

Your local Distributor

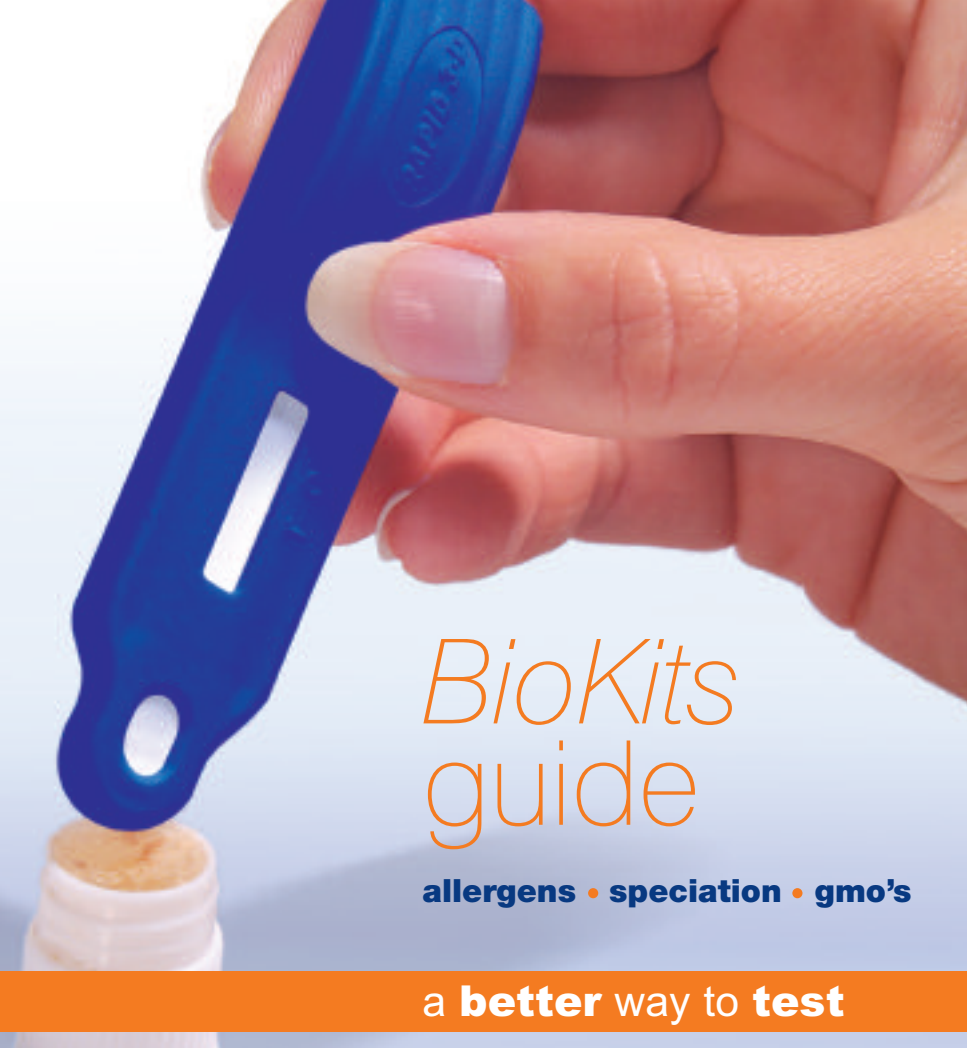
### Tepnel Research Products & Services

One Newtech Square, Deeside Industrial Park,  
Deeside, Flintshire, CH5 2NT  
Tel: +44 (0)1244 280 202  
Fax: +44 (0)1244 288 402

550 West Avenue, Stamford, CT 06902  
United States of America  
Tel: (888) 329 0255 or (203) 328 9500  
Fax: (203) 328 9599

email@tepnelbiosystems.com

[www.tepnel.com](http://www.tepnel.com)



## BioKits guide

**allergens • speciation • gmo's**

a **better** way to **test**

# about us

**Tepnel has been offering a unique combination of food testing kits and services since 1984. The use of in-house DNA and immunoassay technologies enables the Company to design, develop and manufacture an unsurpassed range of food testing products under its ISO9001:2000 accreditation, complemented by analytical services.**

Tepnel *BioSystems* Ltd. is now part of the Research Products and Services division of Tepnel Life Sciences PLC, an international scientific group employing over 200 people.

Tepnel has modern facilities in North Wales and North America. Products are supplied direct in the UK, USA and Canada as well as through an established distribution network of around 30 companies world-wide. The customer base ranges from major international food producers who need to protect their brand reputation, Government regulators monitoring labelling compliance to small food producers trying to become established in a demanding market.

