# Schedule of Accreditation

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| Organisation Name | Public Analyst's Laboratory Dublin |
| Trading As | Health Service Executive - Public Analyst's Laboratory, Dublin |
| INAB Reg No | 99T |
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| Website | http://www.publicanalystdublin.ie |
| Accreditation Standard | EN ISO/IEC 17025 T |
| Standard Version | 2017 |
| Date of award of accreditation | 23/09/1998 |
| Scope Classification | Biological and veterinary testing |
| Scope Classification | Chemical testing |

Services available to the public[1]

[1] Refer to document on interpreting INAB Scopes of Accreditation

| Sites from which accredited services are delivered | | |
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| (the detail of the accredited services delivered at each site are on the Scope of Accreditation) | | |
| | | |
| | **Name** | **Address** |
| 1 | Head Office | Sir Patrick Dun's, Lr. Grand Canal Street, Dublin, D2 |

# Scope of Accreditation

## Head Office

### Biological and Veterinary Testing

**Category: A**

| Biology/veterinary field - Tests | Test name | Technique | Matrix | Equipment | Std. reference | |
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| 801 Macroscopic examination and description | SOP PALM 0029 | Determination of water activity in food Dew point technique | Food | AQUALAB Water Activity Meter Series 4TE | ISO 18787:2017 | |
| 803 Culture of organisms in liquid or agar based culture media with visual or instrument monitoring for growth - .01 Culture of bacteria | SOP PALM 0001 **3<br>SOP PALM 0001 (S) **3 | Aerobic colony count (pour plate) at 30°C for 72 hours.<br><br>Aerobic colony count (spiral plate) at 30°C for 72 hours. | Dairy products<br>Egg and egg products<br>Meat and meat products, game and poultry<br>Fish, shellfish and molluscs<br>Fruit and vegetables<br>Prepared dishes<br>Environmental swabs - Stick swabs | | I.S. EN ISO 4833-1:2013/Amd.1:2022<br><br>I.S. EN ISO 4833-2:2013 & AC:2014 & Amd.1 2022 | |
| | SOP PALM 0003(S) **3 En umeration of presumptive Bacillus cereus using BCA | Direct plate counts | Dairy products<br>Egg and egg products<br>Meat and meat products, game and poultry<br>Fish, shellfish and molluscs<br>Cereals and bakery products | | Based on ISO 7932:2004/Amd.1:2020 & LC 2020 | |

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| | | Fruit and vegetables<br>Prepared dishes | | | |
| SOP PALM 0004 **3 | Detection of salmonella spp | Cereals and bakery products<br>Fruit and vegetables<br>Herbs and spices<br>Alcoholic beverages (other than wine) – Cream Liquers<br>Ices and desserts<br>Confectionery<br>Nuts and nut products<br>Prepared dishes<br>Dairy products<br>Eggs and egg products<br>Meat and meat products, game and poultry<br>Fish, shellfish and molluscs<br>Soups, broths and sauces<br>Environmental swabs - Stick swabs<br>Foodstuffs intended for particular nutritional uses | | I.S. EN ISO 6579:2017/Amd.1:2020 | |
| SOP PALM 0006 **3 | Enumeration of Clostridium perfringens | Dairy products<br>Egg and egg products<br>Meat and meat products, game and poultry<br>Fish, shellfish and molluscs<br>Fruit and vegetables<br>Prepared dishes<br>Soups, broths and sauces | | I.S. EN ISO 7937:2004 | |
| SOP PALM 0009 **3 | Enumeration of Enterobacteriacae | Dairy products<br>Eggs and egg products<br>Meat and meat products, game and | | ISO 21528-2:2017 | |

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| | | poultry<br>Fish, shellfish and molluscs<br>Soups broths and sauces<br>Fruits and vegetables<br>Confectionery<br>Prepared dishes<br>Alcoholic beverages (other than wine) – Cream liqueurs<br>Environmental swabs -<br>Stick swabs | | | |
| SOP PALM 0017 **3 | Detection of Listeria monocytogenes and Listeria spp | Dairy products<br>Egg and egg products<br>Meat and meat products, game and poultry<br>Fish, shellfish and molluscs<br>Cereals and bakery products<br>Fruit and vegetables<br>Prepared dishes<br>Environmental swabs - Stick and sponge swabs | | I.S. EN ISO 11290-1:2017 | |
| SOP PALM 0018(S) **3 | Enumeration of Listeria spp and L. monocytogenes | Dairy products<br>Egg and egg products<br>Meat and meat products, game and poultry<br>Fish, shellfish and molluscs<br>Fruit and vegetables<br>Prepared dishes | | I.S. EN ISO 11290-2:2017 | |
| SOP PALM 0023 **3 | Detection of Campylobacter spp | Dairy Products,<br>Egg and egg products,<br>Meat and meat products, game and poultry, | | I.S. EN ISO 10272-1:2017, Procedure A | |

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| | | Fish, shellfish and molluscs,<br>Fruit and vegetables,<br>Prepared dishes,<br>Surfaces,<br>Stick Swabs | | | |
| SOP PALM 0026 **3 | Enumeration of β-glucuronidase positive E.coli by colony count at 44°C using TBX | Egg and egg products<br>Meat and meat products, game and poultry<br>Fish, shellfish and molluscs<br>Cereals and bakery products<br>Cocoa and cocoa preparations, coffee and tea<br>Prepared dishes<br>Dairy products<br>Soups, Broths and Sauces<br>Confectionery<br>Environmental swabs - Stick Swabs, Fruit and vegetables | | ISO 16649-2:2001 | |
| SOP PALM 0028 **3 | Detection and enumeration of Vibrio parahaemolyticus (Surface – spread/spiral) | Fish, shellfish and molluscs | | Based on ISO 21872-1:2017 | |
| SOP PALM 0061 **3 | Enumeration of coagulase-positive staphylococci by RPF technique | Egg and egg products<br>Meat and meat products, game and poultry<br>Fish, shellfish and molluscs<br>Fruit and vegetables<br>Prepared dishes<br>Cereals and bakery products<br>Soups, broths and sauces | | I.S. EN ISO 6888-2:2021 | |

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| SOP PALM 0102 | Detection and enumeration of Enterococci in water by membrane filtration | Potable waters, Swimming pools and spas, Environmental waters | | Based on I.S. EN ISO 7899-2:2000 | |
| SOP PALM 0104 | Detection and enumeration of sulphite reducing clostridia and Cl. perfringens in water by membrane filtration. | Potable waters Swimming pools and spas Environmental waters | | Based on Microbiology of Drinking Water 2021, Part 6 | |
| SOP PALM 0106 | Detection and enumeration of Ps. aeruginosa in water by membrane filtration | Swimming pools and spas Potable Waters | | Based on Microbiology of Drinking Water 2015, Part 8 | |
| SOP PALM 0107 | Enumeration of heterotrophic bacteria colony count technique at 22˚C or 37˚C | Potable waters, Swimming pools and spas | | Based on I.S. EN ISO 6222:1999 | |
| SOP PALM 0108 | Enumeration of coliform and E. coli using Colilert Quanti-Tray MPN. | Environmental waters Potable waters Swimming pools and spas | | ISO 9308-2:2012 | |
| SOP PALM 0111 | Coliforms and E.coli by membrane filtration | Potable waters | ISO 9308-1 (2016) | ISO 9308-1:2014 /AMD.1:2016 | |
| SOP PALM 0112 | Enumeration of Legionella in water | Potable waters | Membrane filtration manifold and associated equipment | ISO 11731:2017, Membrane filtration on plate: procedures 5 and 7. Filtration with washing procedures 8 and 9 | |
| SOP PALM 3000 Enumeration of Aerobic Mesophilic Bacteria in cosmetics | Standard plate counts | Cosmetics | | ISO 21149:2017/Amd 1:2022 | |
| SOP PALM 3001 Detection of Pseudomonas aeruginosa in cosmetics | Detection of Ps. Aeruginosa | Cosmetics | | ISO 22717:2015/Amd 1: 2022 | |

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| | SOP PALM 3002 Detection of Staphylococcus aureus in cosmetics | Detection of Staphylococcus aureus | Cosmetics | | ISO 22718:2015/Amd 1:2022 | |
| | SOP PALM 3006 Detection of Escherichia coli in cosmetics | Detection of Escherichia coli by standard plating methods | Cosmetics | | ISO 21150:2015/Amd 1:2022 | |
| | SOP PALM 4001 **3 | Elfa Detection of Salmonella spp using VIDAS SLM Kit. | Dairy Products, Egg and egg products, Meat and meat products, game and poultry, Fish, shellfish and molluscs, Soups, broths and sauces, Cereals and bakery products, Fruit and vegetables, Herbs and spices, Alcoholic beverages other than wine (Cream liqueur), Ices and desserts, Confectionary, Nuts and nut products, Prepared dishes, Environmental swabs - Stick swabs, Foodstuffs intended for particular nutritional uses | | AFNOR VIDAS Salmonella (VIDAS SLM) method BIO 12/1-04/94 Screening method. Cultural and confirmation aspects - I.S. EN ISO6579:2017/Amd.1:2020 | |
| 803 Culture of organisms in liquid or agar based culture media with visual or instrument monitoring for growth - .02 Culture of fungi | SOP PALM 0025 **3 | Enumeration of yeasts and moulds in products with water activity greater than 0.95 | Cereals and bakery products, Fruit and vegetables, Non-alcoholic beverages, Soups, broths and sauces, Alcoholic beverages (other than wine) | | ISO 21527-1:2008 | |
| | SOP PALM 0080 **3 | Enumeration of yeasts | Cereals and bakery | | ISO 21527-2:2008 | |

