanner (▷ Fig. 6).


5   EUROBlotMaster 44

6   EUROLineScan-compatible flatbed scanner

Automated evaluation

The semiquantitative evaluation of the blot results as well as the management and digital archiving of the data are carried out with the EUROLineScan software. It converts the colour intensity of the bands into relative units (RU), categorises them according to the intensity of the reaction and transfers the test results into a clear result report (▷ Fig. 7), which is supplemented by personalised nutrition recommendations for the patient. In addition, the test results can be digitally transferred to existing laboratory information systems (LIS).
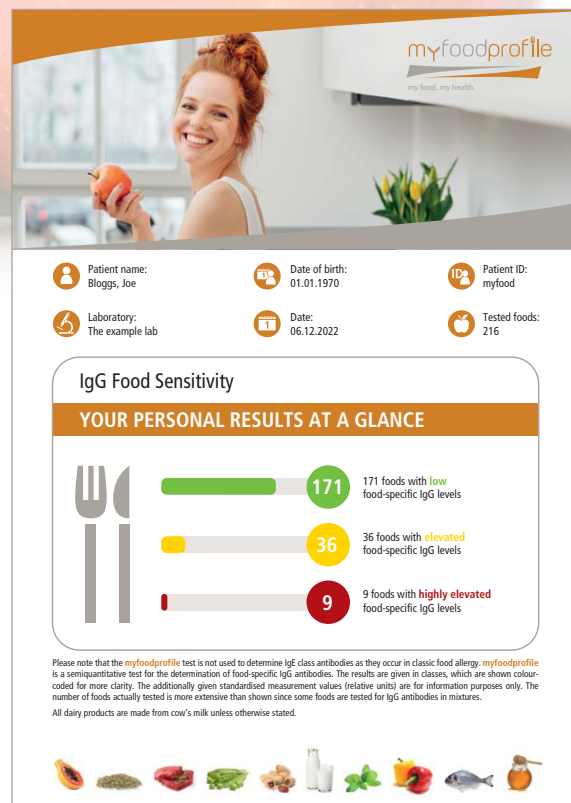
7   myfoodprofile result report

Detailed results: The myfoodprofile tests

myfoodprofile enables the determination of specific IgG-antibody reactions to more than 200 different foods from the following categories:

> Gluten-containing cereals

> Gluten-free cereals & alternative foods

> Legumes

> Nuts & seeds

> Fruits

> Vegetables

> Milk products & egg

> Meat

> Fish & seafood

> Herbs & spices

> Various

In the result report, the IgG reactivities of the patient to the tested foods are clearly presented in detail, sorted by category (▷ Fig. 8).

YOUR PERSONAL RESULTS IN DETAIL

Bloggs, Joe   myfood

Milk products & egg	Intensity of reaction
Butter	≤7.5
Emmental cheese	≤7.5
Yogurt	≤7.5
Kefir	≤7.5
Mozzarella	≤7.5
Curd cheese	11.5
Cow's milk	16.0
Beta-lactoglobulin	16.4
Casein	17.4
Cottage cheese	21.1
Processed cheese	23.6
Camembert	25.7
Sheep's milk/sheep's cheese	27.6
Goat's milk/goat's cheese	33.3
Egg yolk (chicken)	>50.0
Egg white (chicken)	>50.0

Meat	Intensity of reaction
Ostrich	≤7.5
Goat	≤7.5
Pork	≤7.5
Turkey	≤7.5
Beef	≤7.5
Roe deer	≤7.5
Duck	8.7
Goose	15.7
Lamb	16.6
Quail	18.4
Chicken	28.7
Horse	44.3
Guinea fowl	46.6
Rabbit	>50.0

Fish & seafood	Intensity of reaction
Trout	≤7.5
Herring	≤7.5
Crab	≤7.5
Octopus	≤7.5
Haddock	≤7.5
Monkfish	≤7.5
Sardine	≤7.5
Ocean perch	≤7.5
Sole	≤7.5
Shrimp/prawn	≤7.5
Caviar	≤7.5
Eel	≤7.5
Pike	14.0
Spirulina spp.	14.3
Gilthead seabream	15.3
Venus clam	18.0
Carp	18.1
Turbot	20.8
Sea bass	21.3
Tuna	24.9
Crayfish	26.6
Anchovy	29.3
Mackerel	30.5
Salmon	32.8
Oyster	35.9
Squid	>50.0
Swordfish	>50.0
Lobster	>50.0
Codfish	>50.0

