



Bureau of Laboratory Quality Standards  
Ministry of Public Health

This is to certify that

**The laboratory of**  
**Bureau of Quality Control of Livestock Products,**  
**Department of Livestock Development**

**91 Moo 4, Tivanon Road, Bang Kadi, Muang,**  
**Pathumthani 12000, Thailand**

has been accepted as an  
accredited laboratory complying with the ISO/IEC 17025:2005  
and the requirements of the Bureau of Laboratory Quality Standards

The laboratory has been accredited for specific tests  
listed in the scope within the field of

**Foods, Veterinary Drugs and Livestock Products Testing**

  
(Mrs. Chomchailai Sinthusarn)

Director of Bureau of Laboratory Quality Standards

Date of Accreditation : 27 November 2014

Date of Expiration : 26 November 2016

Accreditation Number 1134/51

**The Laboratory of Bureau of Quality Control of Livestock Products, Department of Livestock Development, Ministry of Agriculture and Cooperatives, has been accepted as an accredited laboratory in the field of health products testing for the following scopes.**

No	Type of Sample	Test	Test Method
1.	<ul style="list-style-type: none"> <li>- Meat and Meat Products</li> <li>- Egg and Egg Products)</li> <li>- Carcass</li> <li>- Animal skin</li> <li>- Animal Entrails</li> <li>- Dairy and Dairy products</li> <li>- Dog Chew</li> </ul>	Enterococcus	Nordic Committee on Food Analysis, No.68, 5 <sup>th</sup> Edition (2011).
		Total Bacterial Count	FDA BAM Online, 2001. (Chapter 3)
		Coagulase-positive Staphylococci and <i>Staphylococcus aureus</i>	ISO 6888-1: 1999 (Baird-Parker Agar Medium (BPK Technique)).
			ISO 6888-2: 1999 (Rabbit-Plasma Fibrinogen (RPF Technique)).
		<i>Clostridium perfringens</i>	FDA BAM Online, 2001. (Chapter 16).
		<i>Salmonella</i> spp.	ISO 6579: 2002./Cor. 1: 2004
		Enterobacteriaceae	ISO 21528: 2004
		Coliform and <i>Escherichia coli</i>	FDA BAM Online, 2013. (Chapter 4).
		<i>Listeria monocytogenes</i>	AOAC 2003.12 (2012) (BAX® System; PCR Technique).
		Staphylococcal Enterotoxin	Transia plate Staphylococcal Enterotoxin. Diffchamb (Sandwich-type ELISA Technique).
2.	<ul style="list-style-type: none"> <li>- Meat</li> <li>- Animal Entrails</li> </ul>	Detection of Anti-bacterial Substance Residues (Screening test)	<p>In-house method BQCLP_VPHL_FM_T5.4_06 (Agar Diffusion assay) in connection with:</p> <ol style="list-style-type: none"> <li>1. Food Additives and Contaminants (2006) Vol.23 (1):16-24.</li> <li>2. Veterinary Sciences Division, Department of Agriculture and Rural Development for Northern Ireland. Belfast's Standard Operating Procedure. SOP CSD 222 V1 (2004), The Detection of Residues of Anti-bacterial Substances in Animal Tissues (Six Plate Method, Agar diffusion Test)</li> </ol>
3.	Water and Ice	Coliforms	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WEF. 22 <sup>nd</sup> Edition, 2012. Part 9221.
		<i>Escherichia coli</i>	