Our analytical expertise is focused on management of three key areas of food testing: food allergens, species identification (animal & fish) and genetically modified foods (GMOs).

*BioKits*  
allergens  
speciation  
gmo's  
partnerships

a **better**  
way to **test**<sup>™</sup>

analytical  
expertise  
to minimise  
your risks

a **better**  
way to **test**™

## why *BioKits*?

***BioKits* products and services are chosen because they ensure reliable results for enforcement and process decisions. This is made possible by over twenty years experience in food testing combined with ISO accredited methodology for services and innovative designs for test kit products. This is why many food manufacturers routinely choose *BioKits* products and services as an integral part of their Risk Management and HACCP systems.**

Around the world, Tepnel is assisting food businesses to comply with legislation and is helping them carry out their operations safely and hygienically.

The *BioKits* consultative approach means that we can work with you to establish both the need to test and the most appropriate methods. These decisions are based around your requirements, legislation and the nature of your operations.

The nature of our Industry is continually changing, and when mistakes occur they can be costly in terms of lost business, product recalls and damage to brand reputation. *BioKits* can help to minimise these risks.

# reliability

**The *BioKits* range of testing kits is designed to detect and identify food allergens, animal and fish species, contaminants, and GMOs in food.**

Underlying these products is a combination of innovative design and robust technology proven in many clinical applications. This means *BioKits* products can be relied upon for decision-making.



## **First to market with:**

- Species identification test kits
- Food adulteration test kits
- Handheld rapid tests for food allergens

## **There are four distinct choices of kits:**

1. Swabbing kit – for environmental monitoring
2. RAPID 3-D™ – for on-site testing
3. ELISA – for laboratory analysis
4. PCR – for identification and confirmation

**and accredited contract analysis**

# BioKits gmo's speciation allergens

**BioKits products and services are a specialist range of tests, designed to detect and quantitate allergens, additives and contaminants in food and feed. Tepnel offers three distinct areas of expertise related to species identification:**

- Food allergens (almond, hazelnut, peanut, gluten, milk proteins, egg, sesame and shellfish) and adulteration (soya, pasta quality)
- Animal and fish species content in raw and cooked or canned foods, processed foods, milk, blood, feedstuffs etc.
- Genetically Modified foods (GMOs) such as Roundup Ready® soya, Bt-176 maize

There is a choice of test kit formats or service levels for each of these applications to suit your needs.

	SWAB	RAPID 3-D	ELISA	PCR	Service
GMO screen				•	•
GMO soya				•	•
GMO maize				•	•
GMO RR soya				•	•
GMO maize ID				•	•
Beef / Cow			•	•	•
Pork / Pig			•	•	•
Lamb / Sheep			•	•	•
Poultry			•	•	•
Chicken				•	•
Turkey				•	•
Horse				•	•
Other species				•	•
Cod				•	•
Hake				•	•
Haddock				•	•
Pollock				•	•
Whiting				•	•
Trout				•	•
Salmon				•	•
BLG / Whey	•		•		•
Almond	•	•	•		•
Casein / Milk	•	•	•	•	•
Egg	•		•		•
Gluten	•	•	•		•
Hazelnut	•	•	•		•
Peanut	•	•	•	•	•
Sesame	•		•		•
Shellfish	•	•	•		•
Soya			•	•	•
Pasta			•		•

# gmo's

**Tepnel is one of few laboratories in the world able to offer a wide range of ISO17025 accredited contract analytical services for both qualitative and quantitative GMO analysis. It also offers the *BioKits* range of GMO test kits based on propriety DNA extraction procedures and innovative PCR methods to enable the screening of raw and processed foods and feeding stuffs.**

The use of genetically modified crops continues to grow, and so have the requirements for testing. Tepnel has developed a range of products and services to detect the growing variety of GMOs:

## **General GMO Screening Services and Products**

GMO screening is achieved by the qualitative detection of the CaMV 35S promoter, NOS terminator and BAR gene sequences common to a range of GMOs. GM Soya screening is achieved by the detection of 35S promoter and lectin gene; and GM Maize screening through the qualitative detection of 35S promoter, NOS and BAR gene.

## **Specific Qualitative Services and Products**

For the specific identification of RoundUp Ready® Soya, Bt-176 Maize, StarLink™ Maize, MON810 Maize, Bt-11 Maize and LibertyLink™ (T25) Maize

All qualitative tests have a detection limit of 0.1% GMO in an unprocessed flour matrix.

