



**Bureau of Laboratory Quality Standards
Ministry of Public Health**

This is to certify that

**The laboratory of
Betagro Science Center Company Limited
(Phatthalung Branch)**

367 Moo 7, Khok Sak, Bang Kaeo, Phatthalung, 93140 Thailand

has been accepted as an

accredited laboratory complying with the ISO/IEC 17025:2017
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

Food, Animal feed, Samples from the primary production stage

and Veterinary diagnosis Testing

Patavee Soisangwan

(Dr. Patavee Soisangwan)

Director of Bureau of Laboratory Quality Standards

Date of Accreditation : 21 April 2023

Valid Until : 20 April 2027

Accreditation Number 1301/62

The laboratory of Betagro Science Center Company Limited (Phatthalung Branch) has been accepted as an accredited laboratory in the field of food, animal feed, samples from the primary production stage and veterinary diagnosis testing for the following scopes.

No	Type of Sample	Test	Method
1	<ul style="list-style-type: none"> - Meat and meat products (Fresh, Chilled, Frozen, Heat treated, Process) - Animal carcass - Seafood and seafood products (Fresh, Chilled, Frozen, Heat treated, Processed) - Egg and egg products (Fresh, Chilled, Frozen, Heat treated, Process) - Ready-to-Cook Foods - Ready-to-Eat Foods - Instant Food - Vegetable and vegetable products - Fruit and fruit products 	1. Total Viable Count (TVC) (CFU)	Compendium of Methods for the Microbiological Examination of Foods, (APHA), 5 th Edition, 2015 (Chapter 8)
		2. Coliforms (CFU, MPN)	Compendium of Methods for the Microbiological Examination of Foods, (APHA), 5 th Edition, 2015 (Chapter 9)
		3. <i>Escherichia coli</i> (CFU, MPN)	
		4. Enterobacteriaceae (CFU)	Nord Val Certificate No. 042
		5. <i>Staphylococcus aureus</i> (CFU)	
		6. Enterococci (CFU)	Nord Val Certificate No. 047
		7. <i>Clostridium perfringens</i> (CFU)	ISO 7937:2004
		8. <i>Listeria monocytogenes</i>	AFNOR Certificate No. BIO 12/18-03/06
		9. <i>Listeria</i> spp. (Detected or not detected)	
		10. <i>Salmonella</i> spp. (Detected or not detected)	ISO 6579-1:2017/ Amd.1:2020
		11. Yeasts	Compendium of Methods for the Microbiological Examination of Foods, (APHA), 5 th Edition., 2015 (Chapter 21)
12. Molds			
13. Yeasts and Molds (CFU)			
2	Meat and meat products (Fresh, Chilled, Frozen, Heat treated, Processed)	14. <i>Campylobacter</i> spp.	AFNOR Certificate No. BIO 12/29-05/10
		15. <i>Campylobacter jejuni</i>	
		16. <i>Campylobacter coli</i> (Detected or not detected)	

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No	Type of Sample	Test	Method
3	<ul style="list-style-type: none"> ● Animal feed ● Samples from the primary production stage <ul style="list-style-type: none"> - Surface swab - Sweeping swab - Boot swab - Drag swab - Egg shell - Litter - Cloacal swab 	17. <i>Salmonella</i> spp. (Detected or not detected)	ISO 6579-1:2017/ Amd.1:2020
4	<ul style="list-style-type: none"> ● Non-potable water <ul style="list-style-type: none"> - Water to be used in the factory - Supply water ● Potable water <ul style="list-style-type: none"> - Drinking water in sealed container ● Ice 	18. Total Viable Count 22°C, 36°C (CFU)	ISO 6222:1999
		19. Total Viable Count 35°C (CFU)	3M Petrifilm Aqua Heterotrophic (AQHC) Plate method
		20. Coliforms (MPN) 21. <i>Escherichia coli</i> (Detected or not detected, MPN)	Standard Methods for the Examination of Water and Wastewater. APHA, AWWA, WEF, 23 rd Edition, 2017. Part 9221 B, 9221 E, 9221 F
		22. <i>Staphylococcus aureus</i> (CFU, Detected or not detected)	Standard Methods for The Examination of Water and Wastewater. APHA, AWWA, WEF, 23 rd Edition, 2017. Part 9213 B
		23. Enterococci (CFU)	Nordval International Certificate No. 047

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No	Type of Sample	Test	Method
4	<ul style="list-style-type: none"> ● Non-potable water <ul style="list-style-type: none"> - Water to be used in the factory - Supply water ● Potable water <ul style="list-style-type: none"> - Drinking water in sealed container ● Ice 	24. <i>Clostridium perfringens</i> (CFU)	ISO 14189:2013
		25. <i>Salmonella</i> spp. (Detected or not detected)	ISO 19250:2010
5	Meat (Fresh, Chilled, Frozen)	Detection of Anti-Bacterial substance residues: 26. Penicillin G 27. Sulfadimidine 28. Streptomycin 29. Erythromycin 30. Ciprofloxacin 31. Oxytetracycline	In - house method TI-BSCPL-MIC-014 by six-plate agar diffusion assay
6	Environment samples in the area of food production and food handling <ul style="list-style-type: none"> - Swab test - Surface Swab - Sweeping Swab - Drag Swab 	32. Total Viable Count (TVC) (CFU)	Compendium of Methods for the Microbiological Examination of Foods, (APHA), 5 th Edition, 2015 (Chapter 8)
		33. Coliforms 34. <i>Escherichia coli</i> 35. Enterobacteriaceae (CFU)	Compendium of Methods for the Microbiological Examination of Foods, (APHA), 5 th Edition, 2015 (Chapter 9)
		36. <i>Salmonella</i> spp. (Detected or not detected)	ISO 6579-1:2017/Amd.1:2020

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No	Type of Sample	Test	Method
7	Seafood and seafood products (Fresh, Chilled, Frozen, Heat treated, Process, Animal carcass)	37. <i>Vibrio parahaemolyticus</i> (MPN)	FDA BAM <i>Online</i> , 2004 (Chapter 9)
		38. <i>Vibrio cholerae</i> (Detected or not detected)	
8	Chicken serum	39. Infectious Bronchitis Virus (IBV) Antibody Test	BioChek Infectious Bronchitis Virus Antibody Test Kit, Product Code CK 119 Rev.04 by ELISA technique
		40. Newcastle Disease Virus (NDV) Antibody Test	In-house method TI-BSCPL-VIR-004 based on OIE Manual of Diagnostic Tests and Vaccines for Terrestrial Animals 2013 Chapter 2.3.14 Newcastle Disease (NB:Version Adopted in May 2012) by Haemagglutination Inhibition Test (HI)
		41. Infectious Bronchitis Virus (IBV) Antibody Test	In-house method TI-BSCPL-VIR-005 based on A Laboratory Manual for The Isolation, Identification and Characterization of Avian Pathogens, 5 th Edition, 2008. By Haemagglutination Inhibition Test (HI)

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No	Type of Sample	Test	Method
9	Swine serum	42. Porcine Reproductive and Respiratory Syndrome Virus (PRRSV) Antibody Test	Porcine Reproductive and Respiratory Syndrome Virus Antibody Test Kit IDEXX PRRSX3:06-19774-05,2016 by ELISA technique
		43. Porcine Reproductive and Respiratory Syndrome Virus (PRRSV) Antibody Test	Porcine Reproductive and Respiratory Syndrome Virus Antibody Test Kit BIONOTE PRRS Ab ELISA 4.0 Doc.No.14404-10E Revised date, August 25, 2015