

Schedule of Accreditation

issued by

United Kingdom Accreditation Service

2 Pine Trees, Chertsey Lane, Staines-Upon-Thames TW18 3HR, UK

 <p>4412</p> <p>Accredited to ISO/IEC 17025:2005</p>	SYNLAB Analytics & Services United Kingdom Limited	
	Issue No: 036 Issue date: 21 September 2018	
	Unit 44 Nelson Park Colbourne Crescent Cramlington NE23 1WB	Contact: Dr E Abbot Tel: +44 (0) 191 243 0871 E-Mail: info@geneiuslabs.com Website: www.geneiuslabs.com
Testing performed at the above address only		

DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
FOODS AND FOOD PRODUCTS and ENVIRONMENTAL SWABS	<u>Allergen Tests</u> Detection (qualitative) and Determination (quantitative) of Gluten Quantitative Determination of Food Allergens	Documented In-house Methods: ALL001 using Veratox R5 Rapid ELISA kit Generic procedure FLX001 using commercial immunoassay (ELISA) kits under flexible scope
	<u>Molecular Biology Tests</u> Meat Speciation. Qualitative detection of mitochondrial DNA from: Chicken, cow, goat, horse, pig, sheep and turkey Meat speciation (detection of DNA)	MEAT001 using manual extraction, PCR and QIAxcel electrophoresis
	Amphibians, Birds, Mammals and Reptiles	DNA extraction using in house procedures according to procedure NGS1001 PCR amplification NGS 1002 using next generation sequencing using Ion Torrent PGM. Data analysis using procedure NGS1006
	Fish species	DNA extraction using in house procedures according to procedure NGS1001 PCR amplification NGS 1007 using next generation sequencing using Ion Torrent PGM. Data analysis using procedure NGS1006



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FOODS AND FOOD PRODUCTS	<u>Chemistry Tests</u> Ash Dietary fibre Fat (total) Fatty acid profile: - saturated - monounsaturated - polyunsaturated - trans fatty acids Hydroxyproline Moisture Nitrogen/Protein Sodium Sugars: - Total - Fructose - Glucose - Galactose - Lactose - Maltose - Sucrose	Documented In-house Methods: CHEM014 based on BS 4401 Part 1 1998 by gravimetric determination CHEM012 based on AOAC Method 991.43 1. CHEM015 by acid hydrolysis based on BS 4401 Part 4: 1970 2. CHEM022 using CEM Smart Trac CHEM016 based on AOAC 996.06 using gas chromatography CHEM018 based on BS 4401 Part 11: 1995 1. CHEM013 by gravimetric determination 2. CHEM022 using CEM Smart Trac CHEM010 based on Kjeldahl AOAC Method 928.08 CHEM024 by Dumas 5E-TCN2200 Nitrogen analyser CHEM009 by atomic emission spectroscopy CHEM011 by HPLC



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<p>FOOD and FOOD PRODUCTS BEVERAGES</p>	<p><u>Chemistry Tests (cont'd)</u></p> <p>Determination of water activity (aW)</p> <p>Calculations based on results of accredited methods:</p> <ul style="list-style-type: none"> - Added water - Apparent Fat Free Meat - Apparent Total Meat - Apparent Total Fish - Content - EU Meat Content - Total Carbohydrate - Carbohydrate (available) - Collagen - Collagen Protein Ratio - Excess Connective Tissue - Excess Fat - Total Energy - Salt (sodium chloride) <p>Determination of pH</p>	<p>Documented In-house Methods:</p> <p>CHEM025 using AquaLab water activity meter</p> <p>CHEM020 by calculation</p> <p>CHEM007 using Denver 225 pH/ion meter</p>
<p>ENVIRONMENTAL SWABS</p>	<p><u>Microbiological Tests</u></p> <p>Detection of:</p> <p><i>Campylobacter</i> spp., confirmed</p> <p><i>Escherichia coli</i> O157 specific DNA (presumptive)</p>	<p>Documented In-house Methods:</p> <p>MIC1024 based on BS EN ISO 10272-1:2006 confirmed using 16S DNA sequencing procedure MIC1011</p> <p>MIC 1072 enrichment and PCR assay based on PD CEN ISO/TS 13136:2012 using spin column manual or QIAgen, QIAxtractor automated extraction, PCR and QIAxcel electrophoresis. Positive results confirmed using 16S DNA sequencing procedure MIC 1011</p>