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| | | and<br>moulds in products with water<br>activity less than or equal to<br>0.95 | products | | | |
| | SOP PALM 3003 Enumeration of Yeast and Mould in cosmetics | Standard plate counts | Cosmetics | | ISO 16212:2017/Amd 1:2022 | |
| | SOP PALM<br>3007 Detection of Candida albicans in cosmetic products | Detection of Candida albicans in cosmetic products | Cosmetics | Standard Microbiological equipment | ISO 18416:2015/Amd 1:2022 | |
| 803 Culture of organisms in liquid or agar based culture media with visual or instrument monitoring for growth - .04 Culture of yeasts | SOP PALM 0025 **3 | Enumeration of yeasts and moulds in products with water activity greater than 0.95 by standard plating | Cereals and bakery products,<br>Fruit and vegetables,<br>Non alcoholic beverages,<br>Soups, broths and sauces,<br>Alcoholic beverages (other than wine) | | ISO 21527-1:2008 | |
| | SOP PALM 0080 **3 | Enumeration of yeasts and moulds in products with water activity less than or equal to 0.95 | Cereals and bakery products | | ISO 21527-2:2008 | |
| | SOP PALM 3003 Enumeration of Yeast and Mould in cosmetics | Standard plate counts | Cosmetic products | | ISO 16212:2017/Amd 1:2022 | |

## Chemical Testing

**Category: A**

| Chemistry Field - Tests | Test name | Analyte | Range of measurement | Matrix | Equipment/technique | Standard reference/SOP |
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| 710 Materials testing - .03 Chemical analysis | SOP PALC 0117 - The determination of the specific migration of formaldehyde from kitchenware by UV/Vis spectrophotometry **1 2 3 4 | Residual formaldehyde | 3.0 to 30.0 mg/kg Food simulant (analysed in 3% acetic acid solution, results obtained must be corrected for the surface area of the individual article under analysis) | Melamine kitchenware | UV/Vis spectrophotometry | Based on the determination of formaldehyde in food simulants I.S. CEN/TS 13130-23:2005 |
| | SOP PALC 0039 - The determination of Epoxidised Soybean Oil in Food, Food simulant and PVC Gasket **1 2 3 4 | Epoxidised soybean oil (ESBO) | 3.0 % to 50 % w/w | PVC Gasket | GC-MS | In-house procedure based on Castle, L., Sharman, M., and Gilbert, J. A.O.A.C. No.6., 71, 1183-1186 |
| | SOP PALC 0089 | Bisphenol A **1 | 1-1000 µg/kg (analysed in 50% aqueous ethanol food simulant, results obtained must be corrected for the surface area of the individual article under analysis) | Food Contact Materials | Analysed in 50% aqueous ethanol food simulant, results obtained must be corrected for the surface area of the individual article under analysis | Based on Bisphenol A - Draft Validation Report, October 2009, EURL, Ispra |
| | SOP PALC 0089 - The determination of bisphenol A in food contact materials and foodstuffs by HPLC and fluorescence detection **1 2 3 4 | Bisphenol A | 1 to 1000 µg/kg (analysed in 50% aqueous ethanol food simulant, results obtained must be corrected for the surface area of the individual article under analysis) | Food Contact Materials | HPLC and Fluorescence Detection | In house test procedure |

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| SOP PALC 0090 - The determination of plasticisers in PVC, Oil Food Simulant and Food **1 2 3 4 | Plasticisers: diisooctyl phthalate (DIOP), diisononyl cyclohexanedicarboxylate (DINCH), diisononyl phthalate (DINP), diisodecyl phthalate (DIDP) | 0.02 to 35 % w/w | PVC | GC-MS | In-house test method |
| | Plasticisers: dimethyl adipate (DMA), diethyl adipate (DEA), dimethyl phthalate (DMP), diethyl phthalate (DEP), dimethyl sebacate (DMS), triethylcitrate (TEC), diethyl sebacate (DES), diisobutyl phthalate (DIBP), dibutyl phthalate (DBP), dihexyl phthalate (DHP), benzyl butyl phthalate (BBP), dicyclohexyl phthalate (DCHP), diethylhexyl phthalate (DEHP), dioctyl terephthalate (DOTP/DETP), diallyl phthalate (DAP), diethyl sebacate (DES), dibutyl sebacate (DBS), tributylacetylcitrate (TBAC), diethylhexyl adipate (DEHA) di-n-octyl phthalate (DNOP) and diethylhexyl sebacate (DEHS) | 0.005 to 35 % w/w | PVC | GC-MS | In-house test procedure |
| SOP PALC 0092 | Primary aromatic amines: Aniline (ANL) **1,2 | 4,4'–Methylenedianiline (4,4'-MDA) 0.00025-10.0 mg/kg (analysed as 3% acetic acid solution, results obtained must be corrected for the surface area of the individual utensil under analysis) *Total PAAs: 0-20.05 | Black nylon kitchen utensils | By UPLC-MS/MS: | Based on Mortensen, S.K.; Trier, X.T; Foverskov, A; Petersen, J.H: Specific determination of 20 primary aromatic amines in aqueous food simulants by liquid chromatography – electrospray |

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| | | mg/kg<br>(*Note: based on lower bound calculation) | | | ionizationtandem mass spectrometry, J. Chromatogr. A 1091, (2005) 40-50 |
| SOP PALC 0092 - The determination of the specific migration of primary aromatic amines (PAAs) from nylon kitchen utensils **1 2 3 4 | Primary Aromatic Amines (PAAs), Aniline (ANL), 4,4'-Methylenedianiline (4,4'-MDA) | 0.00025 to 10.0000 mg/kg (analysed as 3% acetic acid solution, results obtained must be corrected for the surface area of the individual article under analysis)<br>*Total PAAs: 0.000 to 20.000 mg/kg<br>(*Note: based on lower bound calculation) | Polyamide Kitchen Utensils | UPLC-MS/MS | In-house test procedure |
| SOP PALC 0094 - The determination of the specific migration of melamine from kitchenware by UPLC-electrospray ionisation-tandem MS/MS | Residual melamine | 0.25-250.0 mg/kg food simulant (analysed as 3% acetic acid solution, results obtained must be corrected for the surface area of the individual utensil under analysis) | Melamine kitchenware | UPLC-MS/MS | Based on I.S.EN13130-1:2004, Waters Application Note 7200022823EN, Oct 2008 |
| SOP PALC 0094 - The determination of the specific migration of melamine from kitchenware by UPLC-electrospray ionisation-tandem MS/MS **1 2 3 4 | | 0.25 to 250 mg/kg food simulant (analysed as 3% acetic acid solution, results obtained must be corrected for the surface area of the individual article under analysis) | Melamine kitchenware | UPLC-MS/MS | Based on I.S.EN13130-1:2004 |
| SOP PALC 0112 - The determination of the migration of cadmium and lead from ceramic and glass articles by Inductively Coupled Plasma Mass Spectroscopy **1 2 3 4 | Lead and Cadmium | Ceramics: 0.2 to 40.0 mg/l (lead) 0.02 to 2.0 mg/l (Cadmium)(Analysed as 4% Acetic Acid solution, results obtained must be corrected for surface area of the individual non fill article under analysis)Glass articles: 0.003 to 0.20 mg/litre - | Ceramics Glass articles | By ICP-MS | In-house test procedure based on Commission Directive 2005/31/EC and 84/500/EEC |

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| | | Lead and Cadmium(analysed as 4% Acetic Acid, results obtained must be corrected for surface area of the individual non fill article) under analysis | | | |
| SOP PALC 0123 The determination of the specific migration of chromium and nickel from metal kitchen utensils by ICPMS **1 2 3 4 | Chromium Nickel | Chromium 20 - 2000 µg/l Nickel 10 - 1000 ug/l (Analysed as 4% Acetic acid, results obtained must be corrected for the surface area of the individual article under analysis) | Metal kitchen utensils | ICP-MS | In-house test procedure |
| SOP PALC 0171 - The determination of the specific migration of metals from plastic kitchen ware by ICPMS **1 2 3 4 | Aluminium Nickel | Aluminium: 0.025 to 1.50 mg/kg Nickel: 0.003 to 0.15 mg/kg (Analysed as 3% Acetic acid, results obtained must be corrected for the surface area of the individual article under analysis) | Plastic kitchen ware | ICP-MS | In-house test method |
| | Cobalt | 0.003 to 0.15 mg/kg (Analysed as 3% Acetic acid, results obtained must be corrected for the surface area of the individual article under analysis) | Plastic kitchen ware | ICP-MS | In-house test method |
| | Copper | 0.100 to 6.0 mg/kg (Analysed as 3% Acetic acid, results obtained must be corrected for the surface area of the individual article under analysis) | Plastic kitchen ware | ICP-MS | In-house test method |
| | Iron | 1.000 to 60.0 mg/kg (Analysed as 3% Acetic acid, results obtained must be corrected for | Plastic kitchen ware | ICP-MS | In-house test method |

