12th SEACFMD Laboratory Network Meeting

4-5 November 2019

Pakchong, Thailand

Report of Proficiency Testing for FMD Laboratories in SEA including plans for 2019-2021 national and SEA

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- **Objectives**

  - To evaluate the performance of individual operators or laboratory staff.
  - To evaluate the laboratory capability to conduct specific diagnostic test.
  - Requirement of the ISO/IEC 17025:2005 that have been ISO/IEC 17025:2017 standard for laboratory testing to apply for accreditation or upgrade approved tests.

Type of Program	YEAR	Round	Scope	Participants	Status
Inter – Laboratory Comparison Testing	2017	5th	✓Antigen detection with ELISA typing test ✓FMD serology by liquid phase blocking ELISA (LP ELISA) and NSPs test	-Nation Lab -SEACFMD Lab	Finished
PROFICIENCY TESTING SCHEME	2018	6th	✓Antigen detection with ELISA typing testand PCR ✓FMD serology by liquid phase blocking ELISA (LP ELISA) and NSPs test	-Nation Lab -Animal quarantine service center -SEACFMD Lab (Did not delivery)	Finished
PROFICIENCY TESTING SCHEME	2019	7th	✓Antigen Detection of Foot and Mouth Disease (FMD) Diagnosis with ELISA Typing Test and PCR ✓FMD serology by liquid phase blocking ELISA (LP ELISA) and NSPs test	-Nation Lab -Animal quarantine service center -SEACFMD Lab - AFRICA Lab	On going

PROFICIENCY TESTING SCHEME (Round 6th / 2018)

Foot and Mouth Disease (FMD) Diagnosis

❖ Antibody detection

❑ PT serum sample

No.	Name/Details
1	Cattle serum Post Challenge O189 14 day
2	Cattle serum safety test Bivalent O189, Asakol 14 day
3	Newborn Calf serum Lot no:CP14-1 191 Exp.:05/2019
4	Cattle serum safety test Trivalent O189, Asakol, Asia1 28 days (Booster 14 days)
5	Cattle serum safety test Mono type A118/87

❑ Interpretation of LP (Internal Control)

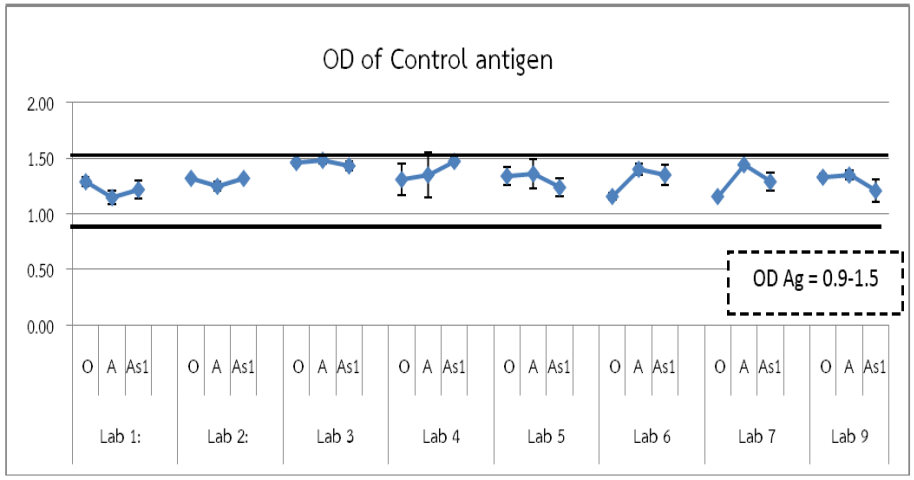
1. OD value of Antigen Control as 0.9-1.5
2. Percent Inhibition (%PI) of strong positive control serum ≥ 90
3. Percent Inhibition (%PI) of weak positive control serum (C+) ≥ 50
4. Percent Inhibition (%PI) of negative control serum (C-) < 50