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4.	Carcass Rinse	<i>Salmonella</i> spp.	USDA (2011) MLG4C.03 (BAX <sup>®</sup> System; PCR Technique).
5.	Animal fat	Organochlorine Pesticides (OCPs ) <ul style="list-style-type: none"> <li>- Hexachlorobenzene (HCB)</li> <li>- Hexachlorocyclohexane alpha isomer (HCB <math>\alpha</math>-BHC)</li> <li>- Hexachlorocyclohexane beta isomer (HCB <math>\beta</math>-BHC)</li> <li>- Hexachlorocyclohexane gamma isomer (HCB <math>\gamma</math>-BHC)</li> <li>- Heptachlor</li> <li>- Heptachlor epoxide</li> <li>- Aldrin</li> <li>- Dieldrin</li> <li>- p,p'-DDE</li> <li>- p,p'-DDD</li> <li>- o,p'-DDT</li> <li>- p,p'-DDT</li> <li>- Chlordane cis isomer (<math>\alpha</math>-chlordane)</li> <li>- Chlordane trans isomer (<math>\gamma</math>-chlordane)</li> <li>- Oxychlordane</li> </ul>	In-house Method BQCLP_VPHL_CR_T5.4_01 Based on Journal Association Official Analytical Chemists (1984) Vol.67, No. 2, P.295-298. (GC-ECD Technique).
6.	- Muscle - Liver	Total Arsenic	In-house Method BQCLP_VPHL_CR_T5.4_02 Based on AOAC (2012), 986.15 (AAS Technique).
		Cadmium	In-house Method BQCLP_VPHL_CR_T5.4_03 Based on AOAC (2012), 999.10 (AAS Technique).
7.	Honey	Total Arsenic	In-house Method BQCLP_VPHL_CR_T5.4_04 Based on AOAC (2012), 986.15 (AAS Technique).
		Cadmium	In-house Method BQCLP_VPHL_CR_T5.4_05 Based on AOAC (2012) 999.10(AAS Technique)

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8.	Muscle Liver Honey	Lead	In-house Method BQCLP_VPHL_CR_T5.4_08 Based on AOAC (2012), 999.10 (AAS Technique).
		Total Mercury	In-house Method BQCLP_VPHL_CR_T5.4_09 Based on EPA Method 7473. (2007) Rev. 0, Mercury in Solids and Solutions by Thermal Decomposition, Amalgamation and Atomic Absorption Spectrophotometry. P. 1 -17 (Direct Mercury Analyzer Technique)
9.	Muscle	Sulfonamides - Sulfadiazine - Sulfapyridine - Sulfamerazine - Sulfamethazine - Sulfamonomethoxine - Sulfachloropyridazine - Sulfamethoxazole - Sulfadimethoxine - Sulfaquinoxaline	In-house method BQCLP_VPHL_DR_T5.4_01 Based on Western Australian Regional Laboratory of Australian Government Analytical Laboratories (AGAL) Method, No. 7, Issued June 1991. (High Performance Liquid Chromatography (HPLC) UV Detector Technique).
10.	- Animal Tissue and Processed Products - Egg	Protein – bound Nitrofurans Metabolites; ) - Nitrofurantoin (Metabolite: 1-aminohydantoin, AHD) - Furazolidone (Metabolite: 3- amino- 2-oxazolidinone, AOZ) - Furaltadone (Metabolite: 3-amino-5-morpholinomethyl-1, 3-oxazolidin-2-one, AMOZ) - Nitrofurazone (Metabolite: semicarbazide, SEM)	In-house method BQCLP_VPHL_DR_T5.4_02 (LC-MS/MS Technique) based on 1. J. of Chromatography A., (2001), Vol. 939. P. 49 – 58. 2. Veterinary Sciences Division, Department of Agriculture and Rural Development for Northern Ireland, Belfast's Standard Operating Procedure. Determination of Protein – bound Nitrofuran Residues in Chicken Tissues Using LC-MS-MS. 21 May 2002.

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No	Type of Sample	Test	Test Method
11.	- Animal Tissue and Processed Products - Egg - Milk - Honey	Chloramphenicol	In-house Method BQCLP_VPHL_DR_T5.4_03 (LC-MS/MS Technique) based on 1. Analytical Chemica Acta. 2003, Vol. 483, P. 125 – 135. 2. Food Additives and Contaminants. 2003, Vol. 20, No. 4, P. 335 – 342.
12.	Urine	Beta - agonists - Brombuterol - Cimaterol - Cimbuterol - Clenbuterol - Hydroxymethylclenbuterol - Mabuterol - Mapenterol - Ractopamine - Salbutamol - Zilpaterol	In-house Method BQCLP_VPHL_DR_T5.4_04 (LC-MS/MS Technique) based on 1. BVL, EU and National Reference Laboratory for Residues Short Description Method BETA_014. V. 1. (10 June 2005). Determination of Beta-agonist in Urine Using Screening dau Cartridges with LC-MS/MS. 2. Commission Decision 2002/657 of 12 August 2002. Off. J. Eur. Commun. L221/8-36. 3. Commission Regulation (EU). No. 37/2010 of 22 Dec 2009. 4. Corley, J. 2002. Handbook of Residue Analytical Methods for Agrochemicals. P. 1 – 18.