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| | | | the surface area of the individual article under analysis) | | | |
| | | Lithium | 0.025 to 1.50 mg/kg (Analysed as 3% Acetic acid, results obtained must be corrected for the surface area of the individual article under analysis) | Plastic kitchen ware | ICP-MS | In-house test method |
| | | Manganese | 0.025 to 1.50 mg/kg (Analysed as 3% Acetic acid, results obtained must be corrected for the surface area of the individual article under analysis) | Plastic kitchen ware | ICP-MS | In-house test method |
| | | Zinc | 0.100 to 6.0 mg/kg (Analysed as 3% Acetic acid, results obtained must be corrected for the surface area of the individual article under analysis) | Plastic kitchen ware | ICP-MS | In-house test method |
| | SOP PALCW 0024 The determination of the strength of hexafluorosilicic acid **1 2 3 4 | Hexafluorosilicic Acid (HFSA) | HFSA in Aqueous solution (10 - 35%) | Misc Materials and products | By titrimetry | Based on I.S. EN 12175:2013 |
| | The determination of the specific migration of metals from plastic kitchen ware by ICPMS **1 2 3 4 | Barium | 0.025 - 1.50 mg/kg (Analysed as 3% Acetic acid, results obtained must be corrected for the surface area of the individual article under analysis) | Plastic kitchen ware | ICP-MS | In-house test method |
| 751 Food testing - .01 Migratory substances | SOP PALC 0039 - The determination of Epoxidised Soybean Oil in Food, Food simulant and PVC Gasket **1 2 3 4 | Epoxidised soybean oil (ESBO) | 3 to 1000mg/kg | Jarred foods including infant foods | GC-MS | In-house test procedure based on Castle, L., Sharman, M., and Gilbert, J. A.O.A.C. No.6., 71, 1183-1186 |
| | | | 30 to 12000 mg/kg | Food Simulant | GC-MS | In-house test procedure |

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| | | | | | based on Castle, L., Sharman, M., and Gilbert, J. A.O.A.C. No.6., 71, 1183-1186 |
| SOP PALC 0116 - The determination of photo initiators in packaging and food by GC-MS<br>**1 2 3 4 | Photoinitiators<br>Benzophenone (BP)<br>Isopropylthioxanthone (ITX) | Food: 0.06 to 100.0 mg/kg Packaging: 0.2 to 450 mg/dm2 | Food and Food Packaging | GC-MS | In-house test procedure based on Thermo scientific application note 'Analysis of benzophenone and 4-hydroxybenzophenone in breakfast cereal, 2012' |
| SOP PALC 0119 - The determination of certain perfluoroalkylated substances in fish by LC-MS/MS<br>**1 2 3 4 | Perflourobutanoic acid (PFBA)<br>Perflouropentanoic acid (PFPeA)<br>Perflourobutane sulfonic acid (PFBS)<br>Perfluorohexanoic acid (PFHxA)<br>Perflourohexane sulfonic acid (PFHxS)<br>Perflouroheptanoic acid (PFHpA)<br>Perflourooctanoic acid (PFOA)<br>Perflourooctane sulfonic acid (PFOS)<br>Perflourononanoic acid (PFNA)<br>Perflourodec anoic acid (PFDeA)<br>Perflouroundecanoic acid (PFUnA)<br>Perflourodecane sulfonic acid (PFDS)<br>Perflourododecanoic acid (PFDoA)<br>Perfluorotetradecanoic acid (PFTrA) | 1 to 100 µg/kg for each analyte, *Sum of PFOS, PFOA, PFNA, PFHxS 0 to 400 µg/kg (*Note: based on lower bound calculation) | Fish | UPLC-MS/MS | In-house test procedure |
| SOP PALC 0181 - The determination of plasticisers in food by LC-MS/MS<br>*1 2 3 4 | Diethyl adipate (DEA)<br>Dimethyl sebacate (DMS)<br>Diethyl sebacate (DES)<br>Dibutyl sebacate (DBS)<br>Dimethyl phthalate (DMP) | 6.0 to 300 mg/kg<br>6.0 to 300 mg/kg<br>6.0 to 300 mg/kg<br>6.0 to 300 mg/kg<br>6.0 to 300 mg/kg | Food | LC-MS/MS | In-house test procedure |

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| | | Diethyl phthalate (DEP)<br>Diallyl phthalate (DAP)<br>Diisobutyl phthalate (DiBP)<br>Dibutyl phthalate (DBP)<br>Benzyl butyl phthalate (BBP)<br>Dicyclohexyl phthalate (DCHP)<br>Diisononyl phthalate (DINP)<br>Diisodecyl phthalate (DIDP)<br>Triethyl citrate (TEC)<br>Tributylacetyl citrate (TBAC)<br>Diisononyl cyclohexanedicarboxylate (DINCH) | 6.0 to 300 mg/kg<br>6.0 to 300 mg/kg<br>6.0 to 300 mg/kg<br>0.3 to 12 mg/kg<br>3.0 to 160 mg/kg<br>6.0 to 300 mg/kg<br>6.0 to 300 mg/kg<br>6.0 to 300 mg/kg<br>6.0 to 300 mg/kg<br>6.0 to 300 mg/kg<br>6.0 to 300 mg/kg | | | |
| 751 Food testing - .03 Compositional analysis | SOP PALC 0001 - The determination of percentage alcohol by volume in drinks **1 2 3 4 | Alcohol by volume in drinks | 2 - 50% v/v | Wine<br>Alcoholic beverages (other than wine) | Distillation and pycnometry | Based on Commission Regulation (EC) No. 2870/2000 of 19/12/2000, as amended, laying down Community reference methods for analysis of spirit drinks. |
| | SOP PALC 0001 -The determination of percentage alcohol by volume in drinks **1 2 3 4 | | 2.5 - 70% v/v | Wine<br>Alcoholic beverages (other than wine) | Distillation and electronic densimetry | Based on Commission Regulation (EC) No. 2870/2000 of 19/12/2000, as amended, laying down Community reference methods for analysis of spirit drinks. |
| | SOP PALC 0005 | Fructose | Fructose 0.1-20.0% w/v | Non-alcoholic beverages (drinks and juices) | HPLC-RI | SOP PALC 0005 |
| | | Glucose | Glucose 0.1-20.0% w/v | Non-alcoholic beverages (drinks and juices) | HPLC-RI | SOP PALC 0005 |

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| | Sucrose | Sucrose 0.1-20.0% w/v | Non-alcoholic beverages (drinks and juices) | HPLC-RI | SOP PALC 0005 |
| SOP PALC 0005 - The determination of fructose, glucose and sucrose in selected food and drink samples by HPLC (RI detection) **1 2 3 4 | Fructose, glucose, sucrose | Fructose: 0.1-20.0% w/v<br>Glucose: 0.1-20.0% w/v<br>Sucrose: 0.1-20.0% w/v<br>*Total Sugars 0-60.0% w/v<br>(*Note: based on lower bound calculation) | Non-alcoholic beverages (drinks and juices) | HPLC with Refractive Index detection | In-house test procedure |
| SOP PALC 0005 - The determination of fructose, glucose and sucrose in selected food and drink samples by HPLC (RI detection) **1 2 3 4 | Fructose, glucose and sucrose | Fructose: 5.0-50.0% w/w<br>Glucose: 5.0-50.0% w/w<br>Sucrose: 5.0-50.0% w/w<br>*Total Sugars 0-80.0% w/w<br>(*Note: based on lower bound calculation) | Honey | HPLC with Refractive Index detection | In-house test procedure |
| SOP PALC 0008 - The determination of benzoic acid and sorbic acid in non-alcoholic beverages by high performance liquid chromatography **1 2 3 4 | Benzoic acid and sorbic acid | Benzoic acid 10 - 500 mg/l Sorbic acid 10 - 500 mg/l | Non-alcoholic beverages | HPLC | In-house test procedure |
| SOP PALC 0009 - The determination of benzoic acid and sorbic acid in foods by steam distillation and high performance liquid chromatography **1 2 3 4 | | Benzoic acid 50 - 3000 mg/kg Sorbic acid 50 - 3000 mg/kg | Dairy products<br>Fats and Oils<br>Soups broths and sauces<br>Cereals & bakery products<br>Fruit and vegetables<br>Confectionery<br>Hummus and similar products | Steam distillation and HPLC | Based on VEMS Method,<br>Code: F/0290, June, 1994 |