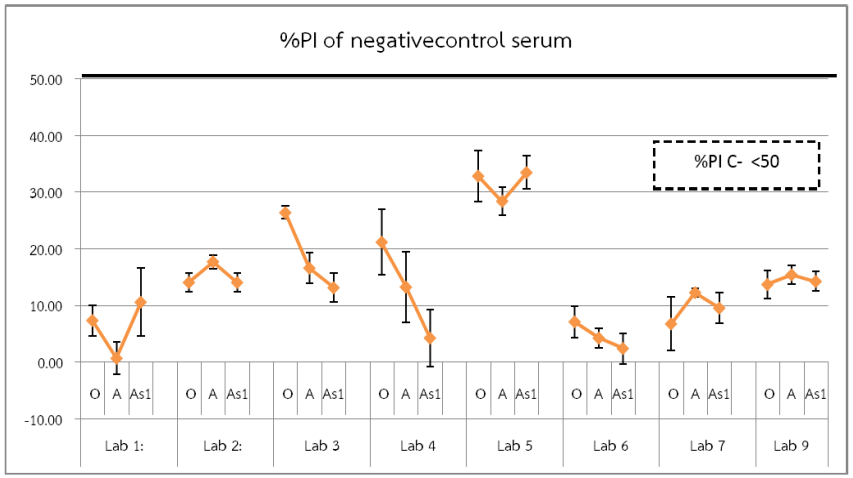
❑ Interpretation of NSP (Internal Control)

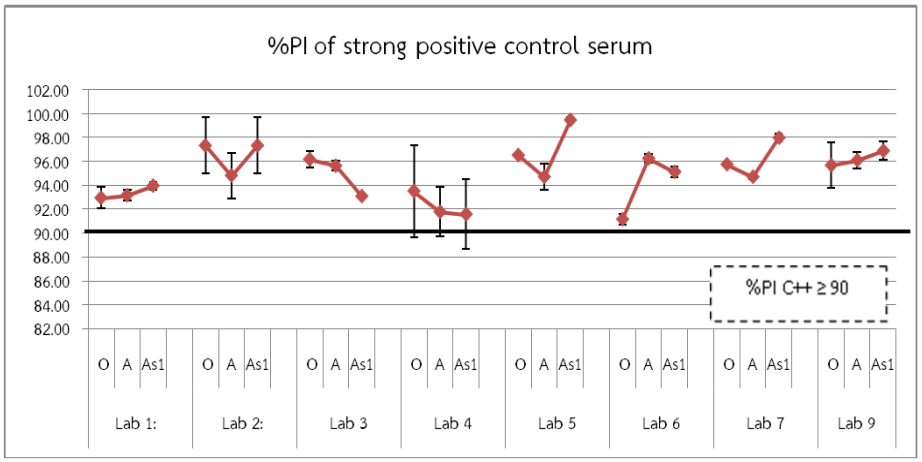
1. OD value of Max ≥ 1.00
2. Percent Inhibition (%PI) of strong positive control ≥ 70
3. Percent Inhibition (%PI) of weak positive control (C+) ≥ 50

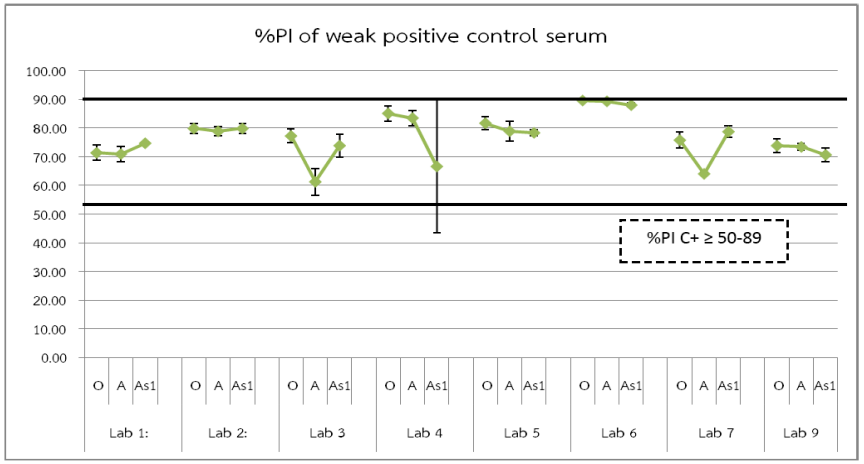
❖ **Antibody titer of PT sample** should not be less than ± 2 Two-fold dilution of **Reference titer***