## **Quantitative Detection Services**

For the quantification of GM Soya, GM Maize, RoundUp Ready® Soya and Bt-176 Maize.



gmo's

PCR kits and contract analysis

# speciation

**BioKits products are routinely used in many countries for identification of species content. For more than 15 years our methods have become the preferred choice by enforcement, industry and private laboratories where reliable results are needed for ethnic, control and economic reasons.**

**(Cooked) Species Identification** (ELISA <1-2% limit of detection)  
Qualitative determinations in cooked/canned/processed meat products, and MBM material rendered up to a maximum of 20 min., 133°C, 3 bar, wet sterilisation. Species tests: Beef, Pork, Poultry and Sheep.

**(Raw) Species Identification** (ELISA <1% limit of detection, F.A.S.T. <2%)  
Qualitative determinations in raw meat products, milk and animal plasma processed for up to a maximum of 2 -15 min. at 70 - 100°C. Two formats: ELISA for laboratory use and F.A.S.T. for 'on-site' testing. Species available: cow, pig, sheep and poultry - horse is available in F.A.S.T.

**PCR-based Species Identification** (<0.1% limit of detection)  
Qualitative determinations of animal and fish species content in raw, cooked, processed materials including animal feeds. ISO17025 accredited services. Animal Species: Beef, Pork, Sheep, Chicken, Turkey, Horse, Goat, Rabbit. Fish species: Cod (*Gadus morhua*), Hake (*Merluccius merluccius*), Coley (*Pollachius virens*), Haddock (*Melanogrammus aeglefinus*), Pollock (*Pollachius pollachius*), Whiting (*Merlangus merlangus*), Trout (*Onchorynchus mykiss*), Salmon (*Salmo salar*).

Other species also available, please enquire.



PCR, ELISA and FAST Kits plus contract analysis

# allergens

**BioKits products and services are making significant advances with testing in this field, especially with the new 'Dip & Test' RAPID 3-D range. This is a rapidly growing area of consumer concern (affecting 6-8% of children and 2% adults). Legislation has been implemented in America, Europe, Australia/New Zealand and Japan that will require the presence of the major food allergens to be labelled when included as ingredients. Increasingly, BioKits products and services are being employed by food manufacturers and regulatory laboratories to ensure accurate labelling and to control accidental cross-contamination by these proteins, including:**

**BioKits Swabs** (with ELISA detects nanograms protein per swab)

Whether for service or for use with *BioKits* ELISA and RAPID 3-D kits to detect: almond, BLG, casein, egg, gluten, hazelnut, peanut, sesame and shellfish

**RAPID 3-D** (detect ppm of protein)

Qualitative handheld tests for use with your HACCP plans. Three lines of detection minimises the risk of false negatives when detecting: almond, casein, gluten, hazelnut, peanut, and shellfish; resulting in the most cost-effective test

**BioKits ELISA** (detect ppm of protein)

Quantitative determinations of: almond, BLG, casein, egg, gluten, hazelnut, peanut, sesame and shellfish



PCR, ELISA, RAPID 3-D and swab kits plus contract analysis

# BioKits range

ACCREDITATION	TYPE	SPECIFICATION
Company	ISO9001:2000	All operations & customer services
PCR Services	ISO17025*	Qualitative & Quantitative
ELISA Services	ISO17025*	Flexible scope: BLG, Casein, Gluten, Peanut, Egg
Products	AOAC	Peanut Assay (PTM), Gluten Assay (OM)