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| SOP PALC 0011 - The determination of sulphur dioxide in food and beverages by distillation and titrimetry **1 2 3 4 | Sulphur dioxide | Meat products 10 - 1000 mg/kg Dried fruit 10 - 2000mg/kg Wine 10 - 160 mg/l Raw potatoes 10 - 1000 mg/kg Raw crustaceans 10 - 300 mg/kg Cider 10 - 200mg/l Cordials 10 - 250 mg/l Parsnips 10 - 3000 mg/kg Beer 10 - 50 mg/l Mustard 10 - 52 mg/kg Olives 10 - 100 mg/kg Additive premixes 10 - 25000 mg/kg Jam/Dessert Syrup/ fruit filling for pastry: 10 - 400 mg/kg | Meat and meat products, game and poultry Fish, Shellfish and molluscs Fruit and vegetables Non-alcoholic beverages Wine Alcoholic beverages (other than wine) Mustard Olives Additive premixes Jam/Dessert Syrup/ fruit filling for pastry | Distillation and titrimetry | In-house test procedure |
| SOP PALC 0015 - The determination of nitrate in vegetables by anion exchange high performance liquid chromatography **1 2 3 4 | Nitrate | 50 – 7500 mg/kg | Fruit and vegetables | Anion exchange HPLC | In-house test procedure |
| SOP PALC 0016 - The determination of aspartame, acesulfame-K and saccharin in non-alcoholic beverages by high performance liquid chromatography **1 2 3 4 | Aspartame, acesulfame-K and saccharin | Aspartame 40 – 800 mg/l Acesulfame-K 20 – 400 mg/l Saccharin 10 – 200 mg/l | Non-alcoholic beverages | UPLC | In-house test procedure |
| SOP PALC 0017 - The determination of biogenic amines in fish and fish products by HPLC and fluorescence | Biogenic Amines (Tyramine, putrescine, cadaverine, histamine, agmatine, phenyethylamine, spermidine and | Tyramine: 10 to 1000 mg/kg (1) 10 to 4000 mg/kg (2) Putrescine: 10 to 1000 mg/kg (1) 10 to 4000 mg/kg (2) Cadaverine: 10 to 1000 | 1. Fish, shellfish and fish products inc molluscs 2. Soups (fish), broths and | HPLC and fluorescence detection | In-house test procedure |

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| detection **1 2 3 4 | spermine) | mg/kg (1) 10 to 4000 mg/kg (2) Histamine:10 to 1000 mg/kg (1) 10 to 4000 mg/kg (2) Agmatine: 10 to 1000 mg/kg (1) 10 to 4000 mg/kg (2) Phenyethylamine: 10 to 1000 mg/kg (1) 10 to 4000 mg/kg (2) Spermidine: 10 to 1000 mg/kg (1) 10 to 4000 mg/kg (2) Spermine:10 to 1000 mg/kg (1) 10 to 4000 mg/kg (2) | sauces | | |
| SOP PALC 0025 - The determination of caffeine in foodstuffs by HPLC and UV detection **1 2 3 4 | Caffeine | Instant Coffee 0.1 - 5 g/kg Liquid Samples 20 - 700 mg/l Solid and liquid food supplements: Solid tablet 25,000 - 500,000mg/kg Powder 3,000 - 20,000 mg/kg Gel/liquid 10 - 6,000 mg/kg Capsule 10,000 - 500,000 mg/kg | Non-alcoholic beverages Cocoa and Cocoa preparations, coffee, tea. Food Supplements | HPLC and UV detection | In-house test procedure |
| SOP PALC 0026 - The determination of sucralose by HPLC and RI detection **1 2 3 4 | Sucralose | Alcoholic and non-alcoholic beverages 5 to 300 mg/l Yoghurts 40 to 800 mg/kg Jams and dessert jellies 40 to 800 mg/kg Sauces 40 to 800 mg/kg Confectionery: 200 mg/kg to 2,000 mg/kg Syrups: 40 mg/kg to 2,100 mg/kg Popcorn: 100 to 400 mg/kg Fine bakery wares: 60 to 400 mg/kg Meat products: 30 to 150 mg/kg | Dairy products Non-alcoholic beverages Alcoholic beverages (other than wine) Ices and desserts Sauces, jams and desserts Confectionery Syrups Popcorn Fine bakery wares, Meat products | HPLC and refractive index detection | In-house test procedure |
| SOP PALC 0028 - The determination of nitrite and nitrate | Nitrite and nitrate (expressed as sodium nitrite and | Meat and meat products, game and poultry: 10 - 1,000 | Meat and meat products, game and | Anion exchange HPLC | In-house test procedure |

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| (expressed as sodium nitrite and sodium nitrate) in meat and meat products and curing brines by anion-exchange high performance liquid chromatography **1 2 3 4 | sodium nitrate for all matrices other than processed cereal-based foods and baby foods for infants and young children) | mg/kg Brines: 100 - 2,500 mg/kg, Processed cereal-based foods and baby foods for infants and young children: 20 - 300 mg/kg, cheese: 10 - 400 mg/kg, cheese milks 5 - 100 mg/kg, tuna 5 - 50 mg/kg | poultry Brines, Processed cereal-based foods and baby foods for infants and young children, cheese, cheese milks, tuna | | |
| SOP PALC 0054 - The determination of aspartame, acesulfame-K and saccharin in selected foodstuffs by ultra performance liquid chromatography **1 2 3 4 | Aspartame, acesulfame-K and saccharin | Dairy products, Soups, broths and sauces, Ices, desserts and Confectionery: Aspartame 40 to 1000 mg/kg Acesulfame-K 10 to 1000 mg/kg Saccharin 10 to 200 mg/kg Chewing Gum: Aspartame: 500 to 10,000 mg/kg Acesulfame K: 250 to 5,000 mg/kg Saccharin: 120 to 2,500 mg/kg Chocolate powder type products: Aspartame: 40 to 800 mg/kg Acesulfame K: 20 to 400 mg/kg Saccharin: 10 - 200 mg/kg Fine Bakery Wares Aspartame: 80 to 400 mg/kg Acesulfame K: 40 to 400 mg/kg Saccharin: 20 to 200 mg/kg Meat Products: Aspartame: 20 to 100 mg/kg Acesulfame K: 10 to 50 mg/kg Saccharin: 5 to 25 mg/kg | Dairy products Soups, broths and sauces Ices and desserts Confectionery Chewing gum Chocolate powder type products Fine Bakery Wares, Meat Products | UPLC and UV Detection | In-house test procedure |
| SOP PALC 0057 - The determination of the 5-hydroxymethylfurfural (HMF) content of | 5-hydroxymethylfurfural (HMF) | 10 to 2166 mg/kg | Honey | HPLC with UV detection | In-house test procedure |

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| honey by HPLC with UV detection **1 2 3 4 | | | | | |
| SOP PALC 0086 - The determination of the water content of honey by refractive index using a hand-held refractometer **1 2 3 4 | Moisture | 10.0 to 30.0% | Honey | Refractometer | In-house test procedure |
| SOP PALC 0091 - The determination of melamine in foodstuffs **1 2 3 4 | Melamine | Soy products: 1.5 to 5.0 mg/kg<br>Milk powder: 0.025 to 15.0 mg/kg | Soy products<br>Milk powder | By UPLC-MS/MS | In-house test procedure |
| SOP PALC 0113 - The determination of the diastase activity of honey with Phadebas® by UV/Vis spectrophotometry **1 2 3 4 | Diastase number | 2.5 to 30.0 Diastase number | Honey | Phadebas with UV/Vis Spectrophotometry | In-house test procedure |
| SOP PALC 0121 - The Determination of Coumarin in Foodstuffs by Gradient High Performance Liquid Chromatography with UV Detection **1 2 3 4 | Coumarin | Bakery products: 1 to 100 mg/kg Breakfast cereals: 2 to 50 mg/kg Food Supplements (Liquid): 2.5 to 50 mg/kg Food Supplements (Solid): 5 to 15,000 mg/kg Confectionery: 10 to 50 mg/kg | Cereals and bakery products<br>Food supplements (liquid)<br>Food supplements (solid)<br>Confectionery | HPLC with UV detection | In-house test procedure |
| SOP PALC 0128 - The Determination of Six Selected Antioxidants in Chewing Gum by Gradient High PerformanceLiquid Chromatography **1 2 3 4 | 6 Antioxidants<br>Propyl gallate<br>Octyl gallate<br>Dodecyl gallate<br>Tertiary-butylhydroquinone (TBHQ)<br>Butylated hydroxyanisole (BHA)<br>Butylated hydroxytoluene (BHT | Chewing Gum (20 to 800 mg/kg) Nut Products (4 to 80 mg/kg) Cereals (Range (4 to 200 mg/kg) Oil food supplements (20 to 800 mg/kg) | Chewing gum<br>Nut Products<br>Cereals<br>Oil food supplements | Gradient high performance liquid chromatography with UV detection | In-house test procedure |
| SOP PALC 0134 - | Citrinin | 25 to 4,000 µg/kg | Food | UPLC-MS/MS | In-house test procedure |