Internal Quality Control of LP ELISA Testing



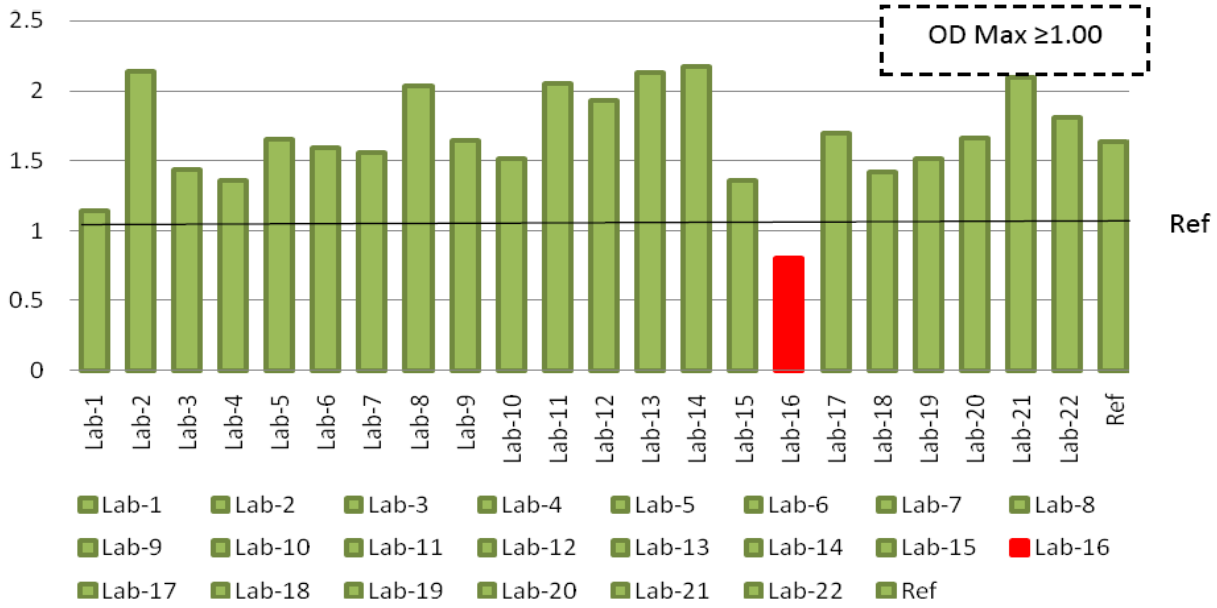




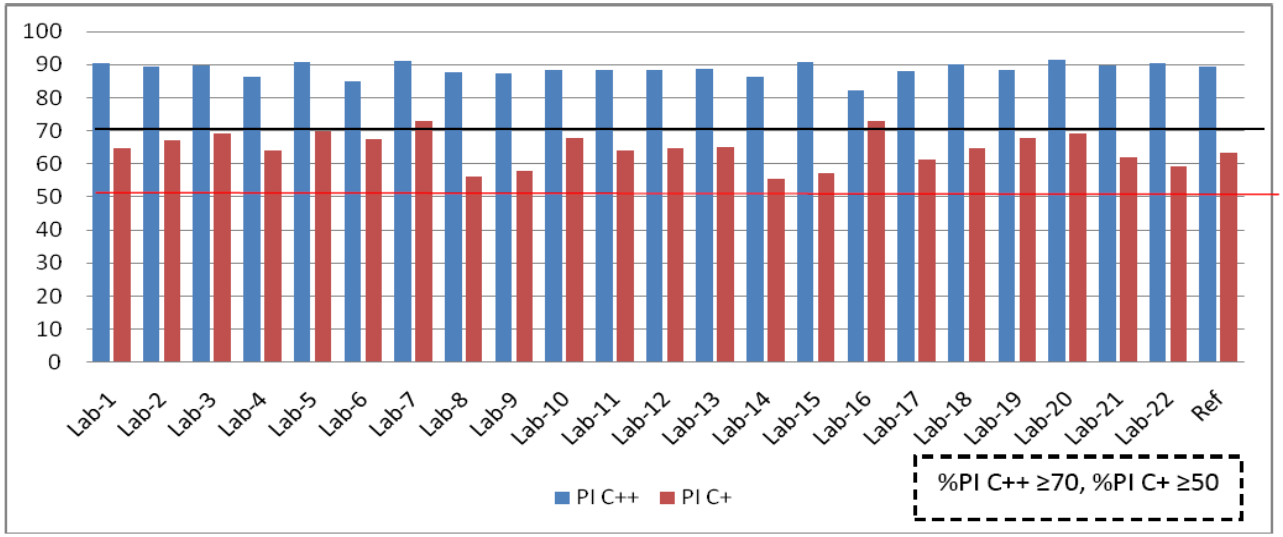


Internal Quality Control of 3ABC NSPs Testing

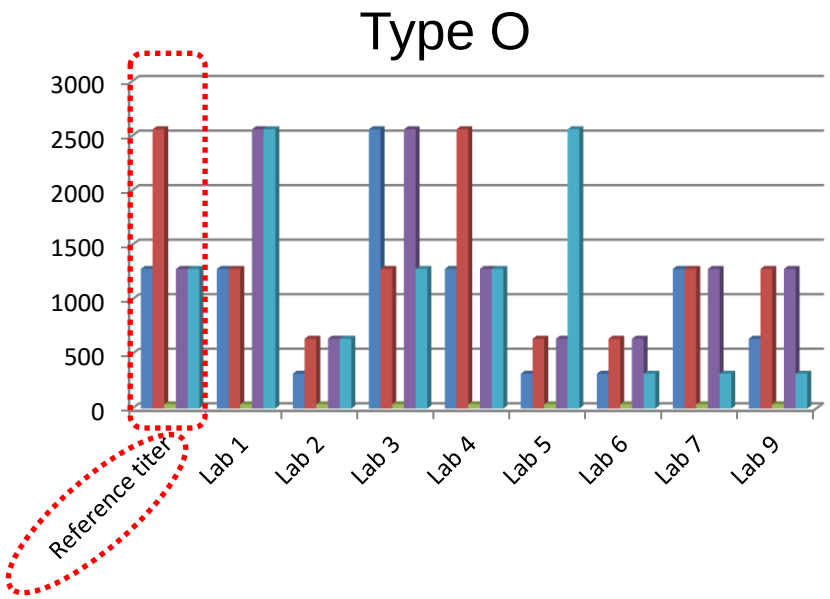