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ENVIRONMENTAL SWABS (cont'd)	<p><u>Microbiological Tests (cont'd)</u></p> <p>Detection of: (cont'd)</p> <p><i>Listeria</i> species including <i>Listeria monocytogenes</i></p> <p><i>Listeria monocytogenes</i>, specific DNA confirmed</p> <p><i>Listeria</i> spp., specific DNA confirmed for absence</p> <p><i>Listeria</i> species including <i>Listeria monocytogenes</i></p> <p><i>Salmonella</i> spp., confirmed</p> <p><i>Salmonella</i> spp specific DNA</p>	<p>Documented In-house Methods:</p> <p>1) MIC1019 based on BS EN ISO 11290-1:2017 identified using DNA sequencing MIC1066</p> <p>2) MIC1049 based on BS EN ISO 11290-1:2017, and customer specified method, confirmed using 16S DNA sequencing procedure MIC1066</p> <p>MIC1036 using spin column extraction and /or QIAgen QIAextractor automated extraction, PCR and QIAxcel electrophoresis</p> <p>MIC1058 using spin column extraction, and /or QIAgen QIAextractor automated extraction, PCR and QIAxcel electrophoresis , positive culture isolates confirmed using 16S DNA sequencing procedure MIC1011</p> <p>MIC1077 in-house documented method using LESS plus broth, confirmed using MIC1066</p> <p>MIC1023 based on BS EN ISO 6579-1:2017 + A1:2007 identified using DNA sequencing procedures MIC1046</p> <p>MIC1046 using spin column extraction, and /or QIAgen QIAextractor automated extraction , PCR and QIAxcel electrophoresis</p>



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ENVIRONMENTAL SWABS (cont'd)	<u>Microbiological Tests (cont'd)</u> Enumeration of : Aerobic Colony Count at 30°C Coliforms at 37°C (presumptive) Enterobacteriaceae (presumptive) <i>β</i> -glucuronidase positive <i>Escherichia coli</i> Lactic Acid Bacteria (presumptive) Coagulase-positive <i>Staphylococcus</i> (confirmed) Yeasts and Moulds	Documented In-house Methods: 1) MIC1004 based on BS EN ISO 4833-1:2013 at 72 hours 2) MIC1004 at 48 hours (client specified) MIC1017 based on BS ISO 4832:2006 MIC1018 based on BS ISO 21528-2:2017 1) MIC1022 based on BS ISO 16649-2:2001 2) MIC1047 customer specified method MIC1045 based on BS ISO 15214:1998 MIC1021 based on BS EN ISO 6888-1:1999, confirmed using Prolab or Oxoid Staphytest latex agglutination kits MIC1005 based on BS ISO 21527-1:2008 using DRBC agar for foods >0.95 Aw
DAIRY PRODUCTS	<u>Microbiological Tests</u> Enumeration of: Aerobic Colony Count at 30°C	Documented In-house Methods: 1) MIC1004 based on BS EN ISO 4833-1:2013, using MPCA at 72 hours 2) MIC1004 at 48 hours (client specified)



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DAIRY PRODUCTS (cont'd)	<u>Microbiological Tests (cont'd)</u>	Documented In-house Methods:
FOODS and FOOD PRODUCTS (general unless specified)	Enumeration of: <i>Pseudomonas</i> species (presumptive)	MIC1025 based on BS EN ISO 13720:2010
	Detection of: <i>Campylobacter</i> spp., confirmed	MIC1024 based on BS EN ISO 10272-1: 2006 confirmed using 16S DNA sequencing procedure MIC1011
	<i>Escherichia coli</i> O157 specific DNA (presumptive)	MIC 1072 enrichment and PCR assay based on PD CEN ISO/TS 13136:2012 using spin column manual or QIAgen QIAxtractor automated extraction, PCR and QIAxcel electrophoresis. Positive results confirmed using 16S DNA sequencing procedure MIC 1011
	<i>Listeria</i> species including <i>Listeria monocytogenes</i>	1) MIC1019 based on BS EN ISO 11290-1:2017 identified using MIC1066 2) MIC1049 based on BS EN ISO 11290-1:2017 BS 5763-18:1997 and customer specified method, confirmed using MIC1066
	<i>Listeria monocytogenes</i> , specific DNA confirmed for absence	MIC1036 using spin column extraction and /or QIAgen QIAxtractor automated extraction, PCR and QIAxcel electrophoresis
<i>Listeria</i> spp, confirmed	MIC1058 using spin column extraction, and /or QIAgen QIAxtractor automated extraction PCR and QIAxcel electrophoresis. Isolates confirmed using MIC1066	