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| The determination of citrinin (CIT) in red yeast rice supplements by ultra performance liquid chromatography (UPLC) and tandem mass spectrometry (MS/MS)<br>**1 2 3 4 | | | supplements based on rice fermented with red yeast Monascus purpureus | | |
| SOP PALC 0135 - The Determination of Steviol Glycosides (Rebaudioside A & Stevioside) in foodstuffs by gradient high performanceliquid chromatography with UV detection<br><br>**1 2 3 4 | Steviol Glycosides (Rebaudioside A and Stevioside) | Rebaudioside A: 10 to 400 mg/l (3.3 to 132 mg/l steviol equivalents)<br>Stevioside: 10 to 400 mg/l (4 to 160 mg/l steviol equivalents) | Non-alcoholic beverages<br>See SOP PALC 0149 for solid food analysis | By HPLC | In-house test procedure |
| SOP PALC 0137 - The Determination of Quassin in Non-Alcoholic Beverages by High Performance Liquid Chromatography<br>**1 2 3 4 | Quassin | 0.05 to 1.0 mg/kg<br>0.15 to 2.5 mg/kg | Non-alcoholic beverages<br>Alcoholic beverages<br>See SOP PALC 0153 for solid food analysis | By HPLC | In-house test procedure |
| SOP PALC 0138 - The Determination of Taurine in Infant Formula and Follow-On Formula by High Performance Liquid Chromatography with UV Detection<br>**1 2 3 4 | Taurine | 5 to 100 mg/L | Infant formula and Follow on formula | By HPLC with UV detection | In-house test procedure |
| SOP PALC 0139 - The determination of tropane alkaloids in cereal and cereal products by UPLC-MS/MS **1 2 3 4 | Tropane alkaloids (TAs) (Atropine and Scopolamine) | Atropine: 0.1 to 250 µg/kg<br>Scopolamine: 0.1 to 25 µg/kg | Cereal based baby food | UPLC-MS/MS | In-house test procedure |

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| | SOP PALC 0143 - The determination of 1,3-Dihydroxyacetone (DHA), Methylglyoxal (MGO) and Hydroxymethylfurfural (HMF) in honey by derivatisation and Ultra High Performance Liquid Chromatography (UPLC) with UV detection **1 2 3 4 | 1,3-Dihydroxyacetone (DHA), Methylglyoxal (MGO), Hydroxymethylfurfural (HMF) | Hydroxymethylfurfural (HMF) 3 to 200 mg/kg Methylglyoxal (MGO) 20 to 640 mg/kg 1,3-Dihydroxyacetone (DHA) 50 to 3,200 mg/kg | Honey | UPLC-UV | In-house test procedure |
| | SOP PALC 0149 - The determination of Steviol Glycosides (Rebaudioside A & Stevioside) in foodstuffs by gradient high performance liquid chromatography with UV detection **1 2 3 4 | Steviol Glycosides (Rebaudioside A and Stevioside) | Chocolate: Rebaudioside A: 60 to 1,500 mg/kg (20 - 500 mg/kg steviolequivalents) Stevioside: 60 to 1,100 mg/kg (24 to 440 mg/kg steviol equivalents) Other Confectionery: Rebaudioside A: 80 to 2,000 mg/kg (26 to 660 mg/kg steviol equivalents) Stevioside: 80 to 2,000 mg/kg (30 to 800 mg/kg steviol equivalents) Sauces and Canned Vegetables in sauce: Rebaudioside A: 37 to 750 mg/kg (12 to 250 mg/kg expressed as steviol equivalents)Stevioside: 40 to 600 mg/kg (16 to 240 mg/kg expressed as steviol equivalents) | Chocolate Other confectionery Sauces Canned vegetables in sauce See SOP PALC 0135 for non-alcoholic beverage analysis | By HPLC | In-house test procedure |
| | SOP PALC 0151 - The determination of fructose, glucose and sucrose in spirit drinks by HPLC with ECD detection **1 2 3 4 | Fructose, glucose and sucrose | Fructose: 5 to 1000 mg/l Glucose: 5 to 1000 mg/l Sucrose: 5 to 1000 mg/l *Total Sugars: 0 to 3000 mg/l (*Note: based on lower bound | Alcoholic beverages Spirits | HPLC with electrochemical detection | In-house test procedure |

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| | | calculation) | | | |
| SOP PALC 0153 - The determination of Quassin in Bakery Wares by High Performance Liquid Chromatography **1 2 3 4 | Quassin | 0.1 to 2.0 mg/kg | Bakery wares See SOP PALC 0137 for non-alcoholic beverage analysis | HPLC -UV | In-house test procedure |
| SOP PALC 0154 The determination of congeners in alcoholic beverages **1 2 3 4 | Congeners in alcoholic beverages | Ranges for the below are as follows: 10 mg/l - 750 mg/l 2.5 - 187.5 g/h L @ 100% vol Ethanal Ethyl Acetate Acetal Methanol Butan-2-ol Propan-1-ol Butan-1-ol 2-methyl propan-1-ol 2-methyl butan-1-ol 3-methyl butan-1-ol Ranges for the below are as follows: 2.1 - 1,109 g/hL @ 100% vol Higher alcohols (sum of propan-1-ol, butan-1-ol, butan-2-ol, 2-methyl propan-1-ol, 2-methylbutan-1-ol, 3-methyl butan-1-ol expressed as 2-methyl propan-1-ol). Ranges for the below are as follows: 0.9 - 85.9 g/hL @ 100% vol Aldehydes (sum of ethanal andacetal expressed as ethanal) | Alcoholic beverages - spirits | By GC | In-house test procedure |
| SOP PALC 0156 - The determination of cyclamic acid in non-alcoholic beverages by HPLC with UV detection **1 2 3 4 | Cyclamic Acid | 25 to 500 mg/l | Non-alcoholic beverages | HPLC-UV | In-house test procedure |
| SOP PALC 0165 The determination of $\Delta^9$- | Cannabinoids ($\Delta^9$-Tetrahydrocannabinol ($\Delta^9$-THC), $\Delta^8$- | $\Delta^9$-Tetrahydrocannabinol ($\Delta^9$-THC): 0.5 to 750 | Hemp oils and CBD oils | UPLC-MS/MS | In-house test procedure |

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| Tetrahydrocannabinol and its precursors in hemp-based products by UPLC-MS/MS **1 2 3 4 | Tetrahydrocannabinol ( $\Delta^8$-THC), $\Delta^9$-Tetrahydrocannabinolic acid ($\Delta^9$-THCA), $\Delta^9$-Tetrahydrocannabivarin ($\Delta^9$-THCV), Cannabidiol (CBD), Cannabinolic acid (CBDA), Cannabidivarin (CBDV), Cannabinol (CBN), Cannabigerol (CBG), Cannabigerolic acid (CBGA), and Cannabichromene (CBC)) | mg/kg $\Delta^8$-Tetrahydrocannabinol ( $\Delta^8$-THC): 0.5 to 250 mg/kg $\Delta^9$-Tetrahydrocannabinolic acid ($\Delta^9$-THCA): 0.5 to 250 mg/kg $\Delta^9$-Tetrahydrocannabivarin ($\Delta^9$-THCV): 0.5 to 250 mg/kg Cannabidiol (CBD): 0.5 to 50000 mg/kg Cannabinolic acid (CBDA): 0.5 to 10000 mg/kg Cannabidivarin (CBDV): 0.5 to 350 mg/kg Cannabinol (CBN): 0.5 to 250 mg/kg Cannabigerol (CBG): 0.5 to 300 mg/kg Cannabigerolic acid (CBGA): 0.5 to 250 mg/kg Cannabichromene (CBC): 0.5 - 1000 mg/kg | | | |
| SOP PALC 0166 - The determination of hydrocyanic acid in foods by ultra performance liquid chromatography with fluorescence detection **1 2 3 4 | Hydrocyanic Acid | Marzipan and Nougat: 5 to 100 mg/kg Fruit 0.5 to 10 mg/kg Alcoholic Beverages: 2.5 to 50 mg/kg Apricot Kernels, Nuts and Seeds 2.5 to 2500 mg/kg | Marzipan and Nougat, Fruit, Alcoholic Beverages, Apricot Kernels, Nuts and Seeds | UPLC/Fluorescence detection | SOP PALC 0166 based on I.S. EN 16160:2012, Animal feeding stuffs - Determination of Hydrocyanic acid by HPLC |
| SOP PALC 0170 - The determination of Epigallocatechin-3-gallate (EGCG) in Food Supplements by HPLC with UV detection | Epigallocatechin-3-gallate (EGCG) | 1,000 to 290,000 mg/kg | Food Supplements | HPLC -UV | In-house procedure |