Intensity of reaction in relative units:	≤15	>15–≤25	>25–≤50	>50

8   Detailed test results in the myfoodprofile result report

Example: myfoodprofile advanced 1 *

Barley flour, durum wheat flour, gluten, oat bran, rye flour, spelt flour, wheat flour

Amaranth, buckwheat flour, maize, millet, quinoa, rice

Broad bean, chickpea, kidney bean, lentil, mung bean, pea, soybean, string bean, white bean

Almond, Brazil nut, cashew nut, chestnut, chia seed, coconut, cola nut, flaxseed, hazelnut, hemp seed, macadamia nut, peanut, pine nut, pistachio, poppy seed, sesame, sunflower seed, walnut

Apple, apricot, avocado, banana, blackberry, black currant, blueberry, blue grape, cantaloupe melon, cherry, cranberry, date, fig, goji berry, gooseberry, grapefruit, honeydew melon, kiwi, lemon, light grape, lime, lychee, mandarin, mango, mulberry, nectarine, orange, papaya, peach, pear, pineapple, plum, pomegranate, raisin, raspberry, red currant, rhubarb, rose hip, strawberry, watermelon

Artichoke, asparagus, bamboo shoots, bay bolete, beetroot, broccoli, Brussel sprout, butterhead lettuce, carrot, cauliflower, celery, cep, chanterelle, chard, chicory, Chinese cabbage, cucumber, eggplant, fennel, green cabbage, Hokkaido pumpkin, iceberg lettuce, Jerusalem artichoke, kale, lamb's lettuce, leek, manioc root, mushroom, olive, onion, oyster mushroom, pepper, potato, radish, red cabbage, rocket, savoy cabbage, shallot, shiitake mushroom, snow pea, spinach, sweet potato, tomato, turnip cabbage, vine leaf, zucchini

Beta-lactoglobulin, butter, camembert, casein, cottage cheese, cow's milk, curd cheese, egg white (chicken), egg yolk (chicken), Emmental cheese, goat's cheese, goat's milk, kefir, mozzarella, processed cheese, sheep's cheese, sheep's milk, yogurt

Beef, chicken, duck, goat, goose, guinea fowl, horse, lamb, ostrich, pork, quail, rabbit, roe deer, turkey

Anchovy, carp, caviar, codfish, crab, crayfish, eel, gilthead seabream, haddock, herring, lobster, mackerel, monkfish, ocean perch, octopus, oyster, pike, salmon, sardine, sea bass, shrimp/prawn, sole, *Spirulina* spp., squid, swordfish, trout, tuna, turbot, venus clam

Anis, basil, bay leaves, black pepper, camomile, caper, cayenne pepper, chili, chives, cinnamon, cloves, coriander, cumin, curry, dill, garlic, ginger, hops, horseradish, liquorice root, marjoram, mint, mustard seeds, nutmeg, oregano, parsley, peppermint, rosemary, saffron, sage, tarragon, thyme, vanilla, white pepper

Agar-agar, aloe vera, baker's yeast, baking powder, black tea, brewer's yeast, cocoa bean, coffee, green tea, honey, locust bean gum, rapeseed, safflower oil

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*   *Some of the foods mentioned are combined in mixes.*

The myfoodprofile kit

Available myfoodprofile tests

Product	Product number	Tested foods*	Test strips per kit	Evaluation	CE marking
myfoodprofile basic 1	NP 7101-1601-1 G	54	16 (for 16 samples)		
myfoodprofile extended 1	NP 7112-1602-1 G	108	32 (for 16 samples)		
myfoodprofile extended 2	NP 7112-1602-2 G	108	32 (for 16 samples)		
myfoodprofile advanced 1	NP 7124-1604-1 G	216	64 (for 16 samples)	Semiquantitative	✓
myfoodprofile vegetarian extended 1	NP 7212-1602-1 G	108	32 (for 16 samples)		
myfoodprofile mediterranean basic 1	NP 7301-1601-1 G	54	16 (for 16 samples)		
myfoodprofile mediterranean advanced 1	NP 7304-1604-1 G	216	64 (for 16 samples)		

The number of foods actually tested is usually more extensive, as some are combined in mixes.

Learn more about the myfoodprofile products:

www.myfoodprofile.com

Regulatory status of the products must be verified for the user's individual jurisdiction. Please contact your country representative for product availability and information.