- OD value (Max.) as Company standard

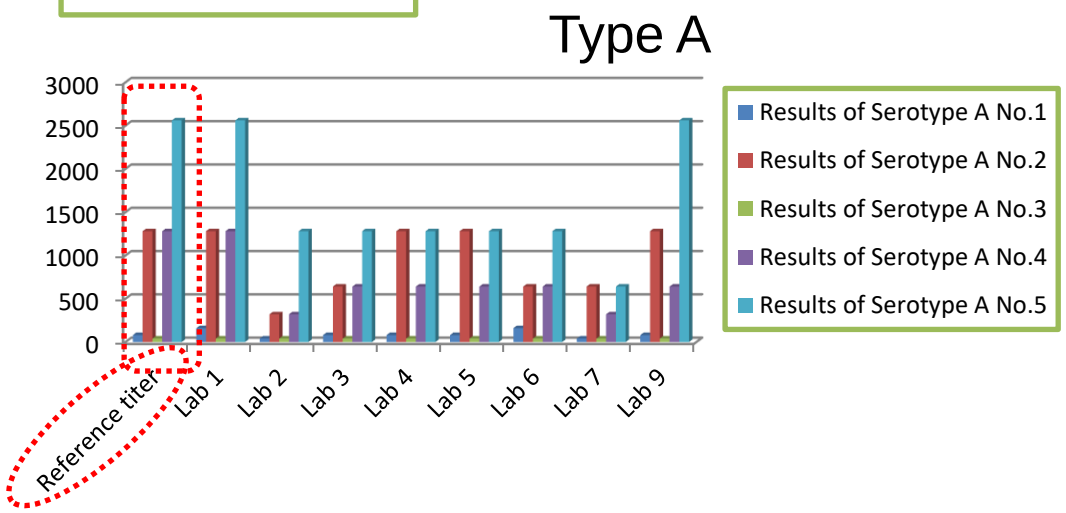


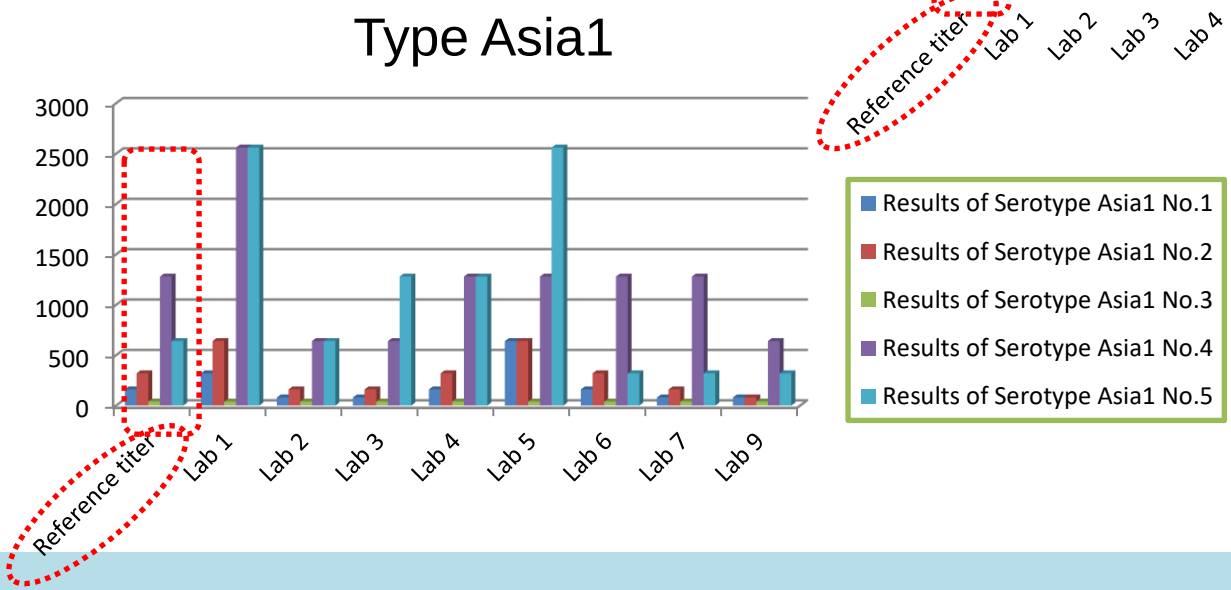
- Weak positive control and Positive control as Company standard