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| SOP PALC 0180 - The Determination of Glycyrrhizic Acid by High Performance Liquid Chromatography with UV Detection | Glycyrrhizic Acid | 50 to 2000 mg/kg<br>100 to 4000 mg/kg | Confectionery<br>Chewing gum | HPLC-UV | In-house test procedure |
| SOP PALC 0182 - The determination of Monacolin K in Food Supplements based on Rice fermented with Red Yeast Monascus purpureus by UPLC with UV Detection | Monacolin K | 0.8 to 60 mg/g | Red Yeast Rice Supplements | UPLC-UV | In-house test procedure |
| SOP PALC 0184 -The determination of Theobromine in non-alcoholic beverages by high performance liquid chromotography with UV/PDA detection | Theobromine | 5 to 200 mg/kg | Non-alcoholic beverages | HPLC and PDA/UV detection | In-house test procedure |
| SOP PALC 0185 - The determination of Quinine in alcoholic and non-alcoholic beverages by ultra performance liquid chromotography with fluorescence detection | Quinine | Alcoholic beverages: 10 to 400 mg/kg<br>Non-alcoholic beverages: 10 to 200 mg/kg | Alcoholic beverages<br>Non-alcoholic beverages | UPLC and Fluorescence | In-house test procedure |
| SOP PALC 0187 - The determination of Flavourings in Foodstuffs by GC-MS **1 2 3 4 | Beta Asarone, Menthofuran, Pulegone, Thujone | Beta Asarone 0.1 to 1.5 mg/kg, Menthofuran 15 to 150 mg/kg, Pulegone 15 to 120 mg/kg, Thujone 1 to 10 mg/kg | Alcoholic beverages | GC-MS | In-house test procedure |
| | Estragole, Methyl Eugenol, Safrole | Estragole 0.7 to 20 mg/kg, Methyl Eugenol 0.1 to 2 mg/kg, | Non-alcoholic beverages | GC-MS | In-house test procedure |

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| | | | Safrole 0.1 to 3 mg/kg | | | |
| | | Menthofuran<br>Pulegone | Menthofuran 20 to 150 mg/kg,<br>Pulegone 20 to 150 mg/kg | Chocolate | GC-MS | In-house test procedure |
| | | Methyl Eugenol,<br>Safrole | Methyl Eugenol 1 to 20 mg/kg,<br>Safrole 1 to 20 mg/kg | Soups and sauces | GC-MS | In-house test procedure |
| | SOP PALC 0189<br>The determination of Teucrin A in alcoholic beverages by high performance liquid chromatography | Teucrin A | 0.2 - 25 mg/kg | Alcoholic beverages | HPLC | In-house test procedure |
| 751 Food testing - .05 Speciation | SOP PALC 0158 -<br>The determination of inorganic arsenic species in food extracted with acid/peroxide by HPLC/ICPMS **1 2 3 4 | Inorganic Arsenic | Fish Tissue: 0.01 to 0.5mg/kg Rice and Rice Products: 0.04 to 1 mg/kg Cheese: 0.04 to 1 mg/kg Seaweed: 0.02 to 100 mg/kg Seafood: 0.01 to 0.5 mg/kg Milk: 0.01 to 0.3 mg/l Fruit and Vegetable Juices: 0.01 to 0.3 mg/litre Bread : 0.01 to 1.0 mg/kg | Fish Tissue, Rice and Rice Products, Cheese, Seaweed, Seafood, Milk, Fruit and Vegetable Juices, Bread | HPLC-ICP-MS | In-house test procedure |
| | SOP PALC 0176 -<br>The determination of methylmercury in food by HPLC-ICPMS **1 2 3 4 | Methylmercury | 0.04 to 5.50 mg/kg | Fish | HPLC-ICP-MS | In-house test procedure |
| 752 Chemical residue testing - .02 Elements | SOP PALC 0097 -<br>The determination of lead in whole blood by Graphite Furnace atomic absorption spectrophotometry **1 2 3 4 | Lead | 2.0 to 50.0 µg/100ml | Whole blood | Graphite furnace AA | In-house test procedure |
| | SOP PALC 0099 -<br>The determination of copper in plasma and serum by<br>flame atomic absorption | Copper | 25 to 250 µg/100ml | Serum, Plasma | Flame AAS | In-house test procedure |

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| spectrophotometry **1 2 3 4 | | | | | |
| SOP PALC 0101 - The determination of zinc in plasma and serum by flame atomic absorption spectrophotometry **1 2 3 4 | Zinc | 25 to 250 µg/100ml | Plasma, Serum | Flame AAS | In-house test procedure |
| SOP PALC 0104 - The determination of copper in urine by flame atomic absorption spectrophotometry **1 2 3 4 | Copper | 10 to 400 µg/l | Urine | Flame AAS | In-house test procedure |
| SOP PALC 0132 - The determination of manganese in whole blood by Graphite Furnace Atomic Absorption Spectrophotometry **1 2 3 4 | Manganese | 4.3 to 37.7 µg/l | Blood | Graphite furnace AAS | In-house test procedure |
| SOP PALC 0141 - The determination of Copper, Selenium and Zinc in Plasma and Serum by Inductively Coupled Plasma-Mass Spectrometry **1 2 3 4 | Copper | 25 to 250 µg/100 ml | Plasma, Serum | ICP-MS | In-house test procedure |
| SOP PALC 0141 - The determination of Copper, Selenium and Zinc in Plasma and Serum by Inductively Coupled Plasma-Mass Spectrometry **1 2 3 4 | Selenium | 25 to 250 µg/l | Plasma, Serum | ICP-MS | In-house test procedure |
| SOP PALC 0141 - The determination of | Zinc | 25 to 250 µg/100ml | Plasma, Serum | ICP-MS | In-house test procedure |

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| | Copper, Selenium and Zinc in Plasma and Serum by Inductively Coupled Plasma-Mass Spectrometry **1 2 3 4 | | | | | |
| | SOP PALC 0147 - - The determination of manganese, mercury, lead, chromium and cobalt in whole blood by inductively coupled plasma mass spectrometry **1 2 3 4 | Manganese | 2.5 to 400 µg/l | Whole Blood | ICP-MS | In-house test procedure |
| | SOP PALC 0147 - The determination of manganese, mercury, lead, chromium and cobalt in whole blood by inductively coupled plasma mass spectrometry **1 2 3 4 | Lead | 1.0 - 80 µg/100ml | Whole Blood | ICP-MS | In-house test procedure |
| | | Mercury | 1.0 to 40 µg/l | Whole Blood | ICP-MS | In-house test procedure |
| 752 Chemical residue testing - .03 Mycotoxins | SOP PALC 0018 - The determination of ochratoxin A in foodstuffs by immunoaffinity column extraction and high performance liquid chromatography (HPLC) with fluorescence detection **1 2 3 4 | Ochratoxin A | Cereals, Coffee, Dried fruit, Paprika, Chocolate, Chilli, Liquorice, Black/White pepper, Nutmeg, Ginger, Turmeric, Mixed spices, Cocoa, Rice, Green Coffee: 1 to 60 µg/kg Baby foods 0.2 to 30 µg/kg Red/White grape juice and Red/White wine, Sparkling and rose wine: 0.2 to 6 µg/l Beer 0.2 to 3 µg/l | Cereal products, Dried fruits, Wine, Beer, Coffee, Baby food, Liquorice, Spices, Grape juice, Chocolate, Cocoa, Rice, Rose and sparkling wine, Green coffee | Immunoaffinity column extraction and HPLC with fluorescence detection | In-house test procedure |
| | SOP PALC 0022 The determination of zearalenone in cereals, baby food, | Zearalenone | Cereals: 20 to 400 µg/kg Cereal-based baby foods: 20 to 400 µg/kg Maize Oil: 20 to | Cereals, Cereal-based baby foods, Maize Oil | Immunoaffinity column extraction and HPLC with fluorescence detection | In-house test procedure |

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| and maize oil by immunoaffinity column extraction and HPLC with fluorescence detection **1 2 3 4 | | 1,000 µg/kg | | | |
| SOP PALC 0031 - The determination of aflatoxins in food by Immunoaffinity Column Extraction, and High Performance Liquid Chromatography **1 2 3 4 | Aflatoxins B1, B2, G1 and G2 | Cereals, seeds, nut products, dried fruit and dried fruit products: Individually 0.2 to 20.0 µg/kg *Total Aflatoxins: 0 to 80 µg/kg Shelled nuts Individually 0.2 to 25.0 µg/kg *Total Aflatoxins 0 to 100.0 µg/kg Nuts and groundnuts in shell Individually 0.2 to 40.0 µg/kg *Total Aflatoxins 0 to 160 µg/kg Spices Individually 0.2 to 30.0 µg/kg *Total Aflatoxins 0 to 120 µg/kg Chocolate: 1.0 to 20 µg/kg *Total Aflatoxins 0 to 80 µg/kg Baby foods 0.05 to 20µg/kg (B1 only) | Cereals, nut products, dried fruit and dried fruit products, shelled nuts, nuts, groundnuts, spices, seeds, baby foods and chocolate. | Immunoaffinity column extraction and HPLC-FLD | In-house test procedure |
| SOP PALC 0045 - The determination of patulin in apple products, juices and smoothies and ciders by SPE extraction and quantification by UPLC with ultraviolet or tandem mass spectrometric detection **1 2 3 4 | Patulin | 10 - 200 µg/kg - Apple juices, apple smoothies 10 - 250 µg/kg - Ciders 5 – 25 µg/kg - Baby foods | Non-alcoholic beverages Apple Juice Apple smoothies Alcoholic beverages Ciders Others - Baby foods | UPLC with UV or MS/MS detection | In-house test procedure |
| SOP PALC 0074 - The determination of T-2 and HT-2 toxins in cereals, animal feed and baby food by UPLC-MS/MS | T-2 and HT-2 toxins | Cereals, animal feed: T-2: 4 to 800 µg/kg HT-2: 4 to 800 µg/kg *Sum of T-2 and HT-2 0 to 1,600 µg/kg Baby food: | Cereals, animal feed, baby food | UPLC-MS/MS | In-house test procedure |