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FOODS and FOOD PRODUCTS (general unless specified) (cont'd)	<u>Detection of (cont'd):</u> <i>Listeria species</i> including <i>Listeria monocytogenes</i> <i>Salmonella</i> spp, confirmed <i>Salmonella</i> spp specific DNA Enumeration of: Aerobic Colony Count at 30°C <i>Clostridium perfringens</i> Coliforms at 37°C (presumptive) Enterobacteriaceae (presumptive) β -glucuronidase positive <i>Escherichia coli</i> Lactic Acid Bacteria (presumptive)	Documented In-house Methods MIC1077 in-house documented Method using LESS plus broth, confirmed using MIC1066 MIC1023 based on BS EN ISO 6579-1:2017 identified using MIC1046 MIC1046 using spin column extraction, and /or QIAgen QIAextractor automated extraction, PCR and QIAxcel electrophoresis 1) MIC1004 based on BS EN ISO 4833-1:2013 at 72 hours 2) MIC1004 at 48 hours (client specified) MIC1027 based on BS ISO 7937:2004 and customer specified method, confirmed using 16S DNA sequencing procedure MIC1011 MIC1017 based on BS ISO 4832:2006 MIC1018 based on BS ISO 21528-2:2017 1) MIC1022 based on BS ISO 16649-2:2001 2) MIC1047 based BS ISO 16649-2:2001 and customer specified method MIC1045 based on BS ISO 15214:1998



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FOODS and FOOD PRODUCTS (general unless specified) (cont'd)	<u>Enumeration of (cont'd):</u> <i>Listeria</i> species including <i>L. monocytogenes</i> Coagulase-positive <i>Staphylococcus</i> (confirmed) Sulphite reducing Clostridia (presumptive and confirmed) Yeasts and Moulds	Documented In-house Methods MIC1020 based on BS EN ISO 11290-2:2017, identified using MIC1066 MIC1021 based on BS EN ISO 6888-1:1999, confirmed using Prolab or Oxoid Staphytest latex agglutination kits MIC1056 based on BS ISO 15213:2003 with confirmation using DNA sequencing procedure MIC1011/1012 1) MIC1005 based on BS ISO 21527-1:2008 using DRBC agar for foods >0.95 Aw 2) MIC1005 based on BS ISO 21527-2:2008 using DG18 agar for foods between 0.95 and 0.6 Aw 3) MIC1005 based on BS ISO 21527-1:2008 using OSA agar for fruit juices and beverages
Breads, Dried Foods, Grains (cooked/uncooked), Condiments/Sauces & Dairy	<i>Bacillus cereus</i> (presumptive)	MIC1026 based on BS EN ISO 7923:2004
Meats & Meat Products	<i>Pseudomonas</i> species (presumptive)	MIC1025 based on BS EN ISO 13720:2010
Sea fish and Seafood Products	Detection of: <i>Vibrio parahaemolyticus</i> and <i>Vibrio cholerae</i>	MIC1048 based on DD ISO/TS 21872-1:2007 and customer specified method, confirmed with API 20NE



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MICROBIAL CULTURES	<u>DNA Sequencing</u> Microbial identification	Documented In-house Methods: MIC1011/1012 using 16S/28S DNA sequencing using ABI3730 DNA sequencer and ABI Microseq Database
Presumptive <i>Listeria</i> colony isolates	<u>Microbiological Tests</u> <i>Listeria</i> species confirmation and identification	Documented In-House Methods MIC1066 using DNA extraction, PCR and QIAxcel electrophoresis
WATERS Drinking waters (including bottled mineral water)	<u>Microbiological Tests</u> Enumeration of: Total Aerobic Counts at 22°C and 37°C Coliforms and <i>Escherichia coli</i> Enterococci (Faecal Streptococci) <i>Pseudomonas aeruginosa</i> (confirmed) Sulphite reducing Clostridia	Documented In-House Methods: MIC1028 based on the Microbiology of Drinking Water (2012) Part 7 MIC1068 based on the Microbiology of Drinking Water (2016) Part 4B confirmed using DNA sequencing procedures MIC1011/1012 MIC1031 based on the Microbiology of Drinking Water (2010) Part 5 and BS ISO7899-2:2012 MIC1033 based on Microbiology of Drinking Water (2015) Part 8 MIC1032 based on Microbiology of Drinking Water (2015) Part 6a
END		