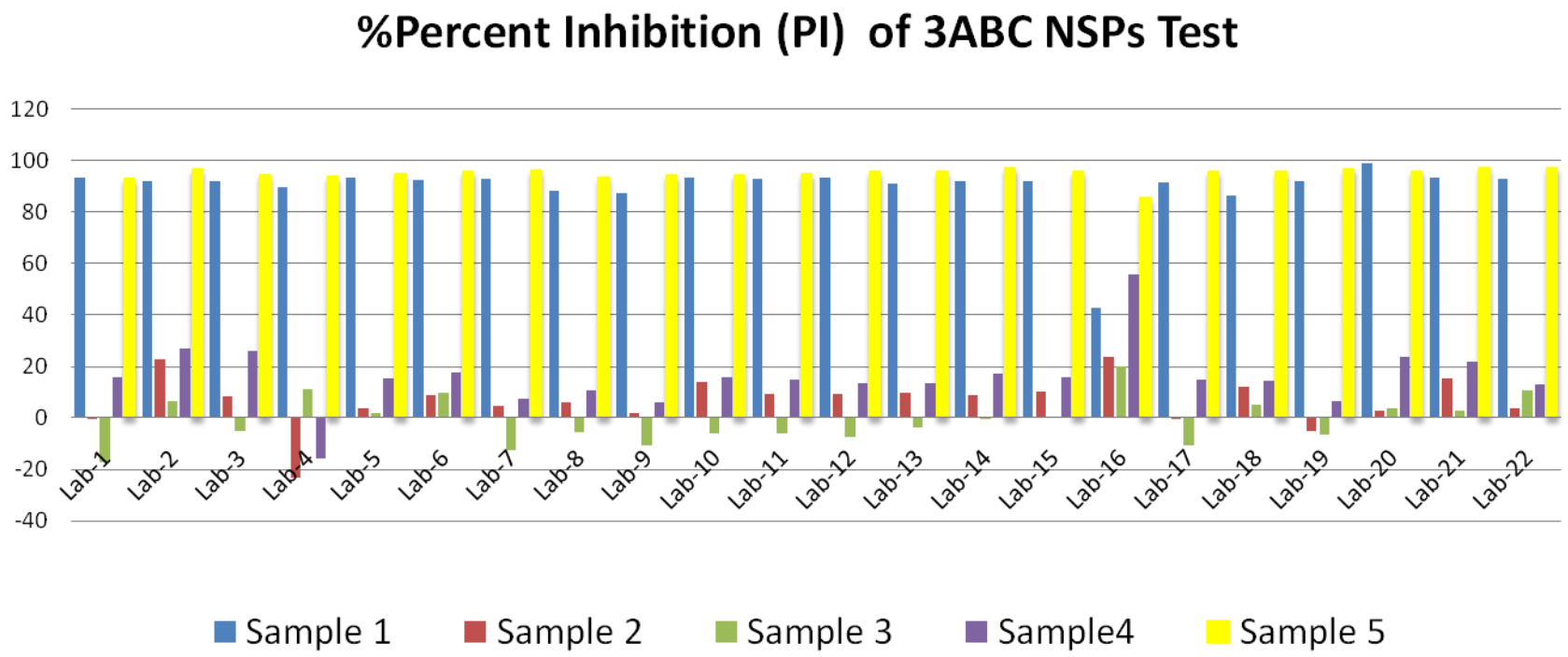
Results of LP-ELISA





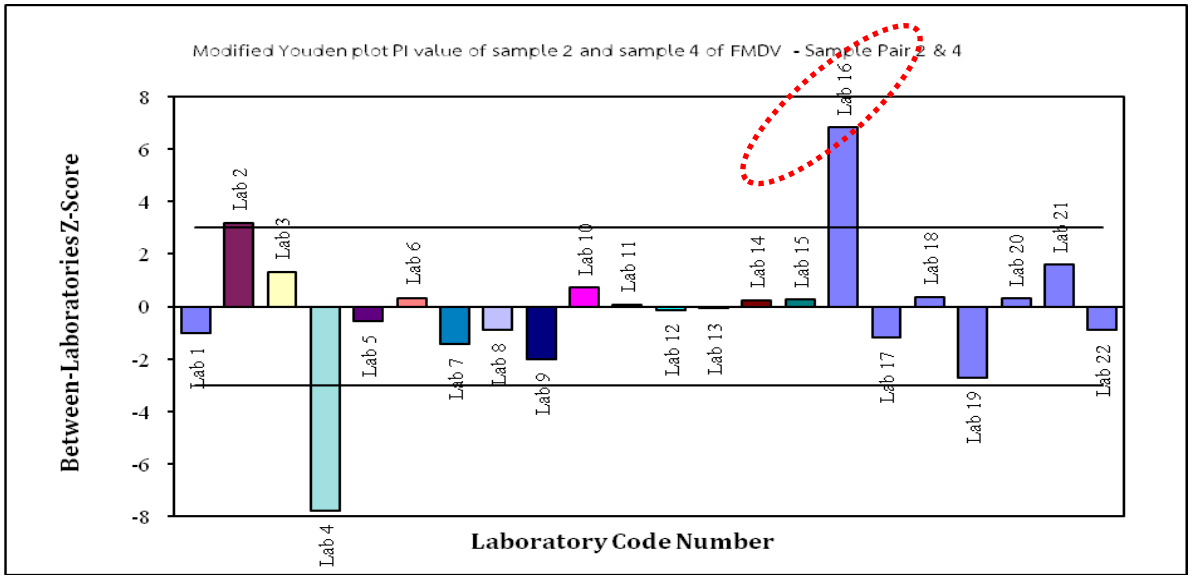


Results of 3ABC NSPs Test



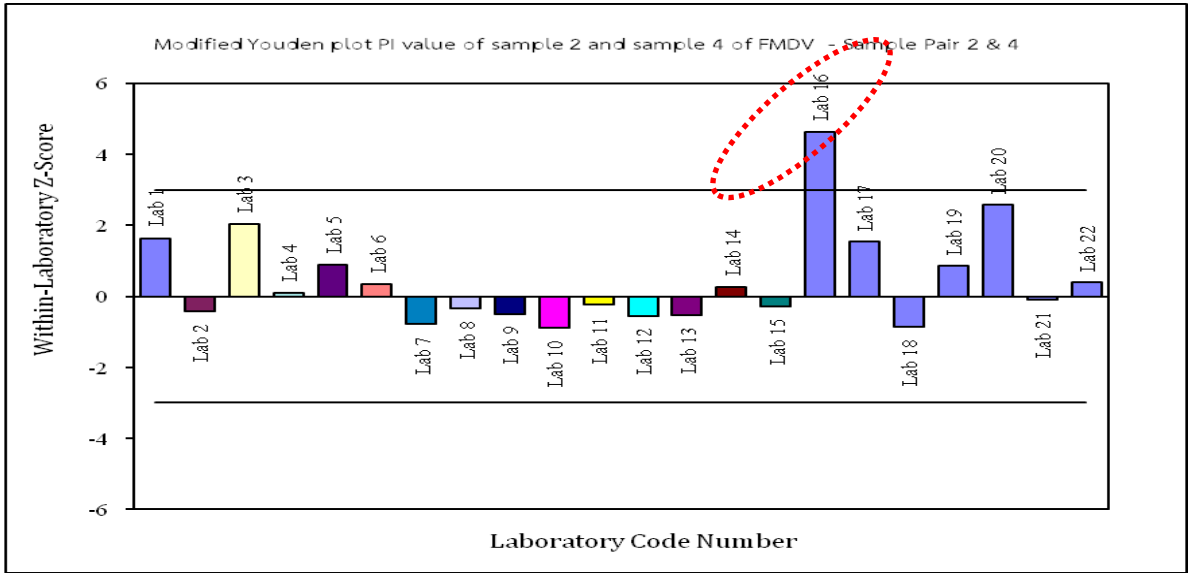
Z-Score

Between Laboratory



Systematic Error

Within Laboratory



PROFICIENCY TESTING SCHEME (Round 6th / 2018)

Foot and Mouth Disease (FMD) Diagnosis

❖ Antigen detection

PT sample	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6
Detail	PBS	Inactivated FMDV serotype A (High OD)	Inactivated FMDV serotype A (Low OD)	Inactivated FMDV serotype O	Inactivated FMDV serotype Asia1 (High OD)	Inactivated FMDV serotype Asia1 (Low OD)
PT result	NVD	A (Strong)	A (Weak)	O	Asia1 (Strong)	Asia1 (Weak)

Remark: All of sample had checked inactivation by Virus Isolation before distribution.