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| **1 2 3 4 | | T-2: 1 to 20 µg/kg<br>HT-2: 1 to 20 µg/kg<br>*Sum of T-2 and HT-2<br>0 to 40 µg/kg<br>(*Note: based on lower bound calculation) | | | |
| SOP PALC 0076 - The determination of fumonisins B1, B2 and B3 in cereals and cereal products by immunoaffinity column extraction and high performance liquid chromatography (HPLC)<br>**1 2 3 4 | Fumonisins | Fumonisin B1: 50 to 8010 µg/kg Fumonisin B2: 50 to 7780 µg/kg Fumonisin B3: 50 to 400 µg/kg *Total Fumonisins:<br>0 to 16,190 µg/kg<br>(*Note: based on lower bound calculation) | Cereal-based foods and baby foods | Immunoaffinity column extraction and HPLC with fluorescence detection | In-house test procedure |
| SOP PALC 0077 - The determination of aflatoxin M1 in milk and milk powder by HPLC and fluorescence detection **1 2 3 4 | Aflatoxin M1 | Milk: 0.025 to 0.33 µg/l<br>Milk powder: 0.02 to 0.75 µg/kg | Milk, milk powder | Immunoaffinity column extraction and HPLC with fluorescence detection | In-house test procedure |
| SOP PALC 0081 - The determination of deoxynivalenol in cereal, pasta and baby food products by immunoaffinity column extraction and high performance liquid chromatography (HPLC)<br>**1 2 3 4 | Deoxynivalenol | 50 to 4,000 µg/kg | Cereals, cereal based baby food, pasta | Immunoaffinity column extraction and HPLC with fluorescence detection | In-house test procedure |
| SOP PALC 0157 - The determination of type A and B trichothecene mycotoxins in foodstuffs by UPLC-MS/MS **1 2 3 4 | Trichothecenes: Diacetoxyscirpenol (DAS), 3-Acetyl-deoxynivalenol (3AcDON), 15-Acetyldeoxynivalenol (15 AcDON), Deoxynivalenol (DON), Sterigmatocyste in (STC), T-2 toxin, HT-2 | Diacetoxyscirpenol: 10.0 to 250.0 µg/kg, 3-Acetyl-deoxynivalenol: 10.0 to 250.0 µg/kg, 15-Acetyl-deoxynivalenol: 10.0 to 250.0 µg/kg, Deoxynivalenol: 50.0 to | Cereals | UPLC-MS/MS | In-house test procedure |

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| | | toxin | 2000.0 µg/kg, Sterigmatocystein: 5.0 - 125.0 µg/kg, T-2 toxin: 10.0 to 1000.0 µg/kg, HT-2 toxin: 10.0 to 1000.0 µg/kg, *Sum of T-2 and HT-2 toxins: 0.0 to 2000.0 µg/kg (*Note: based on lower bound calculations) | | | |
| 752 Chemical residue testing - .05 Organic contaminants | SOP PALC 0032 - The determination of Acrylamide in food **1 2 3 4 | Acrylamide | 20 to 2500 µg/kg | Food | GC-MS | In-house test procedure based on Castle, L., Determination of Acrylamide Monomer in Mushrooms Grown on Polyacrylamide Gel. J. Agric. Food Chem. 1993, 41, 1261–1263. |
| | SOP PALC 0041 - The Determination of Furan and Certain Analogues in Foods by Headspace GC-MS **1 2 3 4 | Furan, 2-methylfuran, 3-methylfuran, 2-ethylfuran, 2,5-dimethylfuran | Coffee (µg/kg or L)<br>Furan<br>5 to 10000<br>2-methylfuran<br>11.5 to 55000<br>3-methylfuran<br>1 to 3500<br>2-ethylfuran<br>0.5 to 3500<br>2,5-dimethylfuran 1 to 3500<br><br>Solid food (µg/kg)<br>Furan<br>5 to 10000<br>2-methylfuran<br>0.8 to 310<br>3-methylfuran<br>0.8 to 210<br><br>Liquid foods (µg/L)<br>Furan<br>5 to 1000<br>2-methylfuran<br>0.8 to 310<br>3-methylfuran<br>0.8 to 210 | Solid foods<br>Liquid foods<br>Coffee | Headspace GC-MS | In-house test procedure based on U.S. Food and Drug Administration (US FDA) Centre for Food Safety and Applies Nutrition (CFSAN) Determination of furan in foods May 7 2004 http://www.cfsan.fda.gov/~dms/furan.html |

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| SOP PALC 0075 - The determination of polycyclic aromatic hydrocarbons in foods by GC-MS **1 2 3 4 | Polycyclic aromatic hydrocarbons (PAHs): Cyclopenta[cd]pyrene Benz[a]anthracene Chrysene 5-Methylchrysene Benzo[b]fluoranthene Benzo[j]fluoranthene Benzo[k]fluoranthene Benzo[a]pyrene Indeno[1,2,3-cd]pyrene Dibenzo[a,h]anthracene Benzo[ghi]perylene Dibenzo[a,l]pyrene Dibenzo[a,e]pyrene Dibenzo[a,i]pyrene Dibenzo[a,h]pyrene | Meat and meat products, game and poultry Smoked meat: Individual PAHs 0.9 to 20.0 µg/kg *Sum of PAH4 0 to 80.0 µg/kg Heat treated meat: Individual PAHs 0.5 to 25.0 µg/kg*Sum of PAH4 0 to 100.0 µg/kgFish, shellfish and molluscsSmoked fish: Individual PAHs 0.9 to 20.0 µg/kg *Sum of PAH4 0 to 80.0 µg/kg Fats and oils: Individual PAHs 0.9 to 20.0 µg/kg *Sum of PAH4 0 to 80.0 µg/kg Cereals and bakery products (Flour): Individual PAHs 0.05 to 5 µg/kg *Sum of PAH4 0 to 20.00 µg/kg Herbs and spices: Individual PAHs 0.9 to 30.0 µg/kg*Sum of PAH4 0 to 120.0 µg/kg Cocoa and Cocoa preparations, coffee, tea Raw beverages: Individual PAHs 1.0 to 10.0 µg/kg *Sum of PAH4 0 to 40.0 µg/kg Brewed beverages: Individual PAHs 0.2 to 2.0*Sum of PAH4 0 to 8.0 µg/kg Cocoa beans and derived products: Individual PAHs 0.5 to 29.0 µg/kg fat *Sum of PAH4 0 to 116.0 µg/kg fat Foodstuffs intended for special nutritional uses (Infant formula | Meat and meat products, game and poultry Smoked meat Heat treated meat Fish, shellfish and molluscs Smoked fish Fats and oils Cereals and bakery products - Flour Herbs and spices Cocoa and Cocoa preparations, coffee, tea Raw beverages Brewed beverages Cocoa beans and derived products Foodstuffs intended for special nutritional uses Infant formula Baby foods Food supplements, Smoked cheese | GC-MS | In-house test procedure |

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| | | ,Baby foods): Individual PAHs 0.2 to 10.0 µg/kg *Sum of PAH4 0 to 40.0 µg/kg Food Supplements: Individual PAHs 0.9 to 200.0 µg/kg *Sum of PAH4 0 to 800.0 µg/kg *Note: ranges for Sum PAH4 based on lower bound calculation, Smoked cheese: 0.5 to 50 ug/kg for all PAHs | | | |
| SOP PALC 0110 - The determination of Ergot Alkaloids in cereals and cereal based products by LC-MS/MS **1 2 3 4 | Ergometrine, Ergometrinine, Ergosine, Ergosinine, Ergocornine, Ergocorninine, Ergocryptine, Ergocryptinine, Ergotamine, Ergotaminine, Ergocristine, Ergocristinine | 'ine' compounds: 2.5 to 1000 µg/kg 'inine' compounds: 1.25 to 1000 µg/kg | Cereals, Cereal products | UPLC-MS/MS | In-house test procedure |
| SOP PALC 0127 - The determination of 3-monochloro propane-1,2-diol in food by GC-MS **1 2 3 4 | 3-monochloropropane-1,2-diol | 8.4 to 1000 µg/kg DM (dry Matter) | Soy sauce and hydrolysed vegetable protein (HVP) | GC-MS | In-house test procedure based on I.S. EN 14573:2004 Foodstuffs - Determination of 3-Monochloropropane-1,2-Diol by GC/MS |
| SOP PALC 0130 - The determination of pyrrolizidine alkaloids and tropane alkaloids in foodstuffs by UPLC-MS/MS **1 2 3 4 | Pyrrolizidine Alkaloids (PA): Echimidine (Em), Echimidine-N-oxide (Em-ox), Erucifoline (Er), Erucifoline-N-oxide (Er-ox), Europine (Eu), Europine-N-oxide (Eu-ox), Heliotrine (Ht), Heliotrine-N-oxide (Ht-ox), Intermedine (Im), Intermedine-N-oxide (Im-ox), Jacobine (Jb), Jacobine-N-oxide (Jb-ox), Lasiocarpine (Lc), Lasiocarpine-N-oxide (Lc-ox), Lycopsamine (Ly), | 10 to 900 µg/kg for each analyte *Sum of PAs: 0 to 23400 µg/kg (*Note: based on lower bound calculations) | Black tea | UPLC-MS/MS | In-house test procedure |