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No	Type of Sample	Test	Test Method
13.	Muscle	Beta - agonists - Brombuterol - Cimaterol - Cimbuterol - Clenbuterol - Hydroxymethylclenbuterol - Mabuterol - Mapenterol - Ractopamine - Salbutamol - Zilpatero	In-house Method BQCLP_VPHL_DR_T5.4_05 (LC-MS/MS Technique) based on 1. BVL, EU and National Reference Laboratory for Residues Short Description Method BETA_012. Determination of Beta-agonist in Muscle Using Screening dau Cartridges with LC-MS/MS. 2. Commission Decision 2002/657 of 12 August 2002. Off. J. Eur. Commun. L221/8-36. 3. Commission Regulation (EU). No. 37/2010 of 22 Dec 2009. 4. Corley, J. 2002. Handbook of Residue Analytical Methods for Agrochemicals. P. 1 – 18.
14.	Liver	Beta - agonists - Brombuterol - Cimaterol - Cimbuterol - Clenbuterol - Hydroxymethylclenbuterol - Mabuterol - Mapenterol - Ractopamine - Salbutamol - Zilpatero	In-house method BQCLP_VPHL_DR_T5.4_06 (LC-MS/MS Technique) based on 1. BVL, EU and National Reference Laboratory for Residues Short Description Method BETA_012. Determination of Beta-agonist in Muscle Using Screening dau Cartridges with LC-MS/MS. 2. Commission Decision 2002/657 of 12 August 2002. Off. J. Eur. Commun. L221/8-36. 3. Commission Regulation (EU). No. 37/2010 of 22 Dec 2009. 4. Corley, J. 2002. Handbook of Residue Analytical Methods for Agrochemicals. P. 1 – 18.

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No	Type of Sample	Test	Test Method
15.	Muscle	Tetracyclines - Oxytetracycline - Tetracycline - Chlortetracycline - Doxycycline	In-house Method BQCLP_VPHL_DR_T5.4_09 (LC-MS/MS Technique) based on 1. Hurtaud-Pessel, et. al. 2008. Euro Residue VI: Conference on Residue of Veterinary Drugs in Food. P. 1317 – 1322. 2. Guidelines for the Design and Implementation of National Regulatory Food Safety Assurance Programme Associated with the Use of Veterinary Drugs in Food Producing Animals. CAC/GL 71-2009. 3. Corley, J. 2002. Handbook of Residue Analytical Methods for Agrochemicals. P. 1 – 18. 4. Commission Decision 2002/657 of 12 August 2002. Off. J. Eur. Commun. L221/8-36. 5. Commission Regulation (EU). No. 37/2010 of 22 Dec 2009.

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No	Type of Sample	Test	Test Method
16.	Egg	Fluoroquinolone - Enrofloxacin - Ciprofloxacin	In-house Method BQCLP_VPHL_DR_T5.4_07 (LC-MS/MS Technique) based on 1. Hurtaud-Pessel, et. al. 2008. Euro Residue VI: Conference on Residue of Veterinary Drugs in Food. P. 1317 – 1322. 2. Durden and MacPherson. 2007. J. of AOAC International. Vol. 90, No. 2, P. 613 – 625. 3. Guidelines for the Design and Implementation of National Regulatory Food Safety Assurance Programme Associated with the Use of Veterinary Drugs in Food Producing Animals. CAC/GL 71-2009. 4. Corley, J. 2002. Handbook of Residue Analytical Methods for Agrochemicals. P. 1 – 18. 5. Commission Regulation (EU). No. 37/2010 of 22 Dec 2009.