List	Lower control limit (LCL)	Upper control limit (UCL)
OD of Control Antigen (Antigen Detection)	1.3	1.8

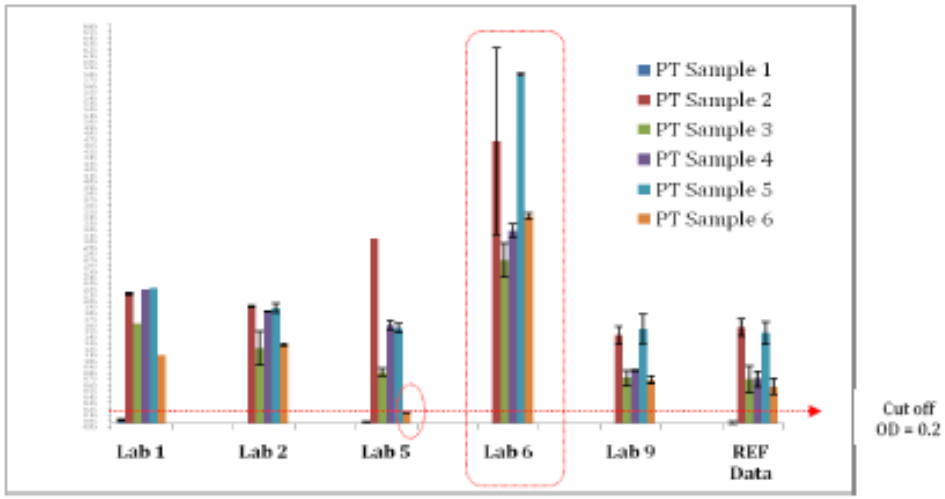


Figure 1. Overview of antigen typing result from each laboratory, Cut off OD ≥ 0.20 defined as positive

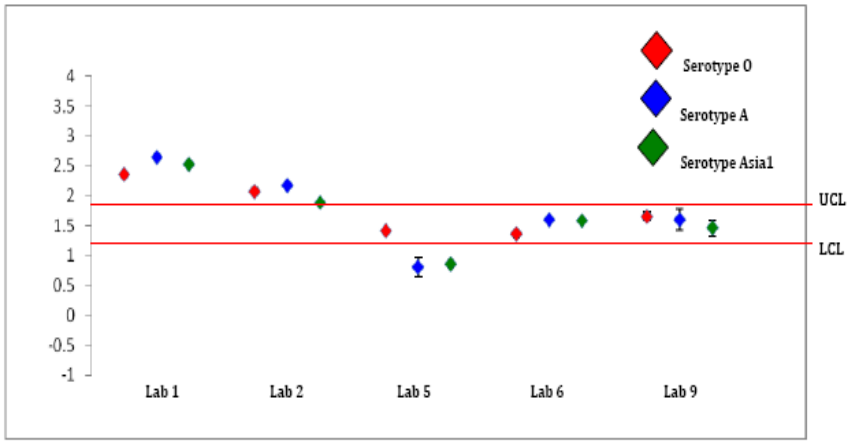
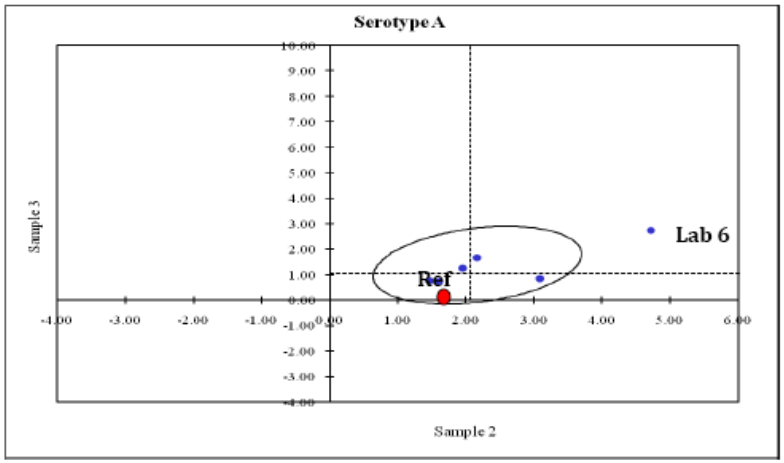
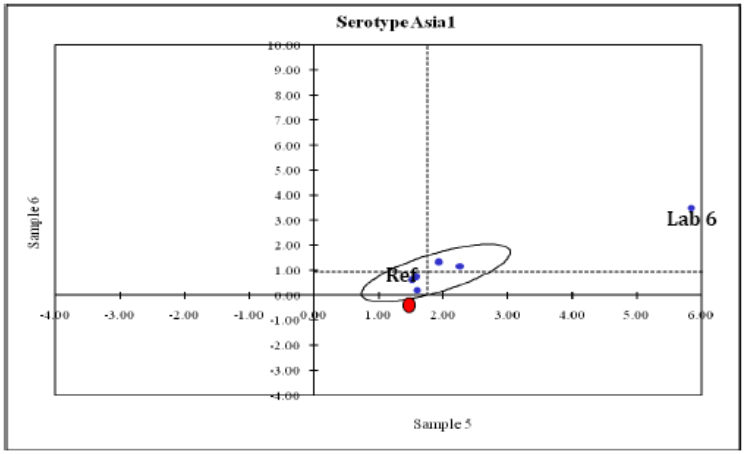