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| | Lycopsamine-N-oxide (Ly-ox), Monocrotaline (Mc), Monocrotaline-N-oxide (Mc-ox), Retrorsine (Rt), Retrorsine-N-oxide (Rt-ox), Senkirkine (Sk), Senecionine (Sn), Senecionine-N-oxide (Sn-ox), Seneciphylline (Sp), Seneciphylline-N-oxide (Sp-ox), Trichodesmine (Td) and the Tropane Alkaloids: Atropine and Scopolamine | | | | |
| SOP PALC 0140 **1 2 3 4 | Monochloropropandiol (MCPDE) and Glycidol esters (GE) | Liquid infant formula (IF) & follow on formula (FOF) 2.0 - 130 µg/kg for MCPDEs and 2.0 - 170 µg/kg for GEs<br><br>Powder IF & FOF 15 - 1300 µg/kg for MCPDEs and 15 - 1700 µg/kg for GEs<br><br>Fats and Oils: 100 - 20000 µg/kg for MCPDEs and 100 - 20000 µg/kg for GEs Food: 6 - 1200 ug/kg | Liquid and powdered infant formula & follow-on formula Fats and Oils | GC-MS | In-house test procedure based on 1.1 AOCS Official Method Cd 29a-13. |
| SOP PALC 0161 - The determination of fatty acids in food for infants and young children, milk and milk products **1 2 3 4 | Erucic Acid | Individual fatty acids: 0.1 to 100 %<br>For erucic acid: 1 to 100 g/kg or 0.1% to 10% | Food for infants and young children, milk and milk products | GC-FID | In-house test procedure based on National Standard of the People's Republic of China GB 5413.27 - 2010 |
| SOP PALC 0162 - The determination of fatty acids in oils and fats and the oils and fats extracted from food. **1 2 3 4 | | 0.2 to 100 % for fatty acids generally 2 to 100 g/kg fatty acids for erucic acid | Oils and fats and the oils and fats extracted from food. | GC-FID | In-house test procedure based on ISO 12966 parts 1 - 4 |
| SOP PALC 0174 - The determination of acrylamide food by | Acrylamide | 20 to 750 µg/kg | Food | LC-MS/MS | In-house test procedure based on ISO 16618:2015 |

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| | LC-MS/MS **1 2 3 4 | | | | | |
| | SOP PALC 0186 - The determination of monochloro propane-1,2-diols in food by GC-MS | 2-MCPD<br>3-MCPD | 2- and 3-MCPD: 1 to 200 µg/kg for liquid infant formula and follow-on formula<br>2- and 3-MCPD: 5 to 200 µg/kg for powder infant formula and follow-on formula<br>2- and 3-MCPD: 25 to 1000 µg/kg for oils and fats<br>2- and 3-MCPD: 5 to 500 µg/kg for general food | Liquid infant formula and follow-on formula<br>Powder infant formula and follow-on formula<br>Oil and fats<br>General food | GC-MS | In house test procedure. The method has been tested and validated at the EU Reference Laboratory for Processing Contaminants. |
| 766 Environmental testing (inc waters) - .05 Inorganic | SOP PALCW 0005 - The determination of anions in aqueous samples by reagent free ion chromatography **1 2 3 4 | Fluoride | Waters for potable and domestic purposes: Fluoride 0.10 to 1.75 mg/l Misc Materials and Products Fluoride 10.9% HFSA solution | Waters for potable and domestic purposes<br><br>Misc. Materials and products | By reagent free ion chromatography (RFIC) | In-house test procedure |
| | SOP PALCW 0006 - The determination of metals in aqueous samples by inductively coupled plasma/mass spectrometry (ICP-MS) **1 2 3 4 | Total metals | Waters for potable and domestic purposes: Chromium 4 to 80 Cr µg/l Cadmium 1 to 40 µg/l Lead 2 to 40 µg/l Nickel 2 to 40 µg/l Copper 0.1 to 2.0 mg/l Sodium 2 to 200 mg/l Calcium 2 to 40 mg/l Potassium 0.10 to 2.0 mg/l Magnesium 0.10 to 2.0 mg/l Aluminium 20 to 400 µg/l Antimony 1 to 40 µg/l Arsenic 2 to 40 µg/l Selenium 2 to 40 µg/l Manganese 10 to 400 µg/l Boron 100 to 2000 µg/l Iron 20 to 750 µg/l Zinc 20 to 400 µg/l Misc Materials and Products: Antimony 40 | Waters for potable and domestic purposes<br><br>Misc Materials and products | By inductively coupled plasma/mass spectrometry (ICP-MS) | In-house test procedure |

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| | | to 9250 µg/l Arsenic 40 to 46200 µg/ l Cadmium 40 to 4630 µg/l Chromium 40 to 46200 µg/l Lead 40 to 46200 µg/l Nickel 40 to 46200 µg/l Selenium 40 to 9250 µg/l | | | |
| SOP PALCW 0019 - The measurement of conductivity of waters for potable and domestic purposes **1 2 3 4 | Conductivity | 20 to 1270 µS/cm at 20°C | Waters for potable and domestic purposes | Jenway conductivity meter | In-house test procedure |
| SOP PALCW 0020 - The measurement of turbidity in waters for potable and domestic purposes **1 2 3 4 | Turbidity | (NTU) 0.5 to 400 | Waters for potable and domestic purposes | Hach Turbidimeter | In-house test procedure |
| SOP PALCW 0021 - The determination of analytes in water samples by photometric analysis **1 2 3 4 | Nutrients | Ammonium (as NH4) 0.064 to 1.15mg/l Chloride (Cl) 10 to 250mg/l Nitrite (NO2) 0.164 to 1.313mg/l Nitrate (NO3) 6.64 to 50.91mg/l Sulphate (SO4) 8 to 250mg/l Alkalinity (HCO3) 50 to 300mg/l Total Hardness (CaCO3) 50 to 300mg/l Colour (Pt-Co units) 10 to 90 mg/l | Waters for potable and domestic purposes | Using Thermoscientific Aquakem 250 discrete analyser | In-house test procedure |
| SOP PALCW 0022 - The measurement of pH of waters for potable and domestic purposes **1 2 3 4 | pH | pH 4 to 10 | Waters for potable and domestic purposes | Jenway pH meter | In-house test procedure |
| SOP PALCW 0023 - The determination of mercury in aqueous samples by cold vapour atomic | Mercury | Waters for potable and domestic purposes = 0.3 to 5.0 µg/l Misc. Material and Products = 100 to 1200 µg/l | Waters for potable and domestic purposes Misc. Materials | By Cold Vapour Atomic Absorption spectrophotometry | In-house test procedure |

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| | absorption spectrophotometry **1 2 3 4 | | | and products | | |
| 767 Physical test/measurement - .01 pH | SOP PALC 0115 - The determination of the pH and free acidity of honey by titration to pH 8.30 or equivalence point **1 2 3 4 | pH and Acidity | pH: 3.5 to 8.0 pH units Acidity: 5 to 50 mEq/kg | Honey | Autotitrator and pH meter | In-house test procedure |
| | SOP PALC 0160 - The determination of the pH of soft drinks, energy drinks and fruit juices **1 2 3 4 | pH | 2.00 to 5.00 pH units | Non alcoholic beverages (Drinks and juices) | pH Meter | In-house test procedure |
| 767 Physical test/measurement - .02 Conductivity | SOP PALC 0114 - The determination of the electrical conductivity of honey and vodka **1 2 3 4 | Conductivity | Honey: 0.1 to 1.6 mS/cm Vodka: 7 to 200 µS/cm | Honey, Vodka | Conductivity Meter | In-house test procedure |
| 767 Physical test/measurement - .03 Suspended Solids | SOP PALC 0118 - The determination of insoluble matter in honey **1 2 3 4 | Insoluble matter | 0.01 to 0.11 g/100 g | Honey | Gravimetric Determination | In-house test procedure |

*The laboratory has been awarded flexible scope in the scope classifications as noted in the scope document and in accordance with the laboratories approved and documented procedures.*
*Note 1 - Range may be extended for the test*
*Note 2 – New parameters / tests may be added*
*Note 3 – New matrices may be added*
*Note 4 – Changes to equipment / kits where the underlying methodology does not change*
*For further details please refer to the laboratories 'Master list of Flexible scope changes', available directly from the laboratory.*