# food allergens

PRODUCT No.	DESCRIPTION	TEST FORMAT	PER KIT	LOD	TOTAL TIME	NOTES	SERVICE
901042J	ALLERGEN	SWAB	20	ng/mL	<5min.	Use with ELISA	o
902083N	ALMOND	ELISA	48	0.1 ppm	<2.5hrs.	LOQ 1 – 20 ppm	o
902086G	ALMOND	RAPID 3-D	10	Low ppm	<10min.	Validate LOD	
902089Z	ALMOND	RAPID 3-D	100	Low ppm	<10min.	Validate LOD	
902061Y	BLM/WHEY	ELISA	96	2ppm	<3.5hrs	LOQ 2.5 – 40ppm	■
503094H	BEEF(Cow's milk)	PCR	100	5ppm	<7hrs.	Use with 901039W	■
902062W	CASEIN	ELISA	96	1ppm	<3.5hrs	LOQ 1.6 – 25ppm	■
902075M	CASEIN	RAPID 3-D	10	Low ppm	<10min.	Validate LOD	
902079D	CASEIN	RAPID 3-D	100	Low ppm	<10min.	Validate LOD	
709374D	CELERY/CELERIAC	PCR	-	10ppm	Enquire	Development test	o
902072T	EGG	ELISA	96	0.1ppm	<2.5hrs.	LOQ 0.5 – 10ppm	■
802002Y	GLUTEN	ELISA	96	1ppm	<3.5hrs.	LOQ 3 – 50ppm	■
901031P	GLUTEN	RAPID 3-D	10	Low ppm	<10min.	Validate LOD	
901036D	GLUTEN	RAPID 3-D	100	Low ppm	<10min.	Validate LOD	
902084L	HAZELNUT	ELISA	48	0.1 ppm	<2.5hrs.	LOQ 1 – 20 ppm	o
902087E	HAZELNUT	RAPID 3-D	10	Low ppm	<10min.	Validate LOD	
902090R	HAZELNUT	RAPID 3-D	100	Low ppm	<10min.	Validate LOD	
709376Y	MUSTARD (White)	PCR	-	10ppm	Enquire	Development test	o
503115C	PEANUT	PCR	100	10ppm	<7hrs.	Use with 901039W	■
902048Q	PEANUT	ELISA	96	0.1ppm	<2.5hrs.	LOQ 1 – 20ppm	■
901041L	PEANUT	RAPID 3-D	10	Low ppm	<10min.	Validate LOD	
902077H	PEANUT	RAPID 3-D	100	Low ppm	<10min.	Validate LOD	
902070X	SESAME	ELISA	96	1ppm	<4.5hrs.	LOQ 5 –100ppm	o
902076K	SHELLFISH	ELISA	48	0.1 ppm	<2.5hrs.	LOQ 1 – 20 ppm	o
902081S	SHELLFISH	RAPID 3-D	10	Low ppm	<10min.	Validate LOD	
902091P	SHELLFISH	RAPID 3-D	100	Low ppm	<10min.	Validate LOD	
503049N	SOYA LECTIN	PCR	100	5ppm	<7hrs.	Use with 901039W	■
709366C	SOYA RESIDUE	ELISA	-	0.5ppm	Enquire	LOQ 1 – 5ppm	o
901039W	DNA EXTRACTION	BEADS	100	-	<3hrs.	>50 base pairs	

KEY: LOD = limit of detection LOQ = Limits of Quantitation o = Service offered ■ = Accredited Service

\* = Our UKAS laboratory number is 1906

# food adulteration

PRODUCT No.	DESCRIPTION	TEST FORMAT	PER KIT	LOD	TOTAL TIME	NOTES	SERVICE
902001T	SOYA PROTEIN	ELISA	96	0.35%	<5hrs.	LOQ 0.35 – 20%	o
902058M	PASTA	ELISA	96	2%	<3hrs.	LOQ 3 – 15%	o

# species identification

PRODUCT No.	DESCRIPTION	TEST FORMAT	PER KIT	LOD	TOTAL TIME	NOTES	SERVICE
503093K	PORK	PCR	100	<0.1%	<7hrs.	Use with 901040N	■
503094H	BEEF	PCR	100	<0.1%	<7hrs.	Use with 901040N	■
503095F	SHEEP	PCR	100	<0.1%	<7hrs.	Use with 901040N	■
503096D	CHICKEN	PCR	100	<0.1%	<7hrs.	Use with 901040N	■
503097B	TURKEY	PCR	100	<0.1%	<7hrs.	Use with 901040N	■
503098Y	HORSE	PCR	100	<0.1%	<7hrs.	Use with 901040N	■
503099W	GOAT	PCR	100	<0.1%	<7hrs.	Special Manufacture	■
503100R	RABBIT	PCR	100	<0.1%	<7hrs.	Special Manufacture	■
902011Q	COOKED SPECIES	ELISA	96	<1%	3.5hrs	Beef/Pork/Poultry/Sheep	o
902013L	COOKED BEEF	ELISA	48	<1%	3.5hrs		o
902012N	COOKED PORK	ELISA	48	<1%	3.5hrs.		o
902023H	COOKED POULTRY	ELISA	48	<1%	3.5hrs.		o
902022K	COOKED SHEEP	ELISA	48	<2%	3.5hrs.		o
902025D	RAW SPECIES	ELISA	96	<1%	2hrs.	Cow/Pig/Sheep/Poultry	o
502135B	RAW COW	FAST	25	<2%	<1hr.		
502136Y	RAW HORSE	FAST	25	<2%	<1hr.		
502137W	RAW PIG	FAST	25	<2%	<1hr.		
502138U	RAW SHEEP	FAST	25	<2%	<1hr.		
502139S	RAW POULTRY	FAST	25	<2%	<1hr.		
503130G	COD ( <i>Gadus morhua</i> )	PCR	100	<0.1%	<7hrs.	Use with 901040N	■
503131E	HAKE ( <i>Merluccius merluccius</i> )	PCR	100	<0.1%	<7hrs.	Use with 901040N	■
503132C	COLEY ( <i>Pollachius virens</i> )	PCR	100	<0.1%	<7hrs.	Use with 901040N	■
503133Z	HADDOCK ( <i>Melanogrammus aeglefinus</i> )	PCR	100	<0.1%	<7hrs.	Use with 901040N	■
503134X	POLLOCK ( <i>Pollachius pollachius</i> )	PCR	100	<0.1%	<7hrs.	Use with 901040N	■
503135V	WHITING ( <i>Merlangus merlangus</i> )	PCR	100	<0.1%	<7hrs.	Use with 901040N	■
503136T	TROUT ( <i>Onchorynchus mykiss</i> )	PCR	100	<0.1%	<7hrs.	Use with 901040N	■
503137R	SALMON ( <i>Salmo salar</i> )	PCR	100	<0.1%	<7hrs.	Use with 901040N	■
901040N	DNA EXTRACTION	BEADS	100	-	<3hrs.	>50 base pairs	