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No	Type of Sample	Test	Test Method
17.	Muscle	Fluoroquinolone - Enrofloxacin - Ciprofloxacin	In-house Method BQCLP_VPHL_DR_T5.4_08 (LC-MS/MS Technique) based on 1. Hurtaud-Pessel, et. al. 2008. Euro Residue VI: Conference on Residue of Veterinary Drugs in Food. P. 1317 – 1322. 2. Guidelines for the Design and Implementation of National Regulatory Food Safety Assurance Programme Associated with the Use of Veterinary Drugs in Food Producing Animals. CAC/GL 71-2009. 3. Corley, J. 2002. Handbook of Residue Analytical Methods for Agrochemicals. P. 1 – 18. 4. Commission Decision 2002/657 of 12 August 2002. Off. J. Eur. Commun. L221/8-36. 5. Commission Regulation (EU). No. 37/2010 of 22 Dec 2009.
18.	Veterinary Drugs (Sterile Injectable Solution)	pH Value	USP 37/ NF 32: 2014 and BP 2014.
19.	Tylosin Injectable Solution	Tylosin	British pharmacopoeia (Veterinary) 2014 (Microbiological assay method).
20.	Enrofloxacin Injection	Enrofloxacin	In-house method BQCLP_VDAL_T5.4_02 based on USP-37/ NF 32: 2014. Monograph Enrofloxacin; Related compounds. P. 2797 - 2799 (High Performance Liquid Chromatography (HPLC) Diode Array Detector Technique.)
21.	Disinfectants	Efficacy of Disinfectants - <i>Staphylococcus aureus</i> - <i>Salmonella enterica</i> - <i>Pseudomonas aeruginosa</i>	AOAC Official Method of Analysis. Chapter 6. by Use Dilution Method. - <i>Staphylococcus aureus</i> (955.14, 2013) - <i>Salmonella enterica</i> (955.15, 2013) - <i>Pseudomonas aeruginosa</i> (964.02, 2012).

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No	Type of Sample	Test	Test Method
22.	Potable Water from Livestock Farms	Beta – agonists - Salbutamol - Clenbuterol HCl - Ractopamine HCl	In-house Method BQCLP_VDAL_T5.4_09 (LC/MS-Ion Trap Technique) in Connection with: 1. Analytica Chimica Acta 529 (2005): 199-205. 2. Commission Decision 2002/657/EC. Implementing Council Directive 96/23/EC. Concerning the Performance of Analytical Methods and the Interpretation of Results. 2002; 8-36. 3. Funk W, Dammann V, Donnevert G. Quality Assurance in Analytical chemistry, 2 <sup>nd</sup> ed ; 2007 : 84. 4. Irish national accreditation board; Wilton Park House, Wilton Place, Dublin 2, Ireland. PS15 Guide to method validation for quantitative analysis in chemical testing laboratories Issue; 2012. 5. ISO 11843-2: 2000. Capability of Detection Part 2: Methodology in the linear calibration case. 6. ISO 11843-5: 2008. Capability of Detection Part 5: Methodology in the linear and non-linear calibration case. 7. Miller,NJ, Miller,CJ. Statistics and Chemometrics for Analytical chemistry. 5 <sup>th</sup> ed. London: British Library; 2005. 8. SANCO/ 2004/2726-rev; 4-December 2008. Guidelines for the Implementation of Decision 2002/657/EC.



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No	Type of Sample	Test	Test Method
23	Milk (Raw milk, milk products)	Aerobic plate count	FDA BAM <i>Online</i> , 2001. (Chapter 3)
		Coliform	FDA BAM <i>Online</i> , 2013. (Chapter 4)
24	Muscle	Nitroimidazoles - Dimetridazole (DMZ) - 2-hydroxymethyl-1-methyl-5-nitroimidazole (HMMNI) - Ipronidazole (IPZ) - Hydroxyipronidazole (IPZOH) - Metronidazole (MNZ) - Hydroxymetronidazole (MNZOH) - Ronidazole (RNZ)	In-house method BQLCP_VPHL_DR_T5.4_11 by LC-MS/MS based on BVL, EU and national Reference lab, Nitroimidazoles in muscle and plasma by LC-MS/MS short description (01.07.05) NIM_009
25	Egg and Honey	Total Residue Nitrofurans Metabolites; - 3-amino-5-morpholinomethyl-1,3-oxazolidin-2-one (AMOZ) - 3-amino-2-oxazolidinone (AOZ) - 1-aminohydantoin (AHD) - semicarbazide (SEM)	In-house method BQLCP_VPHL_DR_T5.4_12 by LC-MS/MS based on Leitner, A., Zollner, P., Linder, W., 2001, Determination of the metabolites of nitrofurans antibiotics in animal tissue by high-performance liquid chromatography-tandem mass spectrometry. <i>J.Chromatography A</i> , 939, 49-58
26	Meat and Meat Products - Egg and Egg Products - Carcass - Animal skin - Animal Entrails - Dairy and Dairy products - Dog Chew	Coagulation positive Staphylococci and Staphylococcus aureus	ISO 6888-3:2003 (Detection and MPN technique for low numbers)

*Chanchal*

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