Figure 2 Overview IQC data of OD antigen control type O, A and Asia1 at dilution 1:1 by ELISA Typing per laboratory, an acceptance OD control should be in range 1.3-1.8.

Results ELISA Typing test





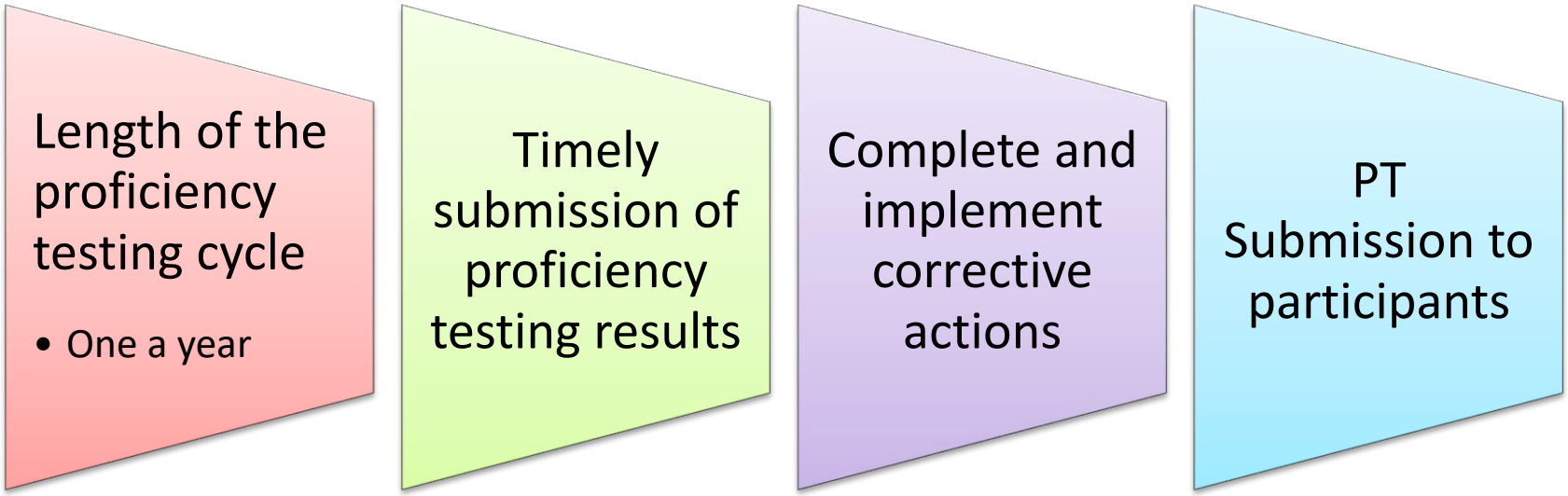
Sample 2 and 3

Sample 5 and 6

Plan for PT 2019

- Meeting and plan ✓
- Preparation and send invitation letter ✓
- Participation reply ✓
- Coordination and send PT samples ✓
- Testing
- Send results
- Analysis
- Report

Plan to consideration in 2019



- **Round 7th / 2019**
  (On going invitation and distribution to participants)

Acknowledgment

Working Group

Working group in PT program are listed as follows;

- Dr. Romphruke Udon
- Dr. Kingkarn Boonsuya Seeyo
- Dr. Karnrawee Suanpat
- Miss Janya Samanit
- Miss Piyaporn Chareonpol
- Dr. Sahawatchara Ungvanijban
- Dr. Amonrat Choonnassard
- Miss Sopha Singklebut
- Mr. Alongkon Puntumart

Thank you for your participation