KEY: LOD = limit of detection LOQ = Limits of Quantitation o = Service offered ■ = Accredited Service

# gmo identification

PRODUCT No.	DESCRIPTION	TEST FORMAT	PER KIT	LOD	TOTAL TIME	NOTES	SERVICE
503039R	35S & INVERTASE	PCR	100	<0.1%	<7hrs.	Use with 901039W	■
503040H	35S & LECTIN	PCR	100	<0.1%	<7hrs.	Use with 901039W	■
503041F	NOS	PCR	100	<0.1%	<7hrs.	Use with 901039W	■
503042D	BAR	PCR	100	<0.1%	<7hrs.	Use with 901039W	■
503043B	ROUNDUP READY SOYA® & LECTIN	PCR	100	<0.1%	<7hrs.	Use with 901039W	■
503044Y	BT-176 MAIZE & INVERTASE	PCR	100	<0.1%	<7hrs.	Use with 901039W	■
503045W	STARLINK MAIZE	PCR	100	<0.1%	<7hrs.	Use with 901039W	■
503046U	MON810 MAIZE	PCR	100	<0.1%	<7hrs.	Use with 901039W	■
503104Q	BT-11 MAIZE	PCR	100	<0.1%	<7hrs.	Use with 901039W	■
503103S	T25 (LIBERTYLINK™) MAIZE	PCR	100	<0.1%	<7hrs.	Use with 901039W	■
901039W	DNA EXTRACTION	PCR	100	-	<3hrs.	>50 base pairs	
709186E	GM MAIZE	Q-PCR	-	-	Enquire	Quantitative service	■
709187C	GM SOYA	Q-PCR	-	-	Enquire	Quantitative service	■
709194F	ROUNDUP READY® SOYA	Q-PCR	-	-	Enquire	Quantitative service	■
709196B	BT-176 MAIZE	Q-PCR	-	-	Enquire	Quantitative service	■
709188Z	GA21 MAIZE	-	-	-	Enquire	Qualitative service	■
709344N	NK603 MAIZE	-	-	-	Enquire	Qualitative service	■

KEY: LOD = limit of detection LOQ = Limits of Quantitation ○ = Service offered ■ = Accredited Service

# partnerships

Tepnel advocates a consultative approach to solving customers' analytical requirements.

Tepnel has key relationships with a number of Centres of Excellence including:

- the Institute of Food Research, UK
- the Food Standards Agency, UK
- the EC Joint Research Centre, Belgium
- CSIRO, Australia

Tepnel is also participating in the largest EU project on food allergens and is an active member of the FDA/AOAC Presidential Task Force on Food Allergens. This means we are able to directly contribute to and communicate advances in the field of food analysis through our innovative products and services.

# distributors

Tepnel has had a global network of Distributors for nearly 20 years. They all have an established presence in the local market coupled with proven capabilities of providing and supporting scientific products. Together with our Distributors we have invested in providing responsive customer service and trained representatives knowledgeable about *BioKits* products. We are represented directly or indirectly in: North America, Latin America, Europe, Middle East, Africa, China, Far East and South Pacific.

# your choice

*BioKits* products and services have earned a global reputation for reliability over a period of more than twenty years. Depending on your requirements a package of assistance is available, including:

- Test kits and equipment
- Contract analysis
- Training and audits
- Co-developments

The distinctive benefit of Tepnel's capabilities is its capacity to offer an integrated package, optimised to suit your deadlines, budget and resources.